NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

Harold Runnels Building
1190 St. Francis Drive
P.O. Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-2918 Fax (505) 827-2965
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The Honorable M
Santa Ana Pueblo
2 Dove Road
Santa Ana Pueblo
PS Form 3800, August 2006

June 14, 2013 Remailed 6/26/13 TO!

The Honorable Myron Armijo, Governor
Pueblo of Santa Ana
2 Dove Road
Santa Ana Pueblo, NM ~~87072~~ 87004

Myron Armijo, Governor
Santa Ana Pueblo
2 Dove Road
Santa Ana Pueblo, NM 87004

RE: Preliminary Draft Ground Water Discharge Permit for the Los Alamos National Laboratory Radioactive Liquid Waste Treatment Facility, DP-1132

Dear Governor Armijo:

The purpose of this letter is to inform you that the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) has been in the process of drafting a ground water Discharge Permit for the Los Alamos National Laboratory (LANL) Radioactive Liquid Waste Treatment Facility. This facility processes chemical and radioactive wastewater from various Technical Areas (TAs) at LANL and discharges treated wastewater to a tributary of Mortandad Canyon, to mechanical evaporators and is proposing to discharge to a solar evaporative tank system in the future. NMED has given this facility the permit number DP-1132. An application for a Ground Water Discharge Permit for this facility was first received by NMED on April 16, 1996 and LANL has submitted copious information concerning the facility over the intervening years. On February 16, 2012, LANL submitted a revised application for the Radioactive Liquid Waste Treatment Facility along with supplemental information on August 10, 2012.

With the information contained in LANL's submittals and a series of technical meetings with LANL, NMED has prepared a *preliminary* draft Discharge Permit (copy enclosed). In accordance with NMED's Tribal Communication and Collaboration Policy (2009), NMED is extending this invitation to the Pueblo to discuss any comments or concerns regarding this preliminary draft Discharge Permit prior to the formal public notification and comment period. It is NMED's hope that engaging the Pueblo now will allow for meaningful and constructive discussions, before the draft Discharge Permit is published for formal public comment.

NMED's goal is to publish notice of the availability of a draft Discharge Permit and begin the formal public notice and comment period in August 2013. At that time, Santa Ana Pueblo will have the opportunity to provide formal comments, or request that a hearing be held on the draft Discharge Permit.

Should you have any questions or if Santa Ana Pueblo is interested in meeting with NMED staff to discuss the preliminary draft, please contact the technical reviewer for this site, Jennifer Fullam at (505) 827-2909 (jennifer.fullam@state.nm.us) or Robert George, Domestic Waste Team Leader for the Ground Water Quality Bureau at (505) 476-3648 (robert.george@state.nm.us).

Sincerely,

for Jerry Schoeppner

Jerry Schoeppner, Chief
Ground Water Quality Bureau

JS:RG/rjg

Encls: Preliminary Draft Discharge Permit DP-1132, LANL-RLWTF dated June 14, 2013

cc: Alan Hatch, Director, Department of Natural Resources, Pueblo of Santa Ana, 2 Dove Road, Santa Ana NM 87004
Jennifer Fullam, GWQB Tribal Contact (via email, without enclosure)
Mary Rose, NMED Tribal Liaison (without enclosure)

From:	Beers, Bob
To:	George, Robert, NMENV
Cc:	Fullam, Jennifer, NMENV; Pruett, Jennifer, NMENV; Saladen, Michael T; Alexander, Mike; Bennett, John T; McClenahan, Bob; Macgregor, Alan S; English, Joe; Turner, Gene E; Douglass, Craig R
Subject:	Corrective Action Plan, Pumping Test at Monitoring Well R-42
Date:	Wednesday, July 24, 2013 12:09:00 PM
Attachments:	U1301153.pdf R-42 Corrective Action Plan_elevated NO3-N.docx

Mr. George,

As you know, on May 2, 2013, the NMED approved a request from DOE/LANS for temporary permission to discharge treated groundwater from a pumping test at monitoring well R-42 (approval letter attached).

Condition No. 17 of the approval letter states,

Should the analytical results for a sample indicate nitrate-nitrogen or chromium at a concentration greater than 9.0 mg/L or 0.045 mg/L respectively, treated water shall not be land applied. LANL shall notify NMED of analytical results which exceed 9.0 mg/1 Nitrate-nitrogen and 0.045 mg/L chromium and shall propose corrective actions to NMED to remedy the situation. Following NMED's approval for the implementation of corrective actions discharge may resume.

Since the beginning of the pumping test, nitrate-nitrogen concentrations in the influent (raw water) to the ion exchange (IX) treatment system have ranged from 5 mg/L to 7/mg/L, with a maximum concentration of 7.1 mg/L. Nitrate-nitrogen concentrations in the effluent (product water) were consistently non-detect (<0.002 mg/L).
On July 16, 18, and 22, three daily grab samples of product water were collected while lagoon "B" was being filled; the nitrate-nitrogen concentrations were 7.5 mg/L, 13.0 mg/L, and 14.0 mg/L, respectively. In accordance with Condition No. 17, DOE/LANS is required to submit a corrective action plan to NMED. Please find the attached plan.

The key elements of the corrective action plan are as follows:

1. Collect a representative sample from lagoon "B" and analyze for nitrate-nitrogen.
2. Replace both IX vessels.
3. If the sample result shows nitrate-nitrogen to be <9 mg/L then DOE/LANS will proceed with land application of the water in lagoon "B".
4. If the sample result shows nitrate-nitrogen to be >9 mg/L then DOE/LANS will retreat the water in lagoon "B".

It is imperative that DOE/LANS execute the corrective action plan in a timely manner; R-42 continues to produce groundwater requiring storage and treatment. Delays in resuming treatment could force DOE/LANS to stop the pumping test.

Please call me at 667-7969 if you have questions.

Your prompt response to the proposed corrective action plan is requested.

Sincerely,

Bob Beers
Environmental Compliance Programs
Los Alamos National Security, LLC
505-667-7969

UP-1132 blue file 111KS

Los Alamos
NATIONAL LABORATORY

Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
505-667-0666

National Nuclear Security Administration
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87545
(505) 667-5794/FAX (505) 667-5948

Date: JUL 25 2013
Symbol: ENV-DO-13-0084
LAUR: 13-25307

Mr. Jerry Schoeppner, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

GROUN W
JUL 26 2013
B REA

Dear Mr. Schoeppner:

SUBJECT: DISCHARGE PLAN DP-1132 QUARTERLY REPORT, SECOND QUARTER 2013, TA-50 RADIOACTIVE LIQUID WASTE TREATMENT FACILITY

This letter from the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) is the second quarter 2013 Discharge Plan DP-1132 report for the Technical Area (TA)-50 Radioactive Liquid Waste Treatment Facility (RLWTF). Since the first quarter of 1999, DOE/LANS have provided the New Mexico Environment Department (NMED) with voluntary quarterly reports containing analytical results from effluent and groundwater monitoring.

During the second quarter of 2013, no effluent was discharged to either the National Pollutant Discharge Elimination System (NPDES) Outfall 051 or to the recently constructed solar evaporative tanks (SET) at Technical Area (TA)-52; all effluent was evaporated on-site at the effluent evaporator.

Quarterly Monitoring Results, Mortandad Canyon Alluvial Groundwater Wells
Table 1.0 presents the analytical results from sampling conducted at Mortandad Canyon alluvial well MCO-3 during the second quarter of 2013. No samples were collected from alluvial wells MCO-4B, MCO-6, and MCO-7 because there was insufficient water present. A sample from MCO-3 was submitted to GEL Laboratories LLC (GEL) for analysis. All of the analytical results were below the New Mexico Water Quality Control Commission (NMWQCC) 3103 standards for nitrate-nitrogen (NO_3-N), fluoride (F), and total dissolved solids (TDS). Analytical results from the sampling of intermediate and regional aquifer wells in Mortandad Canyon can be accessed online at the Intellus New Mexico environmental monitoring data web site (http://www.intellusnmdata.com).

TA-50 RLWTF Effluent Monitoring Results
No final weekly composite (FWC) samples were collected during the second quarter of 2013 because no effluent was discharged to Mortandad Canyon.

No final monthly composite (FMC) samples were collected during the second quarter of 2013 because no effluent was discharged to Mortandad Canyon.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this report.

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:RSB/lm

Cy: James Hogan, NMED/SWQB, Santa Fe, NM
John E. Kieling, NMED/HWB, Santa Fe, NM
Stephen M. Yanicak, NMED/DOE/OB, (E-File)
Hai Shen, NA-OO-LA, (E-File)
Gene E. Turner, NA-OO-LA, (E-File)
Carl A. Beard, PADOPS, A102
Michael T. Brandt, ADESH, (E-File)
Alison M. Dorries, ENV-DO, (E-File)
Randal S. Johnson, DSESH-TA55, (E-File)
Michael T. Saladen, ENV-CP, (E-File)
Robert S. Beers, ENV-CP, K490
Robert C. Mason, TA55-DO, (E-File)
Dianne W. Wilburn, TA55-DO, (E-File)
John C. Del Signore, TA-55 RLW, (E-File)
LASOmailbox@nnsa.doe.gov, w/enc., (E-File)
locatesteam@lanl.gov, w/enc., (E-File)
ENV-CP Correspondence File, w/enc., K490

Table 1.0. Mortandad Canyon Alluvial Well Sampling, 2nd Quarter, 2013.

Sampling Location	Sample Field Prep (F/UF)[1]	Sample Date	Perchlorate (ug/L)	NO_3+NO_2-N (mg/L)	TKN (mg/L)	NH3-N (mg/L)	TDS (mg/L)	F (mg/L)
MCO-3	F	5/13/2013	0.78	0.57	0.18	0.03	467	0.22
MCO-4B	F	4/26/2013	Dry[5]	Dry[5]	Dry[5]	Dry[5]	Dry[5]	Dry[5]
MCO-6	F	4/26/2013	Dry[5]	Dry[5]	Dry[5]	Dry[5]	Dry[5]	Dry[5]
MCO-7	F	4/26/2013	Dry[5]	Dry[5]	Dry[5]	Dry[5]	Dry[5]	Dry[5]
NM WQCC 3103 Groundwater Standards			*NA*[2]	*10 mg/L*[3]	*NA*[2]	*NA*[2]	*1000 mg/L*	*1.6 mg/L*

Notes:

[1]All samples filtered.

[2]NA means that there is no NM WQCC 3103 standard for this analyte.

[3]The NM WQCC 3103 Groundwater Standard is for NO_3-N.

[4]Ice means that ice and snow blocked safe access to the well.

[5]Dry means that there was insufficient water in the well for sampling.

J- means that the reported value is expected to be more uncertain than usual with a potential negative bias.

J+ means that the reported value is expected to be more uncertain than usual with a potential positive bias.

J means the reported value is greater than the Method Detection Limit (MDL) but less than the Reporting Limit (RL).

FULLAM DOCS 03 07 14 / CASCLOADS / LANL / LANL EMAILS

Fullam, Jennifer, NMENV

From: Fullam, Jennifer, NMENV
Sent: Thursday, July 25, 2013 11:00 AM
To: Rose, Mary, NMENV; Schoeppner, Jerry, NMENV
Cc: Pruett, Jennifer, NMENV
Subject: RE: LANL Draft DP
Attachments: DP1132 TN Cochiti 061413.pdf; DP1132 TN Jemez 061413.pdf; DP1132 TN San Ildefonso 061413.pdf; DP1132 TN Santa Ana 061413.pdf; DP1132 TN Santa Clara 061413.pdf

Mary,

Here are the electronic copies of the letters sent to the Tribes regarding LANL's Discharge Permit for the Radioactive Liquid Waste Treatment Facility (DP-1132). You may already have them as you were included on the cc list. Santa Ana was also sent a letter as they requested to be notified of any developments in LANL's Discharge Permit. Let me know if you need anything else. Thanks

Jennifer T. Fullam
Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
505.827.2909
jennifer.fullam@state.nm.us

From: Rose, Mary, NMENV
Sent: Wednesday, July 24, 2013 4:16 PM
To: Schoeppner, Jerry, NMENV
Cc: Pruett, Jennifer, NMENV; Fullam, Jennifer, NMENV
Subject: RE: LANL Draft DP

Hi Jerry. Yes, I'll follow up on this. Please send me a copy of the letters that went out. Secretary Flynn will probably want to contact San I himself, and I will call the other two. Santa Clara is very busy with the flooding that occurred but will call there just as an FYI, but I'll also email the letter to them. I'll keep you posted.

From: Schoeppner, Jerry, NMENV
Sent: Wednesday, July 24, 2013 4:12 PM
To: Rose, Mary, NMENV
Cc: Pruett, Jennifer, NMENV; Fullam, Jennifer, NMENV
Subject: LANL Draft DP

Mary:
The GWQB sent out letters to the Pueblos of Cochiti, Jemez, Santa Clara and San Idefonso notifying them that we were processing a DP for LANL and if they wanted to enter into Tribal Consultation, to contact NMED. Cochiti Pueblo responded and we are had scheduled a technical meeting (not consultation), but it was cancelled. We have not received a response from the other Pueblos. Could you contact the Pueblos that didn't respond to make sure they received our letter and determine if they plan to respond? Let me know if you have any questions. Thanks for your help.

Jerry

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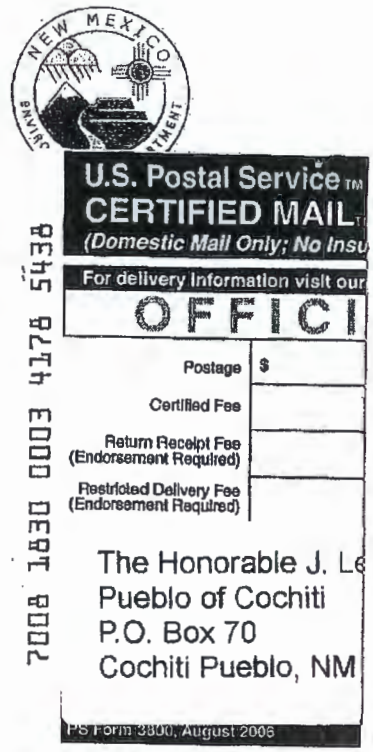

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 14, 2013

The Honorable J. Leroy Arquero, Governor
Pueblo of Cochiti
P.O. Box 70
Cochiti Pueblo, NM 87072

RE: Preliminary Draft Ground Water Discharge Permit for the Los Alamos National Laboratory Radioactive Liquid Waste Treatment Facility, DP-1132

Dear Governor Arquero:

The purpose of this letter is to inform you that the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) has been in the process of drafting a ground water Discharge Permit for the Los Alamos National Laboratory (LANL) Radioactive Liquid Waste Treatment Facility. This facility processes chemical and radioactive wastewater from various Technical Areas (TAs) at LANL and discharges treated wastewater to a tributary of Mortandad Canyon, to mechanical evaporators and is proposing to discharge to a solar evaporative tank system in the future. NMED has given this facility the permit number DP-1132. An application for a Ground Water Discharge Permit for this facility was first received by NMED on April 16, 1996 and LANL has submitted copious information concerning the facility over the intervening years. On February 16, 2012, LANL submitted a revised application for the Radioactive Liquid Waste Treatment Facility along with supplemental information on August 10, 2012.

With the information contained in LANL's submittals and a series of technical meetings with LANL, NMED has prepared a *preliminary* draft Discharge Permit (copy enclosed). In accordance with NMED's Tribal Communication and Collaboration Policy (2009), NMED is extending this invitation to the Pueblo to discuss any comments or concerns regarding this preliminary draft Discharge Permit prior to the formal public notification and comment period. It is NMED's hope that engaging the Pueblo now will allow for meaningful and constructive discussions, before the draft Discharge Permit is published for formal public comment.

NMED's goal is to publish notice of the availability of a draft Discharge Permit and begin the formal public notice and comment period in August 2013. At that time, Cochiti Pueblo will have the opportunity to provide formal comments, or request that a hearing be held on the draft Discharge Permit.

Should you have any questions or if Cochiti Pueblo is interested in meeting with NMED staff to discuss the preliminary draft, please contact the technical reviewer for this site, Jennifer Fullam at (505) 827-2909 (jennifer.fullam@state.nm.us) or Robert George, Domestic Waste Team Leader for the Ground Water Quality Bureau at (505) 476-3648 (robert.george@state.nm.us).

Sincerely,

for Jerry Schoeppner

Jerry Schoeppner, Chief
Ground Water Quality Bureau

JS:RG/rjg

Encls: Preliminary Draft Discharge Permit DP-1132, LANL-RLWTF dated June 14, 2013

cc: Jacob Pecos, Director, Dept. of Natural Resources and Conservation, P.O. Box 70, 255 Cochiti Street, Cochiti Pueblo, NM87072
Jennifer Fullam, GWQB Tribal Contact (via email)
Mary Rose, NMED Tribal Liaison

NEW MEXICO
ENVIRONMENT DEPARTMENT

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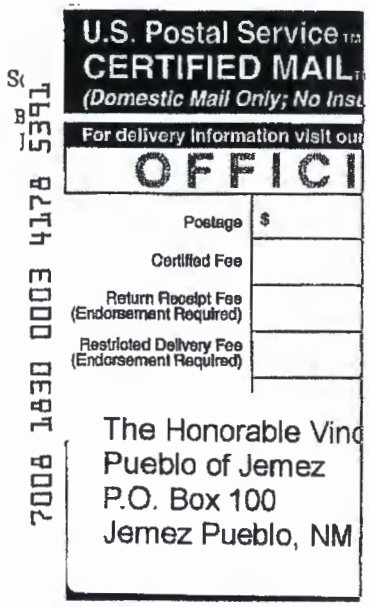

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 14, 2013

The Honorable Vincent Toya, Sr., Governor
Pueblo of Jemez
P.O. Box 100
Jemez Pueblo, NM 87024

RE: Preliminary Draft Ground Water Discharge Permit for the Los Alamos National Laboratory Radioactive Liquid Waste Treatment Facility, DP-1132

Dear Governor Toya:

The purpose of this letter is to inform you that the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) has been in the process of drafting a ground water Discharge Permit for the Los Alamos National Laboratory (LANL) Radioactive Liquid Waste Treatment Facility. This facility processes chemical and radioactive wastewater from various Technical Areas (TAs) at LANL and discharges treated wastewater to a tributary of Mortandad Canyon, to mechanical evaporators and is proposing to discharge to a solar evaporative tank system in the future. NMED has given this facility the permit number DP-1132. An application for a Ground Water Discharge Permit for this facility was first received by NMED on April 16, 1996 and LANL has submitted copious information concerning the facility over the intervening years. On February 16, 2012, LANL submitted a revised application for the Radioactive Liquid Waste Treatment Facility along with supplemental information on August 10, 2012.

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NMED's goal is to publish notice of the availability of a draft Discharge Permit and begin the formal public notice and comment period in August 2013. At that time, Jemez Pueblo will have the opportunity to provide formal comments, or request that a hearing be held on the draft Discharge Permit.

Should you have any questions or if Jemez Pueblo is interested in meeting with NMED staff to discuss the preliminary draft, please contact the technical reviewer for this site, Jennifer Fullam at (505) 827-2909 (jennifer.fullam@state.nm.us) or Robert George, Domestic Waste Team Leader for the Ground Water Quality Bureau at (505) 476-3648 (robert.george@state.nm.us).

Sincerely,

for Jerry Schoeppner

Jerry Schoeppner, Chief
Ground Water Quality Bureau

JS:RG/rjg

Encls: Preliminary Draft Discharge Permit DP-1132, LANL-RLWTF dated June 14, 2013

cc: Greg Kaufman, Director, Department of Resource Protection, P.O. Box 100, Jemez Pueblo, NM 87024
Jennifer Fullam, GWQB Tribal Contact (via email, without enclosure)
Mary Rose, NMED Tribal Liaison (without enclosure)

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

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www.nmenv.state.nm.us

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 14, 2013

The Honorable Terry Aguilar, Governor
Pueblo of San Ildefonso
Route 5, Box 315-A
Santa Fe, NM 87506

RE: Preliminary Draft Ground Water Discharge Permit for the Los Alamos National Laboratory Radioactive Liquid Waste Treatment Facility, DP-1132

Dear Governor Aguilar:

The purpose of this letter is to inform you that the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) has been in the process of drafting a ground water Discharge Permit for the Los Alamos National Laboratory (LANL) Radioactive Liquid Waste Treatment Facility. This facility processes chemical and radioactive wastewater from various Technical Areas (TAs) at LANL and discharges treated wastewater to a tributary of Mortandad Canyon, to mechanical evaporators and is proposing to discharge to a solar evaporative tank system in the future. NMED has given this facility the permit number DP-1132. An application for a Ground Water Discharge Permit for this facility was first received by NMED on April 16, 1996 and LANL has submitted copious information concerning the facility over the intervening years. On February 16, 2012, LANL submitted a revised application for the Radioactive Liquid Waste Treatment Facility along with supplemental information on August 10, 2012.

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Should you have any questions or if San Ildefonso Pueblo is interested in meeting with NMED staff to discuss the preliminary draft, please contact the technical reviewer for this site, Jennifer Fullam at (505) 827-2909 (jennifer.fullam@state.nm.us) or Robert George, Domestic Waste Team Leader for the Ground Water Quality Bureau at (505) 476-3648 (robert.george@state.nm.us).

Sincerely,

JR Ott for Jerry Schoeppner

Jerry Schoeppner, Chief
Ground Water Quality Bureau

JS:RG/rjg

Encls: Preliminary Draft Discharge Permit DP-1132, LANL-RLWTF dated June 14, 2013

cc: Steve Rydeen, Dept of Environmental and Cultural Preservation, Pueblo of San Ildefonso, Rt. 5 Box 315-A, Santa Fe, NM 87506
Jennifer Fullam, GWQB Tribal Contact (via email, without enclosure)
Mary Rose, NMED Tribal Liaison (without enclosure)

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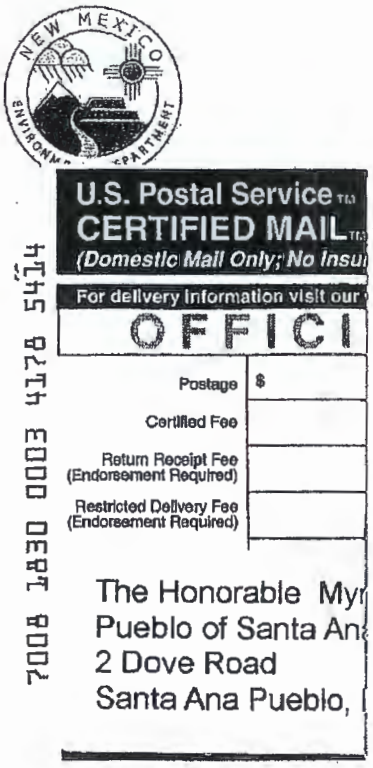

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 14, 2013

The Honorable Myron Armijo, Governor
Pueblo of Santa Ana
2 Dove Road
Santa Ana Pueblo, NM 87072

RE: Preliminary Draft Ground Water Discharge Permit for the Los Alamos National Laboratory Radioactive Liquid Waste Treatment Facility, DP-1132

Dear Governor Armijo:

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Sincerely,

for Jerry Schoeppner

Jerry Schoeppner, Chief
Ground Water Quality Bureau

JS:RG/rjg

Encls: Preliminary Draft Discharge Permit DP-1132, LANL-RLWTF dated June 14, 2013

cc: Alan Hatch, Director, Department of Natural Resources, Pueblo of Santa Ana, 2 Dove Road, Santa Ana NM 87004
Jennifer Fullam, GWQB Tribal Contact (via email, without enclosure)
Mary Rose, NMED Tribal Liaison (without enclosure)

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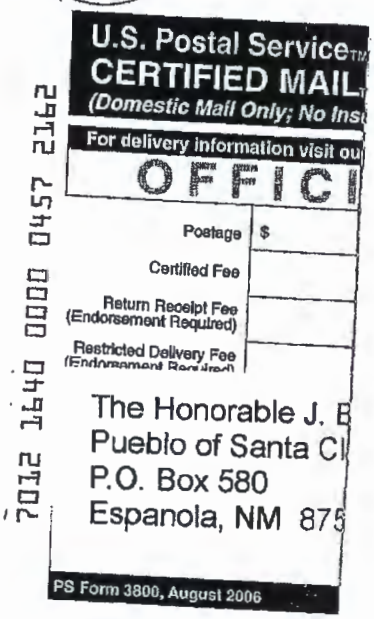

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June 14, 2013

The Honorable J. Bruce Tafoya, Governor
Pueblo of Santa Clara
P.O. Box 580
Espanola, NM 87532

RE: Preliminary Draft Ground Water Discharge Permit for the Los Alamos National Laboratory Radioactive Liquid Waste Treatment Facility, DP-1132

Dear Governor Tafoya:

The purpose of this letter is to inform you that the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) has been in the process of drafting a ground water Discharge Permit for the Los Alamos National Laboratory (LANL) Radioactive Liquid Waste Treatment Facility. This facility processes chemical and radioactive wastewater from various Technical Areas (TAs) at LANL and discharges treated wastewater to a tributary of Mortandad Canyon, to mechanical evaporators and is proposing to discharge to a solar evaporative tank system in the future. NMED has given this facility the permit number DP-1132. An application for a Ground Water Discharge Permit for this facility was first received by NMED on April 16, 1996 and LANL has submitted copious information concerning the facility over the intervening years. On February 16, 2012, LANL submitted a revised application for the Radioactive Liquid Waste Treatment Facility along with supplemental information on August 10, 2012.

With the information contained in LANL's submittals and a series of technical meetings with LANL, NMED has prepared a *preliminary* draft Discharge Permit (copy enclosed). In accordance with NMED's Tribal Communication and Collaboration Policy (2009), NMED is extending this invitation to the Pueblo to discuss any comments or concerns regarding this preliminary draft Discharge Permit prior to the formal public notification and comment period. It is NMED's hope that engaging the Pueblo now will allow for meaningful and constructive discussions, before the draft Discharge Permit is published for formal public comment.

NMED's goal is to publish notice of the availability of a draft Discharge Permit and begin the formal public notice and comment period in August 2013. At that time, Santa Clara Pueblo will have the opportunity to provide formal comments, or request that a hearing be held on the draft Discharge Permit.

Should you have any questions or if Santa Clara Pueblo is interested in meeting with NMED staff to discuss the preliminary draft, please contact the technical reviewer for this site, Jennifer Fullam at (505) 827-2909 (jennifer.fullam@state.nm.us) or Robert George, Domestic Waste Team Leader for the Ground Water Quality Bureau at (505) 476-3648 (robert.george@state.nm.us).

Sincerely,

for Jerry Schoeppner

Jerry Schoeppner, Chief
Ground Water Quality Bureau

JS:RG/rjg

Encls: Preliminary Draft Discharge Permit DP-1132, LANL-RLWTF dated June 14, 2013

cc: Joseph Chavarria, Director, Office of Environmental Affairs, Santa Clara Pueblo, P.O. Box 580, Espanola, NM 87532
Jennifer Fullam, GWQB Tribal Contact (via email, without enclosure)
Mary Rose, NMED Tribal Liaison (without enclosure)

DP-1132 Blue File

Fullam, Jennifer, NMENV

From: Fullam, Jennifer, NMENV
Sent: Tuesday, August 06, 2013 2:20 PM
To: 'Rachel Conn'
Subject: RE: Second Public Notice?

Rachel,

The second public notice for LANL's Radioactive Liquid Waste Treatment Facility (RLWTF) DP-1132 has not gone out for the second public notice yet. Amigos Bravos is on the interested parties list so you should be notified when it does. To my knowledge (based on the public meeting last week), the NPDES Permit for LANL is in the public comment period. As for Chevron, I do not oversee that facility so I am not sure what phase of the permitting process that particular permit is in. I believe either Anne Maurer or Joe Marcoline is the reviewer for Chevron.

Jennifer T. Fullam
Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
505.827.2909
jennifer.fullam@state.nm.us

From: rachel.conn@gmail.com [mailto:rachel.conn@gmail.com] **On Behalf Of** Rachel Conn
Sent: Tuesday, August 06, 2013 11:57 AM
To: Fullam, Jennifer, NMENV
Subject: Second Public Notice?

Jennifer,

Good to see you last week.

At the LANL NPDES public meeting you mentioned that you are about to come out with (or did come out with?) a second public notice for a DP related to LANL? Or were you talking about a DP for Chevron? I have been working on those two sites so much and have attended about 8 separate technical/public meetings in the last 10 days I can't seem to keep everything straight.

-Rachel

--
Rachel Conn
Amigos Bravos
575-758-3874
P.O. Box 238
Taos, NM 87571

DP-1132 Blue Folder

Fullam, Jennifer, NMENV

From: Beers, Bob <bbeers@lanl.gov>
Sent: Tuesday, August 13, 2013 10:34 AM
To: Pruett, Jennifer, NMENV
Cc: Fullam, Jennifer, NMENV; Saladen, Michael T; Del Signore, Chris; Wilburn, Dianne W; Turner, Gene E
Subject: Request for an NMED/DOE/LANS Mtg RE: DP-1132

Dear Ms. Pruett,

The U.S. Department of Energy and Los Alamos National Security would like to meet with you, at your convenience, to discuss Discharge Permit Application DP-1132 (TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF)).

I'd like to suggest the following possible meeting times: Tuesday, Wednesday, or Thursday, August 20, 21, or 22, at either 9:00 am or 3:00 pm. Of course, if other dates/times would be more convenient for you and your staff then please advise.

Sincerely,

Bob Beers
Environmental Compliance Programs Group (ENV-CP)
Los Alamos National Security, LLC
505-667-7969

DP-1132

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

Harold Runnels Buildi
1190 St. Francis Driv
P.O. Box 5469, Santa Fe, NM 8
Phone (505) 827-2918 Fax (50
www.nmenv.state.nm

CERTIFIED MAIL – RETURN RE

September 10, 2013

Mr. Gene Turner, DOE/AIP/POC
U.S. Department of Energy
Los Alamos Site Office, MS A316
528 35th Street
Los Alamos, NM 87545

Ms. Alison Dorries, LANS-EP-RS
Los Alamos National Security, LLC
P.O. Box 1663 MS K499
Los Alamos, NM 87545

RE: Draft Discharge Permit, DP-1132, Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility (RLWTF)

Dear Mr. Turner and Ms. Dorries:

Notice is hereby given pursuant to Subsection H of 20.6.2.3108 NMAC that the Ground Water Discharge Permit DP-1132, for Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility (RLWTF), has been proposed for approval (copy enclosed). The New Mexico Environment Department (NMED) will publish notice of the availability of the draft Discharge Permit in the near future and will forward a copy of the notice to you.

Prior to making a final ruling on the proposed Discharge Permit, NMED will allow 90 days from the date the public notice is published during which time written comments can be submitted and/or a public hearing requested. Comments and/or hearing requests may be submitted by any interested person, including the Discharge Permit applicant. Written comments and/or hearing requests must be submitted to the Ground Water Quality Bureau at the address above and shall set forth the reasons why a hearing is requested. A hearing will be held only if hearing requests are received from the public and/or the Discharge Permit applicant during the 90-day comment period and NMED determines there is substantial public interest in the proposed Discharge Permit. Hearings are presided over by the NMED Secretary or a hearing officer appointed by the Secretary.

Please review the enclosed draft Discharge Permit carefully for accuracy and completeness, and to make sure you understand what it requires. Please be aware that this Discharge Permit may contain conditions that require the permittee to implement operational, monitoring or closure actions by a specified deadline.

A copy of the Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC, is available at http://www.nmcpr.state.nm.us/nmac/_title20/T20C006.htm.

If you have any comments, questions, or concerns, please contact me at (505) 827-2909. If written comments and/or a written request for hearing are not received during the public comment period, the draft Discharge Permit will become final. Thank you for your cooperation during the review process.

Sincerely,

Jennifer Fullam
Environmental Scientist

enc: Draft Discharge Permit, DP-1132

Cc: Bob Beers, ENV-RCRA, Los Alamos National Security LLC, P.O. Box 1663, MS K490, Los Alamos, New Mexico 87545 (w/ enclosure)
John Kieling, Bureau Chief, New Mexico Environment Department, Hazardous Waste Bureau (w/ enclosure)
Charles de Saillan, General Counsel, New Mexico Environment Department (w/ enclosure)
Joni Arends, Concerned Citizens for Nuclear Safety, 107 Cienega Street, Santa Fe, NM 87506 (w/ enclosure)
Jon Block, New Mexico Environmental Law Center, 1405 Luisa Street, Suite 5, Santa Fe, NM 87505 (w/ enclosures)
Governor J. Leroy Arquero, Pueblo of Cochiti, P.O. Box 70, Cochiti Pueblo, NM 87072 (w/enclosure)
Jacob Pecos, Director, Pueblo of Cochiti, P.O. Box 70, Cochiti Pueblo, NM 87072 (w/enclosure)
Governor Terry Aguilar, Pueblo of San Ildefonso, Route 5 Box 315-A, Santa Fe, NM 87506 (w/enclosure)
Steve Rydeen, Director, Pueblo of San Ildefonso Department of Environmental and Cultural Preservation, Rt. 5 Box 315-A, Santa Fe, NM 87506 (w/enclosure)
Governor J. Bruce Tafoya, Pueblo of Santa Clara, P.O. Box 580, Espanola, NM 87532 (w/enclosure)

Joseph Chavarria, Director, Santa Clara Pueblo Office of Environmental Affairs, P.O. Box 580, Espanola, NM 87532 (w/enclosure)
Governor Vincent A. Toya Sr., Pueblo of Jemez, P.O. Box 100, Jemez Pueblo, NM 87024 (w/enclosure)
Greg Kaufman, Director, Jemez Pueblo Department of Natural Resources, P.O. Box 398, Jemez Pueblo, NM 87024 (w/enclosure)

DRAFT GROUND WATER DISCHARGE PERMIT (DP-1132)
RADIOACTIVE LIQUID WASTE TREATMENT FACILITY
LOS ALAMOS NATIONAL LABORATORY

Table of Contents

I. ACRONYMS:

The following acronyms and abbreviations may be used throughout this Discharge Permit:

BOD_5-biochemical oxygen demand (5-day)
CAS-Chemical Abstract Service
CFR-Code of Federal Regulations
Cl- chloride
CQCAP- Construction Quality Control Assurance Plan
DOE-United States Department of Energy
EPA- United States Environmental Protection Agency
gpd-gallons per day
LANL-Los Alamos National Laboratory
LANS- Los Alamos National Security, LLC
MES-Mechanical Evaporator System
Mg/L-milligrams per liter (or parts per million)
NMAC-New Mexico Administrative Code
NMSA-New Mexico Statues Annotated
NO_3-N-nitrate-nitrogen
NPDES-National Pollutant Discharge Elimination System
PCBs-Polychlorinated Biphenyls
QA/QC-Quality Assurance/Quality Control
RLW-Low-level radioactive waste water
RLWTF-Radioactive Liquid Waste Treatment Facility
SET-Solar Evaporative Tank System
TA-Technical Area
TDS-total dissolved solids
TKN-total Kjeldahl nitrogen
TRU-Transuranic waste water
TSS-total suspended solids
WQA-Water Quality Act
WQCC-Water Quality Control Commission

II. DEFINITIONS:

The following is a list of definitions as they pertain specifically to this Discharge Permit:

A. **Average daily flow-** the rate determined by dividing the total monthly volume by the number of days for the reporting period.

B. **Active portion-** the portion of the Facility where treatment, storage or disposal of waste water occurs or has occurred in the past, including those portions of the Facility which are not in use and have not been closed in accordance with the conditions in this Discharge Permit.

C. **Closure-** to permanently discontinue the use of a unit, system, or component of the Facility (partial) or the entire Facility (final).

D. **Construction Quality Control Assurance Plan-** a written plan of activities necessary to ensure that construction and installation meet design criteria. A CQCAP includes practices and procedures for inspections, testing and evaluations of material and workmanship necessary to verify the quality of the constructed unit or system, and corrective actions to be implemented when necessary.

E. **Discharge-** the intentional or unintentional release of an effluent or leachate which may move directly or indirectly into ground water or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property.

F. **Effluent-** a liquid waste product resulting from the treatment or partial treatment of an influent waste stream intended to be discharged.

G. **Exfiltration-** the uncontrolled passage or penetration of waste water or sludge from a structural component of a unit or system through defective pipes, pipe joints, connections, cracks, structural failure, or material incompatibility and enters the surrounding environment.

H. **Flow meter-** a quantitative instrument or device that measures, displays, and records the flow of a fluid in a conduit or an open channel.

I. **Freeboard**-the vertical distance between the crest of the embankment and the carrying capacity level of an open tank, impoundment, or other open unit that contains a liquid or semi-liquid

J. **Impoundment-** a unit which is a natural topographic depression, man-made excavation, or diked area primarily constructed of earthen materials, specifically designed to hold, evaporate or store, an accumulation of liquid or semi-liquid waste.

K. **Industrial waste water-** the liquid wastes from industrial processes or non-household waste water which is generated through activity not solely derived from human excreta, residential sinks, showers, baths, clothes and dish-washing machines; or exceeds the characteristics of a domestic waste as defined in 20.7.3.7.D(6) NMAC; 300 mg/L BOD, 300 mg/L TSS, 80 mg/L total nitrogen or 105 mg/L fats, oils and grease.

L. **Infiltration-** the uncontrolled passage or penetration of liquids or semi-liquids into a unit or system through defective pipes, pipe joints or connections, or manhole walls. cracks, structural failure, or material incompatibility.

M. **Influent collection system-** the infrastructure and associated components (e.g. sumps, pumps) used for the collection and conveyance of waste water from the originator to the Facility's treatment systems.

N. **Influent-** untreated water, waste water or other liquid or semi-liquid flowing into a

reservoir, basin, or treatment plant.

O. **Leak detection system-** a system capable of detecting the failure of either the primary or secondary containment structure or the presence or release of an accumulated liquid in the secondary containment structure. The system must employ operational controls or consist of an interstitial monitoring device designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release into the secondary containment structure.

P. **Maintenance and repair-** all actions associated with keeping a system or component functioning as designed or restoring a system or component to its intended function. Maintenance and repair does not include alterations to a unit or system which change the intended function or design of the unit or alter the treatment process.

Q. **Maximum daily discharge-** the total daily volume of waste water (expressed in gallons per day) authorized for discharge by a discharge permit.

R. **Open unit or system-** a unit or system designed to store, treat or dispose of liquids, semi-liquids or solids to which the uppermost portion of the unit is exposed.

S. **Outfall-** the point where a treated waste water discharges to waters of the United States, or a tributary to waters of the United States.

T. **Peak instantaneous flow-** the highest design flow rate for a unit or system, expressed in gallons per minute or cubic feet per second.

U. **Record drawings-** the official record of the actual as-built conditions of the completed construction, to be held as the permanent record of each unit and system, which shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978).

V. **Secondary containment-** a constructed unit, independent of the (primary) unit or system designed to convey, store, treat, or dispose of liquids or semi-liquids, that is designed, constructed and operated to prevent any migration of waste streams or accumulated liquid out of the unit or system to the soil, ground water, or surface water at any time. Secondary containment must be:
   - designed, constructed and maintained to surround the primary unit completely;
   - free of cracks, gaps, or fissures;
   - constructed of, or lined with, materials that are compatible with the waste streams to be in contact with the unit or system;
   - placed on a foundation or base capable of withstanding pressure gradients, settling or uplift which may cause failure of the unit or system;
   - equipped with a leak detection system that is designed and operated so that it will detect the failure of the primary containment structure;
   - sloped or designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation within a 24 hour time period; and
   - capable of detecting and collecting releases and accumulated liquids until the collected material can be removed.

W. **Settled solids measurement device-** an apparatus for testing settled solids in a liquid suspension for settling rate, compaction of the settled solids, and the resulting clarity of the liquid.

X. **Sludge or settled solids-** a solid or semisolid residue that results from the treatment or precipitation of solids from a waste stream, or the accumulation of natural sediment and debris settling in an open unit or system.

Y. **Synthetic Liner-** a continuous layer of man-made materials, beneath or on the sides of a unit or system, which restricts the downward or lateral escape of effluent or leachate.

Z. **Tank-** a stationary device, designed to contain an accumulation of waste water which is constructed primarily of non-earthen materials (e.g., concrete, steel, plastic) which provide structural support. Tanks can be further identified as either an **On ground tank** meaning a tank that is situated in such a way that the bottom of the tank is on the same level as the adjacent surrounding surface allowing for visual inspection of the vertical walls but not the external tank bottom or an **In-ground tank** meaning a tank constructed or installed so that a portion of the tank wall is situated to any degree within the ground, thereby preventing visual inspection of that portion of the external surface area.

AA. **Total Nitrogen-** The cumulative sum of total Kjeldahl nitrogen (TKN) and nitrate-nitrogen (NO_3-N).

BB. **Total Polychlorinated Biphenyls (PCBs) -** the sum of all congeners, sum of all homologs or sum of all aroclors. The total PCB concentration as achieved by summation of the individual and co-eluted compounds.

CC. **Toxic Pollutant-** a water contaminant or combination of water contaminants in concentration(s) which, upon exposure, ingestion, or assimilation either directly from the environment or indirectly by ingestion through food chains, will unreasonably threaten to injure human health, or the health of animals or plants which are commonly hatched, bred, cultivated or protected for use by man for food or economic benefit; as used in this definition injuries to health include death, histopathologic change, clinical symptoms of disease, behavioral abnormalities, genetic mutation, physiological malfunctions or physical deformations in such organisms or their offspring; in order to be considered a toxic pollutant a contaminant must be one or a combination of the potential toxic pollutants identified in the list in 20.6.2.7.WW NMAC and be at a concentration shown by scientific information currently available to the public to have potential for causing one or more of the effects listed above; any water contaminant or combination of the water contaminants identified in the list in 20.6.2.7.WW NMAC creating a lifetime risk of more than one cancer per 100,000 exposed persons is a toxic pollutant.

DD. **Treatment-** any method, technique or process that, through chemical biological and mechanical processes, modify waste water characteristics with the objective to neutralize and reduce or remove organic and inorganic water contaminants which if released to the environment could potentially impact ground water quality or pose a threat to human health.

EE. **Unauthorized Release or spill-** the intentional or unintentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil or other water contaminant not authorized in this Discharge Permit.

FF. **Water Contaminant** - any substance that could alter if discharged or spilled the physical, chemical, biological or radiological qualities of water; "water contaminant" does not mean source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954.

III. Introduction

The New Mexico Environment Department (NMED) issues this Discharge Permit (Discharge Permit), DP-1132, jointly and severally liable to Los Alamos National Security, LLC (LANS) and the United States Department of Energy (DOE) (collectively the Permittees) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978, §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge, and potential release, of water contaminants from Los Alamos National Laboratory's (LANL's) Radioactive Liquid Waste Treatment Facility (Facility) so as to protect public health, ground water for present and potential future use as a domestic water supply or an agricultural water supply, and those segments of surface water gaining from ground water inflow. In issuing this Discharge Permit, NMED has determined that the requirements of 20.6.2.3109.C NMAC have been or will be met.

The application (i.e., discharge plan) consists of the materials submitted by the Permittees on August 19, 1996, an updated application submitted to NMED on February 16, 2012, an amendment to the application submitted to NMED on August 10, 2012, and materials contained in the administrative record prior to issuance of this Discharge Permit.

The Facility is located within Los Alamos National Laboratory, approximately 1.5 miles south of Los Alamos, New Mexico, in Sections 16, 17, 20, 21 and 22, Township 19N, Range 06E, Los Alamos County. Ground water most likely to be affected ranges from depths of approximately one foot to 1,306 feet and has a total dissolved solids concentration ranging from approximately 162 to 255 milligrams per liter.

The Facility, as it pertains to conditions within this Discharge Permit (DP-1132), for the treatment and discharge of up to 40,000 gallons per day (gpd), is specifically described in section V(D) of this Discharge Permit and includes the influent collection system, the low-level radioactive treatment system, the transuranic waste treatment system, the secondary treatment system, the Mechanical Evaporator System (MES), the Solar Evaporative Tank System (SET) and an outfall (Outfall 051) also regulated by a National Pollutant Discharge Elimination System (NPDES) permit issued by the United States Environmental Protection Agency (EPA) pursuant to the federal Clean Water Act Section 402, 33 U.S.C § 1342. The discharge may contain water contaminants with concentrations above the standards of 20.6.2.3103 NMAC and may contain toxic pollutants as defined in 20.6.2.7.WW NMAC.

Pursuant to 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or that the standards of 20.6.2.3103 NMAC are being or may be violated or a toxic pollutant as defined in 20.6.2.7.WW NMAC is present. Such modifications may include, without limitation, the implementation of structural controls, treatment processes, monitoring criteria, operational processes, changes in discharge

activities and the abatement of water pollution and remediation of ground water quality.

Issuance of this Discharge Permit does not relieve the Permittees of the responsibility to comply with the WQA, WQCC Regulations, and all other applicable federal, state, and local laws and regulations.

IV. Findings

In issuing this Discharge Permit, NMED finds:

A. The Permittees are discharging effluent or leachate from the Facility so that such effluent or leachate may move directly or indirectly into ground water within the meaning of 20.6.2.3104 NMAC.

B. The Permittees are discharging effluent or leachate from the Facility so that such effluent or leachate may move into ground water of the State of New Mexico which has an existing concentration of 10,000 mg/L or less of total dissolved solids (TDS) within the meaning of 20.6.2.3101.A NMAC.

C. The discharge from the Facility is within or into a place of withdrawal of ground water for present or reasonably foreseeable future use within the meaning of the WQA, NMSA 1978, § 74-6-5.E.3, and the WQCC Regulations at 20.6.2.3103 NMAC

D. The discharge from the Facility to Outfall 051 is subject to the exemption set forth in 20.6.2.3105.F NMAC, to the extent that effluent limitations (not including monitoring requirements) are imposed, unless the NMED Secretary determines that a hazard to public health may result.

V. Authorization to Discharge

A. Pursuant to 20.6.2.3104 NMAC, it is the responsibility of the Permittees to ensure that discharges authorized by this Discharge Permit are consistent with the terms and conditions herein.

B. The Permittees are authorized to receive and treat up to 40,000 gpd of low-level and transuranic radioactive industrial waste water using a series of treatment processes as described in Section V(D) of this Discharge Permit in accordance with the Conditions set forth in Section VI of this Discharge Permit.

C. The Permittees are authorized to discharge up to 40,000 gpd of treated waste water, in accordance with the Conditions set forth in Section VI of this Discharge Permit. Discharges shall be to either the Mechanical Evaporator System (MES), the synthetically lined Solar Evaporative Tank system (SET), or through an outfall (identified as Outfall 051) also regulated by a National Pollutant Discharge Elimination System (NPDES) permit (Permit No. NM0028355) issued by the United States Environmental Protection Agency [20.6.2.3104 NMAC, 20.6.2.3106.C NMAC, 20.6.2.3109.C NMAC].

D. The Permittees are authorized to use the following defined systems with their

associated units for the process of treating and disposing of waste water:

The Influent Collection System is defined herein as all primary and secondary containment lines that convey transuranic or low-level radioactive waste water from Technical Areas TA-03, TA-35, TA-48, TA-50, TA-55, and TA-59 to the Transuranic Waste (TRU) treatment system and the Low-level Radioactive waste water (RLW) treatment system at TA-50. It includes the conveyance lines beginning at the point the pipe emerges from the building or other structure that comprises the site of generation, and extending to the vault immediately upstream of the influent tank at TA-50. It also includes the conveyance of low-level radioactive waste water to the RLW treatment system by truck.

The Low-level Radioactive Waste water (RLW) Treatment System is defined herein as the low-level radioactive waste water influent storage tanks, the associated treatment units (filters, feed tanks, ion exchange columns, reverse osmosis units, etc.) effluent storage tanks, and other associated low-level radioactive waste water components at TA-50. The process by which the individual treatment units within the low-level radioactive treatment system are utilized may, for attaining compliance with the effluent limits set forth in this Discharge Permit, be altered, by-passed, replaced, or removed in accordance with the Conditions set forth in this Discharge Permit. The physical location of each unit and system that conveys, stores, or treats RLW waste streams coming into the low-level radioactive waste water treatment system is within TA-50.

The Transuranic Waste (TRU) Treatment System is defined herein as the influent storage tanks for each form of TRU (acidic and caustic) wastestreams, the associated neutralization unit, pressure filters, the final processing tanks, and other associated TRU wastestream conveyance, storage and treatment components at TA-50. All wastestreams associated with TRU shall be disposed of at an off-site facility permitted to receive TRU waste.

The Secondary Treatment System is defined herein as the receiving tanks for reverse osmosis concentrate waste water generated through the RLW Treatment System and treated effluent generated from the TRU Treatment System, the treatment process units for secondary reverse osmosis, the rotary vacuum filter, and other associated post-treatment conveyance, storage and treatment components at TA-50 designed to reduce wastestream volumes.

The Mechanical Evaporator System (MES) is defined herein as the units in which treated RLW effluent is disposed of through gas generated mechanical evaporation.

The Solar Evaporative Tank System (SET) is defined herein as the single concrete tank unit at TA-52 that receives treated effluent from the RLW, and the conveyance line from TA-50. The SET consists of two cells separated by a single partitioned wall; each cell has a containerized volume of approximately 380,000 gallons. The SET is an unsealed subgrade concrete structure with a single double-lined synthetic liner, and a leak detection system within the synthetic liner.

Outfall 051 is defined herein as the outfall through which treated waste water from the Facility is discharged to Effluent Canyon, which is a tributary to Mortandad Canyon.

[20.6.2.3104 NMAC, 20.6.2.3106.C NMAC, 20.6.2.3109.C NMAC].

VI. Conditions

NMED issues this Discharge Permit for the discharge of water contaminants subject to the following conditions:

A. Operational Plan

1. **ANNUAL UPDATE**-The Permittees shall submit to NMED and shall post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) an updated Facility Process Description annually by February 1 of each year. The annual Facility Process Description shall include the following:
   a. A schematic of all major structures associated with the Facility, including all influent lines, buildings, exterior tanks, effluent lines, outfalls and discharge locations identified in this Discharge Permit.
   b. A comprehensive flow chart demonstrating the most current processes in operation for the collection, treatment and disposal of waste water for the Facility. The flow chart shall indicate any processes which have been by-passed, decommissioned, or are no longer used for the collection, treatment or final disposal of the waste water.
   c. An associated narrative describing each of the systems and treatment units outlined in the flow chart. This narrative shall include the collection system, primary treatment units, secondary treatment units and any systems used in the disposition of any associated waste streams at the Facility. For each unit or system, the narrative shall include:
      1) the identification of the unit or system;
      2) the physical location;
      3) intended function;
      4) physical description;
      5) operational capacity, if applicable;
      6) the date the unit or system was placed in operation;
      7) origin of waste streams that the unit or system receives;
      8) the unit or system(s) to which it discharges to; and
      9) a summary of maintenance or repairs made during the reporting period.

   [20.6.2.3106.C NMAC]

2. **NOTIFICATION OF CHANGES**-The Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) a written notification of any changes in the Facility's collection, treatment or disposal systems which are beyond the scope of maintenance and repair. The notification shall be submitted no less than thirty days prior to the date proposed for implementation. The notification shall include, at a minimum, the following items listed herein and others which may be determined to be required by

NMED:

a. date process change is planned to be implemented;
b. narrative of process change;
c. justification for making the process change;
d. units or components being removed from the process;
e. units or components being incorporated into the process;
f. operational controls implemented for the change in processes;
g. intended temporal scope of process change (e.g., permanent or limited duration); and
h. any additional information required by NMED.

[20.6.2.3106.C NMAC]

3. **SUBMITTAL OF PLANS AND SPECIFICATIONS**-The Permittees shall not implement any expansion, process modification, or alteration of a system or unit that changes the intended function, design or capacity for any of the system, units or components of the Facility's collection, treatment or disposal systems without prior written approval by NMED. Prior to implementing any such changes, the Permittees shall submit to NMED for approval a written proposal, including plans and specifications that describes in detail the proposed changes in the processes or components of the Facility's collection, treatment, or disposal systems. The proposal shall be delivered by certified mail or hand delivery. The Permittees shall not place any waste in a new or changed unit or system unless the Permittees receive prior written approval from NMED. NMED will provide such approval only if it finds that the Permittees have submitted the required elements listed herein in sufficient detail to demonstrate that the unit or system is designed and constructed to minimize the possibility of an unauthorized release of water contaminants which could directly or indirectly impact ground water quality or pose a threat to human health.

The proposal shall include, at a minimum, the following information:

a. identification of all applicable units and a description of how they will be constructed;
b. a map, to scale, of the Facility, with the location of the proposed unit relative to other identified structures or systems referenced in this Discharge Permit;
c. specifications for all new unit and system components (e.g., lift stations, valves, transfer lines, process units and associated details); whether new, retrofitted, or proposed for abandonment. All new system components for the collection, treatment or disposal of waste water at the Facility shall be designed to meet the projected needs of the Facility;
d. plans and specifications for proposed flow meters that will be used to measure the volume of waste water discharged to or from the unit or system;
e. demonstration that the proposed unit or system is adequately designed for

its intended function;

f. compatibility of the unit or system's constructed material with the proposed waste stream, including, if applicable, information regarding corrosion protection to ensure that it will maintain its structural integrity and not collapse, rupture or fail;
g. certification that the foundation, structural support, seams, connections, and pressure controls, if applicable, are adequately designed and the unit or system has sufficient structural strength to convey, store, treat or dispose of the intended waste stream;
h. certification for all plans and specifications attesting to the capacity of the unit or system including, without limitation, waste water flow data derived using both average daily flow and peak instantaneous flow. Computations should be presented in a tabular form showing depths and velocities at minimum, design average, and peak instantaneous flow for all new system components;
i. water balance calculations for the capacity and evaporative potential for units which are subject to exposure to the environment and to which precipitation events may impact total capacity of the unit. The unit shall be designed such that two feet of freeboard or an NMED approved alternative is maintained at all times;
j. design specifications for secondary containment for all units or systems intended to convey, store, treat, or dispose of liquid or semi-liquid waste streams;
k. design specifications for leak detection systems associated with systems designed to convey, store, treat, or dispose of liquid or semi-liquid waste streams, which demonstrate the capability of detecting the failure of either primary or secondary containment or the presence of any release of any accumulated liquid in the secondary containment system within 24 hours of initial release;
l. proposed leakage tests shall be specified for all new unit or system components with direct contact to treated or untreated waste water. This may include appropriate water or low pressure air testing. The use of a camera or other visual methods used for documentation of the inspection, prior to placing the unit or system in service is recommended;
m. design specifications for all units or systems designed to convey, store, treat, or dispose of liquid or semi-liquid waste streams, which demonstrate the ability to remove liquids and semi-liquids from the area of containment within 24 hours of a release; and
n. a Construction Quality Control Assurance Plan (CQCAP) assuring that the proposed unit or system will meet or exceed all design criteria and specifications.

Plans and specifications shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978). The Permittees' proposal proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at

http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.1202 NMAC, 20.6.2.3106.C NMAC, 20.6.2.3109.C NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]

4. **CONSTRUCTION REPORT**-Within 90 days following completion of construction for a unit or system that requires NMED approval, the Permittees shall prepare a final construction report that contains the following:
   a. A complete copy of record drawings, specifications, final design calculations, addenda, and change orders, as applicable;
   b. Description of the procedures and results from all inspection and tests that occur before, during, and after construction to ensure that the construction materials and the installed unit or system components meet the design specifications; and
   c. A complete copy of the Operation and Maintenance Manual specific to the unit or system being constructed.

   The Permittees' proposal final construction report along shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

   [20.6.2.1202 NMAC, 20.6.2.3109.C NMAC, 20.6.2.3106.C NMAC, 20.6.2.3107.C NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]

5. **RESTRICTING ENTRY**-The Permittees shall, at all times, prevent the unauthorized entry of persons, wildlife, or livestock into the active portions of this Facility so that physical contact with the waste streams, structures and equipment is restricted. Means to control unauthorized access shall include an artificial or natural barrier which completely surrounds the active portions of the Facility and a means to control entry, at all times, through gates or other entrances to the active portions of the Facility (e.g., locks, surveillance system).

   [20.6.2.3109.C NMAC]

6. **SIGNS**-The Permittees shall post and maintain signs at each entrance to the active portions of the Facility and at other locations, in sufficient numbers to be seen from any approach to the active portions of the Facility stating that Unauthorized Personnel is prohibited. All signs shall be posted in English and Spanish and be legible from a distance of at least 25 feet.

   [20.6.2.3109.C NMAC]

7. **VERIFICATION OF SECONDARY CONTAINMENT**-Within 180 days following the effective date of this Discharge Permit (by DATE), the Permittees shall submit to NMED and post on LANL's Electronic Public

Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) verification demonstrating all units and systems intended to convey, store, treat or dispose of liquid or semi-liquid waste streams meet the requirements of secondary containment as defined in this Discharge Permit. Verification must also include certification of an operational leak detection system for the unit or system.

[20.6.2.3106.C NMAC, 20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

8. **WATER TIGHTNESS TESTING-**Within 540 days following the effective date of this Discharge Permit (by DATE), and every 540 days thereafter, the Permittees shall demonstrate that each unit and system intended to convey, store, treat or dispose of a liquid or semi-liquid waste stream without secondary containment is not leaking and is otherwise fit for use. To make the demonstration, the Permittees shall conduct both a visual and a quantifiable test.

   The visual assessment shall be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. If necessary, the Permittees shall remove the stored waste from the unit or system to allow the condition of internal surfaces to be assessed.

   The quantifiable assessment for units and systems that are used to store, treat or dispose of liquid or semi-liquid waste streams shall consist of obtaining tank level measurements over at least a 36 hour period during which no liquid or semi-liquid is added to or removed from the unit. The exfiltration or infiltration rate shall not exceed 0.07 gallons per hour per thousand gallons of capacity for the unit or system.

   The quantifiable assessment for units and systems designed to convey a liquid or semi-liquid waste stream shall be determined through passive testing for leakage exfiltration and infiltration. The infiltration or exfiltration rate shall not exceed 50 gallons per mile per consecutive 24 hour period for any section of the system. Infiltration and exfiltration tests for conveyance lines shall be conducted as follows:

   a. Prior to testing for infiltration, the conveyance lines shall be isolated and evacuated so that maximum infiltration conditions exist at the time of testing. The Permittees shall measure and document the volume of infiltration entering each section of the conveyance line being tested. The cumulative results for the entire collection system shall not be a satisfactory method for gauging infiltration compliance. Each sewer section between manholes shall not exceed the maximum infiltration rate.

   b. Prior to testing for exfiltration, the conveyance lines shall be isolated and filled with water to a level that produces, at minimum, two feet of hydrologic head above the uppermost point of the section being tested.

The cumulative results for the entire collection system shall not be a satisfactory method for gauging exfiltration compliance. Each sewer section between manholes shall not exceed the maximum exfiltration rate.

Demonstration of water tightness shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978). The Permittees shall submit to NMED, and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated), the procedures and findings of the evaluation by February 1 of each year immediately following the date when the water tightness test was performed. In the event that inspection reveals that the criteria for leakage is greater than permissible in this Discharge Permit, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

[20.6.2.3106.C NMAC, 20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

9. **SETTLED SOLIDS**-The Permittees shall inspect and measure the thickness of the settled solids, on an annual basis for all open units and systems that are designed to store or dispose of a liquid or semi-liquid through evaporation. The Permittees shall measure the thickness of settled solids in accordance with the following procedure:
   a. The total surface area of the unit or system shall be divided into nine equally sized areas.
   b. A settled solids measurement device shall be utilized to obtain one settled solids thickness measurement (to the nearest half-foot) per area.
   c. The individual settled solids depths for each of the nine measurement areas shall be averaged.

   The Permittees shall record all measurements in an inspection log which must include, at a minimum, the following:
   a. date and time of the inspection;
   b. the name of the inspector;
   c. identification of the unit;
   d. the location of the unit;
   e. the estimated total volume of liquid or semi-liquid in the unit or system at the time of inspection;
   f. the total depth capacity of the unit or system (with respect to freeboard requirements);
   g. the method used to determine the settled solids depth; and
   h. The average measured depth of settled solids in the unit.

   The Permittees shall not allow settled solids to accumulate in any open unit or system used to convey, store, treat, or dispose of liquid or semi-liquid at a volume greater than one foot. In the event that settled solids volumes exceed the volumes defined in this Discharge Permit or upon implementation of any settled solids removal activity, the Permittees shall implement the contingency

plan set forth in this Discharge Permit.

The Permittees shall keep the inspection log on site for a minimum of five years from the date of inspection. The Permittees shall submit a summary report of all settled solids depth results to NMED by February 1 of each year. The Permittees' summary report shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC]

10. **FACILITY INSPECTIONS**-The Permittees shall inspect the Facility for malfunctions, deterioration, operator errors and discharges which may be causing, or may lead to, an unauthorized release to the environment or pose a threat to human health.

    The inspection shall be performed at the frequency prescribed for each unit or system in this Discharge Permit or based on the rate of deterioration of the equipment and the probability of an environmental or human health incident for those units and systems not specifically described herein.

    a. The Permittees shall inspect and test all leak detection systems to ensure performance within manufacturer specifications on a monthly basis.
    b. The Permittees shall inspect all externally observable portions of units and systems conveying, treating or storing liquids, semi-liquids, or solids including any secondary containment areas on a weekly basis. The Permittees shall examine for evidence of deterioration or failure of the units and systems. The visual portions of all synthetic liners used to store or dispose of liquids or semi-liquids shall be inspected for uniformity, damage, imperfections, punctures, blisters, and evidence of seam or joint failure.
    c. The Permittees shall inspect, on a weekly basis through indirect observation, all units and systems conveying, processing, or storing liquids, semi-liquids, or solids that are inaccessible or otherwise cannot be directly observed. The Permittees shall identify the unit or system and note any potential findings which may suggest a breach or failure of containment.
    d. The Permittees shall inspect all open units and systems which contain a liquid or semi-liquid, on each day during which the Facility is in operation, to ensure capacity of the unit or system is not exceeded.

    The Permittees shall record all inspections in an inspection log which shall be kept on site for a minimum of five years from the date of inspection. At a minimum, these inspections shall include the date and time of the inspection, the name of the inspector, identification of the unit, the location of the unit, the total volume of liquid or semi-liquid in the unit or system at the time of inspection, a notation of the observations made, and the date and nature of any

maintenance and repairs made.

In the event that inspection findings reveal significant damage likely to affect the structural integrity of a unit or system or any of its associated components, or its ability to function as designed, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

[20.6.2.3107.A NMAC]

11. **MAINTENANCE and REPAIR-**The Permittees shall maintain the function and structural integrity of the Facility at all times except during maintenance or repair. All routine maintenance and repair actions shall be noted in a maintenance log which shall be kept on site for a minimum of five years. Maintenance and repair of a unit or system required due to potential malfunction which could lead to an unauthorized discharge to the environment or pose a threat to human health shall be corrected as soon as possible, but no later than 30 days from the date of the observed malfunction. For good cause, NMED may approve a longer period. The Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppic/service (or as updated) a report describing the maintenance and repair activities performed on the Facility as part of the quarterly monitoring reports.

    In the event that routine maintenance and repair reveal significant damage likely to affect the structural integrity of a unit or system or any of its associated components, or its ability to function as designed, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

    [20.6.2.3107.A NMAC]

12. **FREEBOARD-**The Permittees shall maintain two feet of freeboard in all open units and systems that contain a liquid or semi-liquid. If the Permittees determine that two feet of freeboard cannot be maintained, the Permittees shall submit to NMED for approval a written request for alternate freeboard requirements. In the request the Permittees shall, at a minimum, propose freeboard levels that will be maintained and propose demonstrated spill prevention controls and overfill prevention controls that include the prevention of overtopping by wave, wind or precipitation events. The Permittees' proposal proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

    In the event that established freeboard is not maintained, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

    [20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

13. **EFFLUENT LIMITS: OUTFALL 051**-The Permittees shall not discharge treated waste water to Outfall 051 that exceeds the following limits (or is outside the following pH range):

a. All water contaminants and their associated limits as listed in Table 1.

Table 1. Effluent Quality Limits for Discharges to Outfall 051

Inorganic Chemicals:	CAS#	mg/L
Aluminum (dissolved)	7429-90-5	5.0
Arsenic (dissolved)	7440-38-2	0.1
Barium (dissolved)	7440-39-3	1.0
Boron (dissolved)	7440-42-8	0.75
Cadmium (dissolved)	7440-43-9	0.01
Chromium (dissolved)	7440-47-3	0.05
Chloride (dissolved)	7647-14-5	250.0
Cobalt (dissolved)	7440-48-4	0.05
Copper (dissolved)	7440-50-8	1.0
Cyanide (dissolved)	57-12-5	0.2
Fluoride(dissolved)	16984-48-8	1.6
Iron (dissolved)	7439-89-6	1.0
Lead (dissolved)	7439-92-1	0.05
Manganese (dissolved)	7439-96-5	0.2
Molybdenum (dissolved)	7439-98-7	1.0
Mercury (total)	92786-62-4	0.002
Nickel (dissolved)	7440-02-0	0.2
Perchlorate (total)	14797-73-0	0.011
pH (total)		6 – 9
Selenium (dissolved)	7782-49-2	0.05
Silver (dissolved)	7440-22-4	0.05
Sulfate (dissolved)		600.0
Total Dissolved Solids (dissolved)		1000.0
Uranium (dissolved)	7440-61-1	0.03
Zinc (dissolved)	9029-97-4	10.0

Organic Chemicals:	CAS#	mg/L
Benzene (total)	71-43-2	0.01
Benzo (a) pyrene (total)	50-32-8	0.0007
Carbon tetrachloride (total)	56-23-5	0.01
Chloroform (total)	67-66-3	0.1
1,1-Dichloroethane (total)	75-34-3	0.025
1,2-Dichloroethane (total)	107-06-2	0.01
1-1-Dichloroethylene (total)	75-35-4	0.005
1,1,2,2-Tetrachloroethylene (PCE) (total)	127-18-4	0.02
1,1,2-Trichloroethylene (TCE) (total)	86-42-0	0.1
Ethylbenzene (total)	100-41-4	0.75
Ethylene dibromide (total)	1106-93-4	0.0001
Naphthalene plus monomethylnaphthalenes (total)	91-20-3, 90-12-0, 91-57-6	0.03
Methylene chloride (total)	75-09-2	0.1
Total PCBs (total)		0.001
Phenols (total)	108-95-2	0.005
Toluene (total)	108-88-3	0.75
1,1,1-Trichloroethane(total)	74552-83-3	0.06
1,1,2-Trichloroethane (total)	79-00-5	0.01
1,1,2,2-Tetrachloroethane (total)	79-34-5	0.01
Vinyl Chloride (total)	75-01-4	0.001
Xylenes (total)(total)	108-38-3, 1330-20-7, 95-47-6, 106-42-3	0.62

Radioactivity:		pCi/L
Combined Radium-226 & Radium-228 (total)		30

Nitrogen Compounds:		mg/L
Total Nitrogen (sum of TKN+NO_3-N) (total)		15

b. For any water contaminant that is not listed in Table 1 of this Discharge Permit but is listed as a toxic pollutant in 20.6.2.7.WW NMAC, the limit shall be the concentration listed in Table A-1 of NMED, Risk Assessment Guidance for Site Investigation and Remediation (most recent edition). For any water contaminant that is not listed in Table 1 of this Discharge Permit or in Table A-1 of the Risk Assessment Guidance, the limit shall be the most recent EPA Regional Screening Level (RSL) for residential tap water. If an RSL is applicable for a carcinogenic water contaminant, the limit shall be adjusted to represent a lifetime risk of no more than one cancer occurrence per 100,000 persons (i.e., a cancer risk of 1×10^{-5}).

In the event that effluent limits are exceeded, the Permittees shall enact the contingency plan set forth in this Discharge Permit. Water contaminants that are subject to effective and enforceable limitations in NPDES Permit No. NM0028355 for discharges to Outfall 051 are exempt from the limits set forth in this Condition.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

14. **EFFLUENT LIMITS: MES and SET**-The Permittees shall not discharge treated waste water to either the MES or SET that exceeds the following limits (or is outside the following pH range):

All water contaminants and their associated limits as listed in Table 2.

Table 2. Effluent Quality Limits for Discharges to the MES and SET

Inorganic Chemicals:	CAS#	mg/L
Aluminum (dissolved)	7429-90-5	5.0
Arsenic (dissolved)	7440-38-2	0.1
Barium (dissolved)	7440-39-3	2.0
Boron (dissolved)	7440-42-8	0.75
Cadmium (dissolved)	7440-43-9	0.01
Chromium (dissolved)	7440-47-3	0.1
Chloride (dissolved)	7647-14-5	250.0
Cobalt (dissolved)	7440-48-4	0.05
Copper (dissolved)	7440-50-8	1.3
Cyanide (dissolved)	57-12-5	0.2
Fluoride(dissolved)	16984-48-8	1.6
Iron (dissolved)	7439-89-6	1.0

Inorganic Chemicals:	CAS#	mg/L
Lead (dissolved)	7439-92-1	0.05
Manganese (dissolved)	7439-96-5	0.2
Molybdenum (dissolved)	7439-98-7	1.0
Mercury (total)	92786-62-4	0.002
Nickel (dissolved)	7440-02-0	0.2
Perchlorate (total)	04797-73-0	0.011
pH (total)		6 – 9
Selenium (dissolved)	7782-49-2	0.05
Silver (dissolved)	7440-22-4	0.1
Sulfate (dissolved)		600.0
Total Dissolved Solids (dissolved)		1000.0
Uranium (dissolved)	7440-61-1	0.03
Zinc (dissolved)	9029-97-4	10.0

Radioactivity:		pCi/L

Nitrogen Compounds:		mg/L

Combined Radium-226 & Radium-228 (total)		30	NO_3-N (dissolved)		10

In the event that effluent limits are exceeded, the Permittee shall enact the contingency plan set forth in this Discharge Permit.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

15. **PERSONNEL QUALIFICATIONS**-Personnel responsible for the operation and maintenance and repair of the Facility shall successfully complete a program of classroom instruction or on-the-job training that provides the skills required to ensure the Facility is operated and maintained in a manner that complies with this Discharge Permit and all applicable local, state and federal laws and regulations. At a minimum, the operators shall be competent in the following:
    a. management procedures for hazardous waste materials;
    b. conducting inspections;
    c. repairing or replacing automatic waste feed cut-off systems;
    d. communications or alarm systems;
    e. emergency response due to unauthorized releases, fire, explosions, or other potential unauthorized releases from the Facility and threat to human health; and
    f. emergency shutdown operations.

    The operations and maintenance and repair of all or any part of the Facility shall be performed by, or under the direct supervision of, qualified personnel. Facility personnel shall review training and certifications on an annual basis to ensure training and certifications are current with any changes to the Facility's processes.

    The Permittees shall maintain the following documents and records at the Facility for current personnel until closure of the Facility:
    a. The job title for each position at the Facility with a narrative of the position responsibilities, reporting hierarchy, requisite skill, education and other qualifications assigned to the position.
    b. The name of the individual who holds each position and all records documenting training and job experience demonstrating the qualifications of that individual to hold the position.

    The Permittees shall maintain all documents and records pertaining to the training of operation and maintenance personnel, including former employees, for a period of five years and shall make such documents and records available to NMED upon request.

    [20.6.2.3106.C NMAC, 20.7.4 NMAC]

16. **EMERGENCY PLAN**-The Permittees shall keep an emergency response

plan at the Facility at all times. At a minimum, the plan shall include the following:

a. Actions Facility personnel must take in response to fires, explosions or any unplanned sudden or non-sudden release of a water contaminant from the Facility to the environment.
b. A spill prevention and response plan to address all unauthorized releases to the environment or those that pose a threat to human health, chronic or acute.
c. Communications and collaboration with local, state and federal emergency response personnel.
d. Names, addresses and phone numbers for all persons qualified to act as an emergency coordinator.
e. A list of all emergency equipment at the Facility that may be utilized in the event of an emergency, its intended function and physical location.
f. An evacuation plan for all Facility personnel which describes signals to be used to notify personnel of an evacuation, routes to evacuated the Facility and alternate evacuation routes.

The emergency response plan shall be reviewed, and updated as necessary, by the Permittees on no less than an annual basis or in the event the plan fails during an emergency, the Facility changes design, construction, or accessibility, key personnel changes or the list of equipment changes. The Permittees shall submit a written summary of the plan and any amendments to NMED no more than 30 days following finalization of the amended plan. The Permittees' written summary shall be provided to the Los Alamos County Emergency Management Coordinator, Los Alamos Fire Department, Los Alamos County Police, Los Alamos Medical Center, New Mexico's Department of Homeland Security and Emergency Management (DHSEM), Pueblo of San Ildefonso, Pueblo of Santa Clara, Pueblo of Jemez and Pueblo of Cochiti, and shall be posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3109.C NMAC]

17. **INSTALLATION OF FLOW METERS**-Within 180 days following the effective date of this Discharge Permit, (by DATE), the Permittees shall install the following flow meters:
    a. One flow meter to be installed on the RLW influent line to the Facility at a location that will capture and measure all influent to the Facility including waste water conveyed to the Facility by alternative methods (e.g. truck).
    b. One flow meter to be installed on the effluent line to the SET at a location that will capture and measure all discharges of treated water to the SET.
    c. One flow meter to be installed on the effluent line to the MES at a location that will capture and measure all discharges of treated water to the MES.

d. One flow meter to be installed on the discharge line to Outfall 051 at a location that will capture and measure all effluent discharges to Outfall 051.

Within 60 days following the installation of flow meters, and within 240 days following the effective date of this Discharge Permit (by DATE), the Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) written confirmation of the meter installation, describing the type, calibration, and location of each flow meter. The flow meters shall be operational except during repair or replacement. Should a meter fail, it shall be repaired or replaced as soon as practical, but no later than 30 days from the date of the failure. During repair or replacement, an alternative method for determining the volume of RLW influent and effluent shall be used until the meter is repaired or replaced.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

18. **CALIBRATION OF FLOW METERS**-All flow meters shall be capable of having their accuracy ascertained under actual working (field) conditions. A field calibration method shall be developed for each flow meter and that method shall be used to check the accuracy of each respective meter. Field calibrations shall be performed within 180 days following the effective date of this Discharge Permit (by DATE) and, at a minimum, on an annual basis thereafter, and immediately upon repair or replacement of a flow meter.

Flow meters shall be calibrated to within plus or minus 10 percent of actual flow, as measured under field conditions. Field calibrations shall be performed by an individual knowledgeable in flow measurement and in the installation and operation of the particular device in use. A calibration report shall be prepared for each flow meter at the frequency calibration is required.

The flow meter calibration report shall include the following information:

a. the meter location and identification;
b. the method of flow meter field calibration employed;
c. the measured accuracy of each flow meter prior to adjustment indicating the positive or negative offset as a percentage of actual flow as determined by an in-field calibration check;
d. the measured accuracy of each flow meter following adjustment, if necessary, indicating the positive or negative offset as a percentage of actual flow of the meter; and
e. any flow meter repairs made during the previous year or during field calibration.

The Permittees shall maintain records of flow meter calibration at a location accessible for review by NMED during Facility inspections.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC, 20.6.2.3109.H NMAC]

B. Monitoring and Reporting

19. **METHODOLOGIES**-Unless otherwise approved in writing by NMED, the Permittees shall conduct sampling and analysis in accordance with the most recent edition of the following documents:
    a. American Public Health Association, Standard Methods for the Examination of Water and Waste water;
    b. U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste;
    c. U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey;
    d. American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water;
    e. U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition;
    f. Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations; or
    g. Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy;

    [20.6.2.3107.A NMAC, 20.6.2.3107.B NMAC]

20. **MONITORING REPORTS**-The Permittees shall submit monitoring reports to NMED on a quarterly basis and shall post all reports on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated). Quarterly sampling and analysis as required in this Discharge Permit shall be performed within the following periods and reports shall be submitted as described below:
    a. Sampling and analysis completed between January 1 and March 31– report to be submitted to NMED by May 1;
    b. Sampling and analysis completed between April 1 and June 30 – report to be submitted to NMED by August 1;
    c. Sampling and analysis completed between July 1 and September 30– report to be submitted to NMED by November 1;
    d. Sampling and analysis completed between October 1 and December 31– report to be submitted to NMED by February 1.

    [NMSA 1978, § 74-6-5.D, 20.6.2.3109.B NMAC, 20.6.2.3109.C NMAC, 20.6.2.3107.A NMAC]

21. **INFLUENT VOLUMES RLW**-The Permittees shall measure the volume of all RLW influent waste water being conveyed to the Facility on a daily basis

using the flow meter required to be installed by this Discharge Permit.

The total daily and monthly volumes of RLW influent conveyed to the Facility shall be submitted to NMED in the quarterly monitoring reports and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC, 20.6.2.3109.H NMAC]

22. **INFLUENT VOLUMES TRU**-The Permittees shall estimate the volume of TRU influent waste water being conveyed to the Facility using electronic sensors which measure tank levels in both the acid waste and caustic waste influent tanks.

    The electronic sensors on these tanks shall be operational except during repair or replacement. Should a sensor used to calculate TRU influent volumes fail, it shall be repaired or replaced as soon as practical, but no later than 30 days from the date of the failure. During repair or replacement, an alternative method for determining the flow of TRU influent shall be used until the defective sensor is repaired or replaced.

    Volumes shall be determined by calculation using the head change and tank size. Operators shall record changes in influent tank levels whenever a batch of TRU waste water is conveyed to the Facility. The total daily and monthly volumes of TRU influent received by the Facility shall be submitted to NMED in the quarterly monitoring reports and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

    [20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC, 20.6.2.3109.H NMAC].

23. **DISCHARGE VOLUMES**-The Permittees shall measure and record the volume of treated waste water discharged to the SET, MES and Outfall 051 on a daily basis. The Permittees shall determine effluent volumes as follows:
    a. Discharge volumes to the SET shall be determined by daily totalized meter readings on the flow meter required in this Discharge Permit, located on the effluent line to the unit.
    b. Discharge volumes to Outfall 051 shall be determined by daily totalized meter readings on the flow meter required in this Discharge Permit, located on the effluent line to the outfall.
    c. Discharge volumes to the MES shall be determined by daily totalized meter readings on the flow meter required in this Discharge Permit, located on the effluent line to the unit.

    The daily and monthly discharge volumes shall be submitted to NMED in the quarterly monitoring reports and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC, 20.6.2.3109.H NMAC]

24. **WASTE TRACKING**-The Permittees shall maintain written or electronic records of all waste streams conveyed to the Facility. At a minimum, the Permittees shall record the following information:
    a. The name of the generator and a unique waste stream identification number.
    b. The time period that the Permittee approves the generator to convey the wastestream to the Facility.
    c. The location where the waste stream was generated.
    d. Estimated volume and duration of the waste stream, including:
        - estimated number of days per year discharge will occur;
        - average daily volume received by the Facility when discharge occurs;
        - maximum daily volume received by the Facility each year when discharge occurs; and
        - estimated total volume discharged to the facility each year.
    e. The waste stream characterization (i.e., analytical data or knowledge of process).
    f. The names of the personnel that approved the receipt of the waste at the Facility (e.g., Waste Certifying official, RCRA Reviewer, and Facility Reviewer).

    The Permittees shall maintain all waste tracking records required by this Condition for five years from the date of the final discharge from the generator of that waste stream. The Permittees shall furnish upon request, and make available at all reasonable times for inspection, the waste tracking records required in this Discharge Permit.

    [NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

25. **EFFLUENT SAMPLING** -The Permittees shall sample and analyze effluent waste streams discharged to Outfall 051, the SET, and the MES.

    Treated effluent samples shall be collected once per calendar month for any month in which a discharge occurs to Outfall 051. The Permittees shall collect a grab sample of treated effluent which shall be analyzed for all water contaminants listed in 20.6.2.3103 NMAC, TKN and all toxic pollutants as defined in 20.6.2.7.WW NMAC.

    Treated effluent samples shall be collected once per calendar month for any month in which a discharge occurs to the MES or SET. The Permittees shall collect a grab sample of treated effluent which shall be analyzed for TKN, NO_3-N, TDS, Cl, F and perchlorate.

    The Permittees shall collect and analyze effluent samples once per quarter for

any quarterly period in which a discharge occurs to the MES or SET. The Permittees shall collect a grab sample of treated effluent which shall be analyzed for all water contaminants listed in 20.6.2.3103 NMAC and all toxic pollutants as defined in 20.6.2.7.WW NMAC.

All samples shall be properly prepared, preserved, transported and analyzed in accordance with the parameters and methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the quarterly monitoring reports and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated). For any calendar month during which no discharge occurs, the Permittees shall submit to NMED a report so stating.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

26. **SOIL MOISTURE MONITORING SYTEM FOR THE SET**-Within 120 days following the effective date of this Discharge Permit (by DATE), the Permittees shall submit to NMED for approval a proposed workplan, design and schedule for the installation of a moisture monitoring system for the detection of unauthorized releases from the SET. The system shall be designed to detect, at a minimum, absolute variations in volumetric soil moisture content below the SET within a precision of 2%. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

The Permittees shall install the moisture monitoring boreholes in accordance with the final workplan, design and schedule approved by NMED.

The Permittees shall use neutron moisture probes to log the moisture monitoring boreholes following installation to establish baseline conditions and to develop a calibration data set for the probe and a soil moisture action level, to be approved by NMED, which indicates that moisture is being detected below the SET at levels that are above baseline conditions.

Within 90 days following acceptance of the final construction of the moisture monitoring boreholes by the Permittees, the Permittees shall submit to NMED for approval the following items:

a. Confirmation that the moisture monitoring borehole installation has been completed.
b. Record drawings of the final design of the completed installation.
c. Reports on the baseline moisture condition and neutron probe calibration.
d. A proposed action level to be used to indicate that elevated moisture has been detected beneath the SET.

Upon approval or approval with conditions by NMED, of the completed installation and soil moisture action level, the Permittees shall perform quarterly soil moisture monitoring in the moisture monitoring boreholes. The Permittees' submittals along with any NMED response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

In the event that the soil moisture content beneath the SET exceeds the NMED approved action level, the Permittees shall enact the contingency plan set forth in this Discharge Permit.

The moisture monitoring boreholes and neutron probes shall be maintained so that the boreholes remain accessible for monitoring and the probe remains operational. Should the system or a component of the system fail, it shall be repaired or replaced as soon as possible, but no later than 90 days from the date of the failure. For good cause, NMED may approve a longer period.

The Permittees shall maintain all documents and records pertaining to the quarterly monitoring events and maintenance or repair of the soil moisture monitoring system for a period of five years and shall make such documents and records available to NMED upon request.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

27. **GROUND WATER FLOW**-The Permittees shall submit a ground water flow direction report to NMED on an annual basis. The report shall contain regional, intermediate and alluvial aquifer ground water depth-to-water measurements, existing interconnections with other aquifers (if any are known), a narrative description of the known characteristics of the ground water elevation and flow direction within each aquifer and, to the extent practicable, ground water elevation contour map(s) for the aquifers underlying Sandia, Pajarito, Ten-site and Mortandad Canyons.

The ground water elevation contour maps shall depict the ground water flow direction based on the most recent representative ground water elevation data from monitoring wells located in the subject areas. Ground water elevations shall be estimated using common interpolation methods to a contour interval approved by NMED and appropriate to the available data. Ground water elevation contour maps shall depict the water table and potentiometric surfaces, ground water flow directions, and the location and name of each monitoring well and discharge location unit associated with this Discharge Permit.

The ground water flow direction report shall be submitted to NMED in the monitoring report due on February 1 of each year and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service

(or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.C]

28. **GROUND WATER MONITORING**-The Permittees shall collect ground water samples from the following ground water monitoring wells on a quarterly basis and analyze the samples for TKN, NO_3-N, TDS, Cl, F and perchlorate.
    a. **MCO-3**- previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.
    b. **MCO-7**-previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.
    c. **MCOI-6**-previously constructed and located in the intermediate aquifer presumed to be hydrologically downgradient of Outfall 051.

    The Permittees shall collect ground water samples from the following ground water monitoring wells on an annual basis and analyze the samples for all water contaminants listed in 20.6.2.3103 NMAC and all toxic pollutants listed in 20.6.2.7.WW.
    a. **MCO-3**- previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.
    b. **MCO**-7-previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.
    c. **MCOI-6**-previously constructed and located in the intermediate aquifer presumed to be hydrologically downgradient of Outfall 051.
    d. **R-46**- previously constructed and located in the regional aquifer, downgradient of the RLWTF.
    e. **R-60**- previously constructed and located in the regional aquifer, downgradient of the RLWTF.

    Sampling shall be done in accordance with the methods authorized in this Discharge Permit and using the following procedure:
    a. Measure the ground-water surface elevation, to the nearest hundredth (0.01) of a foot, from the top of the casing, each time ground water is sampled.
    b. Measure the total depth of the monitoring well to the nearest hundredth (0.01) of a foot.
    c. Calculate total volume of water within the monitoring well.
    d. Purge three well volumes of water from the monitoring well prior to sampling, using an adequate pumping system.
    e. Collect samples from the well using appropriate methods to avoid cross-contamination of the samples and sources.
    f. Prepare the Chain-of-Custody, preserve the sample and transport samples in accordance with methods authorized in this Discharge Permit.
    g. Samples shall be analyzed by an analytical laboratory using methods authorized in this Discharge Permit.

The Permittees may submit to NMED for approval a written proposed alternate monitoring well sample collection plan that would apply in lieu of this Permit Condition. The Permittees shall provide a justification for all proposed changes. Upon NMED approval or partial approval of such alternate plan, the approved plan or portion thereof shall apply and be fully enforceable in lieu of this Permit Condition. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

The Permittees shall use sampling and analytical methods that ensure the production of accurate and reliable data indicative of ground water quality in all ground water that may be affected by any discharges from the Facility. The Permittees shall prepare ground water monitoring reports describing, in detail, the sampling and analytical methods used. The ground water monitoring reports shall contain, at minimum, the following information:

a. date sample was collected;
b. time sample was collected;
c. individuals collecting sample;
d. monitoring well identification;
e. physical description of monitoring well location;
f. ground-water surface elevation ;
g. total depth of the well;
h. total volume of water in the monitoring well prior to sample collection;
i. total volume of water purged prior to sample collection;
j. description of sample methods (i.e., constituent being sampled for, container used, preservation methods);
k. chain-of custody; and
l. map, to scale, identifying monitoring wells and their location.

The ground water monitoring report shall be submitted to NMED with the quarterly monitoring report required in this Discharge Permit and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

C. Contingency Plans

29. **CONTAINMENT**-The Permittees shall institute corrective actions, as necessary, to ensure the protection of ground water and human health. In the event that a unit or system or secondary containment for a unit or system reveals damage that could result in structural failure or a release to the environment, the Permittees shall take the following actions:
    a. The Permittees shall remove the unit or system from service immediately.

b. The Permittees shall take immediate, and if necessary temporary, corrective actions to minimize the potential for a release.
c. If failure of the unit or system or secondary containment resulted in a release to the environment, the Permittees shall provide NMED oral notification of the release in 20.6.2.1203 NMAC within 24 hours of learning of the release and take subsequent corrective actions as required in this Discharge Permit.
d. Within 90 days following identification of the potential failure or release, the Permittees shall submit to NMED for approval a written corrective action report to include, at minimum, the following:
    1) Identification of the unit or system, or secondary containment for a unit or system in which the failure was observed.
    2) The date and time the failure was observed and the date and time it was estimated to have begun.
    3) The potential cause of the failure.
    4) For units in which a release occurred to secondary containment but was not released to the environment, the rate at which the release occurred and total volume released to the secondary containment.
    5) The characteristics of the waste stream being treated, stored or conveyed by the unit or system, with analytical results from waste stream samples taken with date, time, technical staff collecting the sample and the QA/QC lab report.
    6) The corrective actions taken to remediate the failure or release with a timeline of when actions were implemented.
    7) Long-term actions, if any, that are proposed to be employed for maintaining the integrity of the secondary containment and the schedule for implementing such actions.
    8) Ongoing measures for monitoring, inspecting, and determining structural integrity of the secondary containment.
    9) Proposed operation and maintenance and repair protocol, if applicable, to be instated to prevent future failures.

    Upon NMED approval of the corrective action report, the Permittees shall implement any approved long-term actions to maintain the integrity of the secondary containment, and any other approved measures or protocols, according to the approved schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC]

30. **WATER-TIGHTNESS**-In the event that any unit or system does not demonstrate water-tightness in accordance with this Discharge Permit, or should inspection reveal damage to the unit that could result in structural failure, the Permittees shall take the following actions:

a. If the unit or system failure resulted in an unauthorized release, either through a primary or secondary containment unit or system, the Permittees shall provide NMED oral notification of the release in 20.6.2.1203 NMAC within 24 hours of learning of the release.
b. If the failed unit or system does not have secondary containment the Permittees shall take the following corrective actions:
   1) the Permittees shall remove the unit or system from service immediately; and
   2) as soon as possible following the failure of the unit or system, the Permittees shall submit to NMED for approval a written proposal including a schedule for corrective actions to be taken to repair or permanently cease operation of the unit or system.
c. If the failed primary unit or system has secondary containment, the Permittees shall submit to NMED for approval a written proposal for corrective actions, within 90 days following the failure of the unit or system. The corrective action proposal shall include a schedule for corrective actions to be taken to repair or to permanently cease operation of the unit or system.

If repair or replacement of a unit or system requires construction, the Permittees shall submit plans and specifications to NMED with the proposed corrective actions. The Permittees' proposal shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated). Plans and specifications shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978).

Upon NMED approval, the Permittees shall implement the approved corrective actions according to the approved schedule. The Permittees shall post NMED's response on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

Prior to placing a repaired or replaced unit or system back into service, the Permittee shall repeat the water-tightness testing in accordance with Condition 8 to verify the effectiveness of the repair or replacement, and submit a report detailing the completion of the corrective actions to NMED. The report shall include the date of the test, the name of the individual that performed the test, written findings, photographic documentation of the unit's interior and water tightness test results. If notified to do so by NMED, the Permittees shall also submit record drawings that include the final, construction details of the unit. Record drawings shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978). The Permittees' submittal shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC]

31. **SETTLED SOLIDS REMOVAL-**In the event the average settled solids accumulation in an open unit or system exceeds one foot, or in the event that the Permittees otherwise plan to initiate removal of settled solids from an open unit or system, the Permittees shall propose a plan for the removal and disposal of the settled solids from the unit or system. Within 120 days following the determination of settled solids depth, and prior to any settled solids removal, the Permittees shall submit to NMED for approval a written settled solids removal and disposal plan. The plan shall include characterization of the settled solids, the estimated volume of settled solids to be removed, a method for removal throughout the unit or system in a manner that is protective of the structural integrity of the unit or system, a schedule for completing the settled solids removal and disposal, and a description of how the settled solids will be contained, transported, and disposed of in accordance with all local, state, and federal laws and regulations. Upon NMED approval, the Permittees shall implement the plan according to the approved schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

    [NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC,]

32. **DAMAGE TO STRUCTURAL INTEGRITY**-In the event that an inspection required in this Discharge Permit, or any other observation, reveals significant damage likely to affect the structural integrity of a unit or system or any of its associated components, or its ability to function as designed, the Permittees shall propose the repair or replacement of the treatment system or its associated components. Within 90 days after discovery by the Permittees or following notification from NMED that corrective action is required, the Permittees shall submit to NMED for approval a written corrective action plan that includes a schedule for implementation and completion. Upon NMED approval, the Permittees shall implement the plan according to the approved schedule. The Permittees shall remedy any deterioration or malfunction of equipment or structures which are discovered during inspection. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

    [20.6.2.3107.A NMAC]

33. **FREEBOARD EXCEEDANCE**-In the event that freeboard, two feet or an NMED approved alternative, is not maintained in an open tank, impoundment or other open unit or system that contains a liquid or semi-liquid, the Permittees shall take immediate corrective actions to restore the required freeboard.

In the event that the required freeboard cannot be restored within a period of 72 hours following discovery, the Permittees shall submit to NMED for approval a proposed corrective action plan to restore the required freeboard within 15 days following the date when exceedance of the required freeboard was initially discovered, The plan shall include a schedule for completion of corrective actions and quantifiable assessments to demonstrate preservation of the required freeboard for a period no less than five years. Upon NMED approval, the Permittees shall implement the corrective action plan according to the approved schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC]

34. **EFFLUENT EXCEEDANCE**-In the event that analytical result of an effluent sample indicate an exceedance for any of the effluent limits set forth by this Discharge Permit, the Permittees shall analyze a subsequent sample for the particular analyte that was in exceedance within 24 hours following receipt of analytical results indicating the exceedance. In the event the analytical results of the subsequent sample confirm that the maximum limitation has been exceeded (i.e., confirmed exceedance), the Permittees shall take the following actions:

Within 24 hours of becoming aware of a confirmed exceedance, the Permittees shall:

a. cease discharges to the system that limits have been exceeded with the exception of the MES to which a confirmed exceedance shall not require immediate cessation;
b. notify the NMED Ground Water Quality Bureau that an effluent limit set forth in this Discharge Permit has been confirmed to be in exceedance; and
c. increase the frequency of effluent sampling to adequately establish quality of all discharges by batch.

Within one week of becoming aware of a confirmed exceedance, the Permittees shall:

a. submit copies of the analytical results for the initial and subsequent sample confirming the exceedance to NMED;
b. examine the internal operational procedures, and maintenance and repair logs, required by Condition 11 of this Discharge Permit, for evidence of improper operation or function of the units and systems; and
c. conduct a physical inspection of the treatment system to detect abnormalities, and correct any abnormalities.

A report detailing the corrections made shall be submitted to NMED within 30 days following correction. The Permittees' report shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at

http://eprr.lanl.gov/oppie/service (or as updated).

In the event that analytical results from any two independent monthly effluent samples indicate an exceedance of the effluent limits for all discharge systems set forth in this Discharge Permit within any 12-month period, the Permittees shall propose to modify operational procedures or upgrade the treatment process to achieve the effluent limits. Within 90 days of receipt of the second sample analysis in which effluent limits have been exceeded, the Permittees shall submit to NMED for approval a corrective action plan. The plan shall include a schedule for completion of corrective actions. Upon NMED approval, the Permittees shall implement the corrective action plan according to the approved schedule. The Permittees' corrective action plan along with NMED's response shall be posted by the Permittees on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

When analytical results from three consecutive months of effluent sampling do not exceed the maximum limitations set forth by this Discharge Permit, the Permittees are authorized to return to a monthly or quarterly monitoring frequency as required in this Discharge Permit.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3107.C NMAC]

35. **SOIL MOISTURE DETECTION SYSTEM EXCEEDANCE**-In the event that the soil moisture detection system for the SET detects a soil moisture increase beneath the SET that exceeds the NMED approved action level, the Permittees shall take the following corrective actions:
    a. Notify the NMED Ground Water Quality Bureau within 15 days following the date when the soil moisture was initially discovered to exceed the action level.
    b. Propose the source of the increased soil moisture beneath the SET to NMED within 60 days following the date when the soil moisture was initially discovered to exceed the action level. Include the basis for the determination.

    In the event the source of the soil moisture exceedance is demonstrated to be associated with failure of the SET, the Permittees shall cease discharges to the SET and submit a corrective action plan to NMED, for approval, within 120 days following the date when the soil moisture was initially discovered to exceed the action level. At a minimum, the corrective action plan shall include the following:
    a. removal of all standing liquid from one or both basins (as appropriate);
    b. a proposal for repairing or replacing the synthetic liners within the SET, if leakage through the synthetic liners is found to be the source, or for other repairs;

c. a plan for re-instituting soil moisture monitoring following repairs to the SET to demonstrate that the repairs resolved the source of the increased soil moisture beneath the SET; and
d. a schedule for implementation of the corrective action plan elements.

In the event the source of the soil moisture exceedance is demonstrated to be associated with an occurrence other than a failure of the SET, the Permittees shall submit a corrective action plan to NMED, for approval, within 120 days following the date when the soil moisture was initially discovered to exceed the action level. The corrective action plan shall include any actions necessary to ensure the soil moisture detection system is operating within its intended function as required by this Discharge Permit including, but not limited to, re-calibration.

Upon NMED approval, or approval with conditions, the Permittees shall implement the corrective action plan according to the approved schedule. The Permittees' corrective action plan along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.E NMAC]

36. **MONITORING WELL LOCATION**-In the event that ground water flow information obtained pursuant to this Discharge Permit indicates that a monitoring well is not located hydrologically downgradient of the discharge location it is intended to monitor, NMED may require the Permittees to install a replacement well or wells. Within 30 days following receipt of such notification from NMED, the Permittees shall submit to NMED for approval a well installation work plan, describing each proposed well location, drilling methods and well specifications, and proposing a schedule for construction. Upon NMED approval, the Permittees shall construct the replacement well or wells according to the approved work plan and schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

Within 90 days following well completion, the Permittees shall survey the elevation and location of the newly installed replacement monitoring well or wells. Within 120 days following well completion, the Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) construction and lithologic logs, survey data, and a ground water elevation contour map.

Replacement wells shall be located, installed, and completed in accordance with the attachment titled: *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions, Revision 1.1*, March 2011.

[NMSA 1978, § 74-6-5.D, 20.6.2.3109.B NMAC]

37. **MONITORING WELL CONSTRUCTION**-In the event that information available to NMED indicates that a well is not constructed in a manner consistent with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Guidelines, Revision 1.1*, March 2011; contains insufficient water to effectively monitor ground water quality; or is not completed in a manner that is protective of ground water quality, NMED may require the Permittees to install a replacement well or wells. Within 90 days following receipt of such notification from NMED, the Permittees shall submit to NMED for approval a well installation work plan, describing each proposed well location, drilling methods, well specifications, and proposed schedule for construction. Upon NMED approval, the Permittees shall construct the replacement well or wells according to the approved work plan and schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

    Within 90 days following well completion, the Permittees shall survey the elevation and location of the newly installed replacement monitoring well or wells. Within 120 days of well completion, the Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) construction and lithologic logs, survey data, and a ground water elevation contour map.

    Replacement wells shall be located, installed, and completed in accordance with the attachment titled: *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions, Revision 1.1*, March 2011.

    Upon completion of the replacement monitoring well, the monitoring well requiring replacement shall be properly plugged and abandoned. Well plugging, and abandonment and documentation of the abandonment procedures shall be completed in accordance with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions, Revision 1.1*, March 2011, and all applicable local, state, and federal laws and regulations. The well abandonment documentation shall be submitted to NMED and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) within 60 days of completion of well plugging activities.

    [NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC]

38. **GROUND WATER EXCEEDANCE**- NMED reviews ground water data that is generated by the Permittees from samples collected from the monitoring wells identified in this Discharge Permit and other monitoring

wells in the vicinity of the Facility. The Permittees report newly detected ground water quality standard exceedances or the newly detected toxic pollutants (as defined in this Discharge Permit and in 20.6.2.7.WW NMAC) in ground water for the entire Laboratory to NMED. If NMED determines that a ground water quality standard is exceeded or that a toxic pollutant is present in ground water, potentially due to a discharge associated with the Facility or defined systems in this Discharge Permit, the Permittees shall submit a ground water investigation/source control workplan to NMED for approval within 60 days following notification to do so by NMED. The Permittees' workplan along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).
At a minimum, the ground water investigation/source control workplan shall include the following elements:

a. a proposal to investigate the source, nature and extent of the ground water contamination, if unknown, which may utilize existing ground water monitoring wells or may propose the installation of new monitoring wells, as appropriate;
b. a proposal to mitigate the discharge or mobilization of the water contaminant which might be causing ground water contamination, as appropriate; and
c. a schedule for implementation of the workplan and submittal of a report to NMED.

Upon NMED approval of the ground water investigation/source control workplan, or approval of the plan with conditions, the Permittees shall implement the workplan and submit a written report to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) in accordance with the approved schedule.

Should the findings of the ground water investigation reveal that a discharge associated with the Facility or defined systems in this Discharge Permit is a source of the ground water contamination, the Permittees shall abate water pollution pursuant to 20.6.2.4000 through 20.6.2.4115 NMAC, following notification from NMED.

This Permit Condition does not apply to an exceedance of ground water quality standard or the presence of a toxic pollutant in ground water unrelated to a discharge associated with the Facility or defined systems in this Discharge Permit, to the extent that abatement of such ground water contamination is occurring, or will occur, pursuant to and in accordance with the March 1, 2005 Compliance Order on Consent (Consent Order) agreed to by NMED, DOE, and the Regents of the University of California (predecessor to LANS).

[NMSA 1978, § 74-6-5.D, 20.6.2.3109.E NMAC, 20.6.2.3107.A NMAC]

39. **SPILL OR UNAUTHORIZED RELEASE**-In the event that a release not authorized in this Discharge Permit occurs, the Permittees shall take measures to mitigate damage from the unauthorized discharge and initiate the notifications and corrective actions required in 20.6.2.1203 NMAC and summarized below.

Within 24 hours following discovery of the unauthorized discharge, the Permittees shall orally notify NMED and provide the following information:

a. the name, address, and telephone number of the person or persons in charge of the Facility;
b. the identity and location of the Facility;
c. the date, time, location, and duration of the unauthorized discharge;
d. the source and cause of unauthorized discharge;
e. a description of the unauthorized discharge, including its estimated chemical composition;
f. the estimated volume of the unauthorized discharge; and
g. any actions taken to mitigate immediate damage from the unauthorized discharge.

Within one week following discovery of the unauthorized discharge, the Permittees shall submit written notification to NMED with the information listed above and any pertinent updates.

Within 15 days following discovery of the unauthorized discharge, the Permittees shall submit to NMED for approval a corrective action report and plan describing any corrective actions taken and to be taken to address the unauthorized discharge that includes the following:

a. a description of proposed actions to mitigate damage from the unauthorized discharge;
b. a description of proposed actions to prevent future unauthorized discharges of this nature; and
c. a schedule for completion of proposed actions.

Upon NMED approval of the corrective action report and plan, the Permittees shall implement the approved actions according to the approved schedule. The Permittees' corrective action report and plan along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

In the event that the unauthorized discharge causes or may with reasonable probability cause water pollution in excess of the standards and requirements of 20.6.2.4103 NMAC, and the water pollution will not be abated within 180 days after notice is required to be given pursuant to 20.6.2.1203.A(1) NMAC, the Permittees may be required to abate water pollution pursuant to 20.6.2.4000 through 20.6.2.4115 NMAC.

Nothing in this condition shall be construed as relieving the Permittees of the obligation to comply with all requirements of 20.6.2.1203 NMAC.

[NMSA 1978, § 74-6-5.D, 20.6.2.1203 NMAC, 20.6.2.3109.B NMAC]

40. **FAILURES IN DISCHARGE PLAN/DISCHARGE PERMIT**-In the event that NMED or the Permittees identify any failure of the discharge plan or this Discharge Permit not specifically set forth herein, NMED may require the Permittees to submit for its approval a corrective action plan and a schedule for completion of corrective actions to address the failure. Additionally, NMED may require a Discharge Permit modification to achieve compliance with Part 20.6.2 NMAC. The Permittees' corrective action plan along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.E NMAC]

D. Closure

41. **CESSATION OF OPERATION OF SPECIFIC UNITS**- Within 60 days of the effective date of this Discharge Permit (by DATE), the Permittees shall permanently cease operation of the following units:
    a. the 75,000 gallon concrete influent storage tank (75K tank);
    b. the 100,000 gallon steel influent storage tank (100K tank);
    c. the two 26,000 gallon concrete clarifiers located within Building 1 of TA-50;
    d. the two 25,000 gallon concrete effluent storage tanks (WM2-N, WM2-S); and
    e. the gravity filter located within Building 1 of TA-50.

    Upon the cessation of operation of these specific units, the Permittees shall implement the requirements for stabilization of the individual units, systems and components in accordance with this Discharge Permit.

    [NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.E NMAC]

42. **STABILIZATION OF INDIVIDUAL UNITS AND SYSTEMS** - Within 90 days from the permanent cessation of operation of a unit or system, the Permittees shall submit to NMED for approval a written work plan for the stabilization of the unit or system for which operation has ceased. The work plan shall identify steps necessary to ensure that the unit or system can no longer receive a discharge and that no further releases of water contaminants occur as a result of the unit or system. At a minimum, the work plan shall

include the following:

a. identification of the unit or system in which cessation of use has occurred;
b. a detailed description of the function of the unit or system;
c. a detailed description of the historic influent waste streams to the unit or system;
d. a detailed description of all conveyance lines leading to the unit or system and a description of how the lines will be terminated, plugged, re-routed or bypassed so that a discharge to the unit or system can no longer occur;
e. identification of those portions of the approved Final Closure Plan required in Condition 42 of this Discharge Permit that will be implemented;
f. a description of all proposed interim measures, actions and controls that will be implemented until such time of final removal of the unit, system or component to prevent the release of water contaminants into the environment; to prevent water contaminants, including storm water run-on and run-off, from moving into ground water; and to prevent water contaminants from posing a threat to human health; and
g. a schedule for implementation.

Upon NMED approval of the work plan, the Permittees shall implement the plan according to the approved schedule.

Within 30 days following the completion of all interim measures, actions and controls, the Permittees shall submit to NMED for approval a final written report on the actions taken to implement the partial closure. The Permittees' workplan and final written report along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.E NMAC]

43. **FINAL CLOSURE PLAN**- Within 180 days from the effective date of this Discharge Permit (by DATE), the Permittees shall submit to NMED for approval a written closure plan for the Facility. The closure plan shall identify steps necessary to perform final closure of the Facility, including all units and systems at the Facility. At a minimum, the closure plan shall include the following:
    a. A detailed description of how each unit and system at the Facility will be closed.
    b. A detailed description of the actions to be taken to decommission, demolish, and remove each unit, system, and other structure, including any secondary containment system components.
    c. A detailed description of the actions and controls that will be implemented during closure to prevent the release of water contaminants into the environment; to prevent water contaminants, including run-on and run-off,

from moving into ground water; and to prevent water contaminants from posing a threat to human health.

d. A detailed description of the methods to be used for decontamination of the site and decontamination of equipment used during closure.
e. A detailed description of the actions that will be taken to reclaim the site, including placement of clean fill material and re-grading to blend with surrounding surface topography, minimize run-on and run-off, and prevent ponding of water, and re-vegetation.
f. A detailed description of all monitoring, maintenance and repair, and controls that will be implemented after closure, and of all actions that will be taken to minimize the need for post-closure monitoring, maintenance and repair, and controls.
g. A ground water monitoring plan to detect water contaminants that might move directly or indirectly into ground water after closure, which shall provide for, at a minimum, eight consecutive quarters of ground water monitoring after completion of closure.
h. A detailed description of the methods that will be used to characterize all wastes generated during closure, including treatment residues, contaminated debris, and contaminated soil, in compliance with all local, state, and federal laws and regulations.
i. A detailed description of the methods that will be used to remove, transport, treat, recycle, and dispose of all wastes generated during closure in compliance with all local, state, and federal laws and regulations.
j. A detailed schedule for the closure and removal of each unit and system, which lists each proposed action and the estimated time to complete it.

If the Permittees make any changes to the Facility that would affect the implementation of the approved Closure Plan, the Permittees shall submit to NMED for approval a written notification and an amended Closure Plan. All documents required to be submitted to NMED in this Condition by the Permittees along with NMED's responses shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.E NMAC]

44. **FINAL CLOSURE**-Upon cessation of operation of the Facility, the Permittees shall implement the approved Final Closure Plan according to the approved schedule therein.

Once closure begins, and until all closure requirements (excluding post-closure ground water monitoring) are completed, the Permittees shall submit to NMED, with the monitoring reports required in this Discharge Permit, quarterly status reports describing the closure actions taken during the previous reporting period and the actions scheduled for the next reporting

period. Within 90 days following the completion of the closure, the Permittees shall submit to NMED for approval a final written report on the actions taken to implement closure. The Permittees' quarterly status reports and final written report, along with NMED's response, shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.E NMAC]

45. **POST-CLOSURE GROUND WATER MONITORING-** After closure has been completed and approved by NMED, the Permittees shall continue ground water monitoring of any wells dedicated to the Facility according to the approved Closure Plan to confirm that the standards of 20.6.2.3103 NMAC are not exceeded and toxic pollutants in 20.6.2.7.WW NMAC are not present in ground water. Such monitoring shall continue for a minimum of eight consecutive quarters.

    If monitoring results show that a ground water quality standard in 20.6.2.3103 NMAC is exceeded or a toxic pollutant in 20.6.2.7.WW NMAC is present in ground water, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

    Upon demonstration confirming ground water quality does not exceed the standards of 20.6.2.3103 NMAC and does not contain a toxic pollutant in 20.6.2.7.WW NMAC, the Permittees may submit a written request to cease ground water monitoring activities. The Permittees' request for cessation of ground water monitoring along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

    Following notification from NMED that post-closure monitoring may cease, the Permittees shall plug and abandon the monitoring well in accordance with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions, Revision 1.1,* March 2011.

    [NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.F NMAC, 20.6.2.4103.D NMAC]

46. **TERMINATION-** When all closure and post-closure requirements have been met, the Permittees may submit to NMED a written request for termination of the Discharge Permit. The Permittees' request to terminate along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

If the Discharge Permit expires or is terminated for any reason and any standard of 20.6.2.3103 NMAC is or will be exceeded, or a toxic pollutant in 20.6.2.7.WW NMAC is or will be present in ground water, NMED may require the Permittees to submit an abatement plan pursuant to 20.6.2.4104 NMAC.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.F NMAC, 20.6.2.4103.D NMAC]

E. General Terms and Conditions

47. **APPROVALS -** Upon receipt of a work plan, written proposal, report, or other document subject to NMED approval, NMED will review the document and may either approve the document, approve the document with conditions, or disapprove the document. Upon completing its review, NMED will notify the Permittees in writing of its decision, including the reasons for any conditional approval or disapproval.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

48. **RECORD KEEPING -** The Permittees shall maintain a written record of the following information and shall make it available to NMED upon request:
    a. Information and data used to prepare the application for this Discharge Permit.
    b. Records of any releases or discharges not authorized in this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC.
    c. Records, including logs, of the operation and maintenance and repair of all Facility and equipment used to treat, store or dispose of waste water.
    d. Facility record drawings (plans and specifications) showing the actual construction of the Facility and shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978).
    e. Copies of monitoring reports completed and submitted to NMED pursuant to this Discharge Permit.
    f. The volume of waste water or other wastes discharged pursuant to this Discharge Permit.
    g. Ground water quality and waste water quality data collected pursuant to this Discharge Permit.
    h. Copies of construction records (well logs) for all ground water monitoring wells required to be sampled pursuant to this Discharge Permit.
    i. Records of the maintenance and repair, replacement, and calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit.
    j. Data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit.

With respect to sampling and laboratory analysis, the Permittees shall record and maintain following information and shall make it available to NMED upon request:

a. The dates, location and times of sampling or field measurements;
b. The name and job title of the individuals who performed each sample collection or field measurement.
c. The sample analysis date of each sample.
d. The name and address of the laboratory, and the name of the signatory authority for the laboratory analysis.
e. The analytical technique or method used to analyze each sample or collect each field measurement.
f. The results of each analysis or field measurement, including raw data;
g. The results of any split, spiked, duplicate or repeat sample.
h. All laboratory analysis chain-of-custody forms and a description of the quality assurance and quality control procedures used.

The written record shall be maintained by the Permittees at a location accessible during a Facility inspection by NMED for a period of at least five years from the date of application, report, collection or measurement and shall be made available to NMED upon request.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.D NMAC, 20.6.2.3109.B NMAC]

49. **INSPECTION AND ENTRY** – The Permittees shall allow inspection by NMED of the Facility and its operations which are subject to this Discharge Permit and the WQCC regulations. NMED may upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which are located any records required to be maintained by regulations of the federal government or the WQCC.

The Permittees shall allow NMED to have access to and reproduce any copy of the records, and to perform assessments, sampling or monitoring during an inspection for the purpose of evaluating compliance with this Discharge Permit and the WQCC regulations.

Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED in the WQA, the WQCC Regulations, or any other local, state or federal laws and regulations.

[NMSA 1978, §§ 74-6-9.B and 74-6-9.E, 20.6.2.3107.D NMAC]

50. **DUTY TO PROVIDE INFORMATION** - The Permittees shall, upon NMED's request, allow NMED to inspect and duplicate any and all records required by this Discharge Permit and furnish NMED with copies of such records.

Nothing in this Discharge Permit shall be construed as limiting in any way the authority of NMED to gather information as stipulated in the WQA, the WQCC Regulations, or any other local, state or federal laws and regulations.

[NMSA 1978, §§ 74-6-5.D, 74-6-9.B, and 74-6-9.E, 20.6.2.3107.D NMAC, 20.6.2.3109.B NMAC]

51. **MODIFICATIONS AND AMENDMENTS** – In the event the Permittees propose a change to the Facility or the Facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated or discharged by the Facility, the Permittees shall notify NMED prior to implementing such changes. The Permittees shall obtain written approval (which may require modification of this Discharge Permit) from NMED prior to implementing such changes.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.C NMAC, 20.6.2.3109.E NMAC,]

52. **CIVIL PENALTIES** - Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or Facility, or any refusal or failure to provide NMED with records or information, may subject the Permittees to a civil enforcement action. Pursuant to WQA 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to WQA 74-6-10.C and 74-6-10.1, civil penalties of up to $15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to $10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the Permittees waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit.

[NMSA 1978, §§ 74-6-10 and 74-6-10.1]

53. **CRIMINAL PENALTIES** – The WQA provides that no person shall:
    a. make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained in the WQA;
    b. falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained in the WQA; or
    c. fail to monitor, sample or report as required by a permit issued pursuant to

a state or federal law or regulation.

Any person who knowingly violates or knowingly causes or allows another person to violate the requirements of this condition is guilty of a fourth degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who is convicted of a second or subsequent violation of the requirements of this condition is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition or knowingly causes another person to violate the requirements of this condition and thereby causes a substantial adverse environmental impact is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition and knows at the time of the violation that he is creating a substantial danger of death or serious bodily injury to any other person is guilty of a second degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15.

[NMSA 1978, §§ 74-6-10.2.A through 74-6-10.2.F]

54. **COMPLIANCE WITH OTHER LAWS** - Nothing in this Discharge Permit shall be construed in any way as relieving the Permittees of the obligation to comply with all applicable federal, state, and local laws, regulations, permits or orders.

[20.6.2 NMAC]

55. **LIABILITY**- The Permittees shall be jointly and severally liable for all their obligations in this Discharge Permit.

[NMSA 1978, §§ 74-6-5.A and 74-6-10]

56. **RIGHT TO APPEAL** - The Permittees may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC, shall be filed within thirty days of the receipt of this Discharge Permit, and shall include a statement of the issues to be raised and the relief sought. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review.
[NMSA 1978, § 74-6-5.O]

57. **TRANSFER OF OWNERSHIP**- Prior to the transfer of any ownership, control, or possession of this Facility or any portion thereof, the Permittees shall:
    a. notify the proposed transferee in writing of the existence of this Discharge Permit;
    b. include a copy of this Discharge Permit with the notice; and

c. deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee.

Until both ownership and possession of the Facility have been transferred to the transferee, the Permittees shall continue to be responsible for any discharge from the Facility.

[20.6.2.3104 NMAC, 20.6.2.3111 NMAC]

58. **PERMIT FEES-** Payment of permit fees is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date.

Permit fees are associated with issuance of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the Permittees of the obligation to pay all permit fees assessed by NMED. If the Permittees cease discharging at or from the Facility during the term of the Discharge Permit, they shall nevertheless pay all permit fees assessed by NMED. An approved Discharge Permit shall be suspended or terminated if the Permittees fail to remit payment when due.

[20.6.2.3114.F NMAC, NMSA 1978, § 74-6-5.K]

VII. Permit Term and Signature

EFFECTIVE DATE: [effective date]
TERM ENDS: [expiration date]
[20.6.2.3109.H NMAC, NMSA 1978, § 74-6-5.I]

_____
JERRY SCHOEPPNER
Chief, Ground Water Quality Bureau
New Mexico Environment Department

6hh60:

DP-1132

New Mexico Environment Department
Ground Water Quality Bureau

Public Notice 2
To be published on or before September 13, 2013

Notice is hereby given pursuant to 20.6.2.3108.H NMAC, the following Ground Water Discharge Permit applications have been proposed for approval. To request additional information or to obtain a copy of a draft permit, contact the Ground Water Quality Bureau in Santa Fe at (505) 827-2900. Draft permits may also be viewed on-line at http://www.nmenv.state.nm.us/gwb/NMED-GWQB-PublicNotice.htm

NOTE – If viewing by WEB - Click on facility name to review a copy of the draft permit.

DP #	Facility/Applicant	Closest City	County	Notice	NMED Permit Contact
1132	Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility Robert Beers, Point of Contact Los Alamos National Laboratory Environmental Protection Division Water Quality & RCRA Group P.O. Box 1663, Mail Stop K490 Los Alamos, NM 87545	Los Alamos	Los Alamos	Los Alamos National Security, LLC (LANS) and the United States Department of Energy (DOE) propose to treat up to 40,000 gallons per day of low-level radioactive wastewater at Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility, and to discharge treated effluent to a mechanical evaporation system, solar evaporation system or to an outfall (Outfall 051 also regulated under a National Pollutant Discharge Elimination System (NPDES) permit issued by the United States Environmental Protection Agency (EPA) pursuant to the federal Clean Water Act section 402, 33 U.S.C. § 1342). Potential contaminants associated with this type of waste stream include nitrogen compounds, metals, organic compounds, and low-level radioactive materials. The Facility is located within Los Alamos National Laboratory, approximately 1.5 miles south of Los Alamos, New Mexico, in Sections 16, 17, 20, 21 and 22, Township 19N, Range 06E, Los Alamos County. Ground water most likely to be affected ranges from depths of approximately one foot to 1,306 feet and has a total dissolved solids concentration ranging from approximately 162 to 255 milligrams per liter. This public notice has been extended to a period of 90 days in which written comments may be submitted to the department and/or a public hearing may be requested in writing.	Jennifer Fullam

Prior to ruling on any proposed Discharge Permit or its modification, the New Mexico Environment Department (NMED) will allow thirty days after the date of publication of this notice to receive written comments and during which time a public hearing may be requested by any interested person, including the applicant. Requests for public hearing shall be in writing and shall set forth the reasons why a hearing should be held. A hearing will be held if NMED determines that there is substantial public interest. Comments or requests for hearing should be submitted to the Ground Water Quality Bureau at PO Box 5469, Santa Fe, NM 87502-5469.

To view this and other public notices issued by the Ground Water Quality Bureau on-line, go to:
http://www.nmenv.state.nm.us/gwb/NMED-GWQB-PublicNotice.htm

Fullam Docs / uploads / LANL / DP1132 TA50 RLWTF / Phone logs and meeting notes / DP1132 PL 091713 San Ildefonso

New Mexico Environment Department
Ground Water Quality Bureau

Memorandum of Meeting or Phone Conversation

Memorandum of Meeting or Phone Conversation

☑ Telephone ☐ Meeting	**Time:** 1140	**Date:** 09.17.13

Individuals Involved

Jennifer Fullam, NMED GWQB	☐ was called by	Name: Michael Chacon
		Affiliation: San Ildefonso Pueblo
		DP: 1132
		Site Name: LANL Radioactive Liquid Waste Treatment Facility
		Phone Number: 505.455.4122

Subject: Question regarding Draft DP

Discussion:

Chacon called Fullam and stated they were reviewing the draft Discharge Permit and wanted clarification on what the "mechanical evaporators" consisted of. Fullam explained they are gas generated boiler systems which actively evaporate off the treated water. Steam is released via stacks. The systems are relatively small in size and to Fullam's knowledge LANL had submitted a NOI to the Air Quality Bureau but were not required to obtain a permit through them. To Fullam's knowledge, the solids are shipped off-site. Chacon will let Fullam know if the Pueblo has any further questions or comments.

Conclusions:

Distribution:

DP Correspondence File

Initialed: JF

PUEBLO OF SANTA ANA

OFFICE OF THE GOVERNOR

September 27, 2013

Ms. Jennifer Fullam
NMED – Groundwater Quality Bureau
PO Box 5469
Santa Fe, NM 87502-5469

Re: The Pueblo of Santa Ana's Comments on the Draft Ground Water Discharge Permit (DP-1132) for the Los Alamos National Laboratory Radioactive Liquid Waste Treatment Facility

Dear Ms. Fullam:

The Pueblo of Santa Ana (the Pueblo) appreciates the opportunity to comment on the draft Ground Water Discharge Permit (DP-1132) for the Los Alamos National Laboratory (LANL) Radioactive Liquid Waste Treatment Facility (RLWTF).

Please note that the Pueblo has developed draft Water Quality Standards and has scheduled a public hearing on these standards as part of the approval process. The Pueblo expects to have these standards approved by the Pueblo by the end of 2013 and by USEPA sometime in 2014. The Pueblo has also applied to the USEPA for Treatment in a manner Similar to a State (TAS).

The Pueblo requests that the permittee provide the required 24-hour oral and subsequent written reports to the Pueblo as well as to the New Mexico Environment Department (NMED) for any violations or contingencies as described in Section C, Contingency Plans. These types of violations represent a human health concern and as a downstream water user the Pueblo requires notification in order to protect the public from these events. In order to expedite the Pueblo's response, the 24-hour notification contact phone number for the Pueblo of Santa Ana is (505) 771-6757. As the permit allows the written reports to be posted electronically, the Pueblo requests that they be notified electronically at Bart.VandenPlas@santaana-nsn/gov when these reports are available. This electronic notification applies to all electronic reports that are required by this permit, including those is Section B, Monitoring and Reporting as well as Section C, Contingency Plans.

LANL has reported in "Radioactive Liquid Waste Treatment Facility Discharges in 2011" (the latest discharge report that was available on LANL's website) that all liquid discharges are evaporated. The discharge report did not include any information on the sludge or solids removed from the evaporator. The Pueblo requests that the discharges of the solids and sludge from the evaporator be reported and the Pueblo receive notification of the publication of the discharge reports.

02 DOVE ROAD • SANTA ANA PUEBLO • NM 87004
TEL: 505-867-3301 • FAX: 505-867-3395 •

The Pueblo requests written confirmation of NMED's response to these comments. The Pueblo reserves the right to request Tribal Consultation should the NMED decline to adopt any of the requested changes to the draft permit. If you have any questions, please contact Joseph McGinn at (505) 771-6754 or Bart Vanden Plas at (505) 771-6757.

Sincerely,

Pueblo of Santa Ana
Myron Armijo, Governor

Cc:
Alan Hatch, PSA Department of Natural Resources Director
Joseph McGinn, PSA Water Resources Division Manager
Bart Vanden Plas, PSA Water Quality Scientist
Richard Hughes, Rothstein, Donatelli, Hughes, Dahlstrom, Schoenburg & Bienvenu, 1215 Paseo De Peralta, Santa Fe, NM 87504
Karl Johnson, Luebben Johnson & Barnhouse LLP, 7424 4th St NW, Los Ranchos de Albuquerque, NM 87107
Honorable Terry L. Aguilar, Governor, Pueblo De San Idefonso, Route 5, Box 315-A, Santa Fe, NM 87506
Nikole Witt, U.S. EPA Region VI, State/Tribal Programs Section (6WQ-AT), 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202-2733
Diane Evans, EPA Region VI, State/Tribal Programs Section (6WQ-AT), Tribal Water Quality Standards Coordinator, 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202-2733

DP-1132

Los Alamos NATIONAL LABORATORY

Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
505-667-0666

National Nuclear Security Administration
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87545
(505) 667-5794/FAX (505) 667-5948

Date: OCT 0 3 2013
Symbol: ENV-DO-13-0166
LAUR: 13-26704

GROUND WATER
OCT 0 4 2013
BUREAU

Mr. Jerry Schoeppner, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2250
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Mr. Schoeppner:

SUBJECT: REQUEST FOR TEMPORARY PERMISSION TO PLACE NEW INFLUENT STORAGE TANKS INTO SERVICE AT LOS ALAMOS NATIONAL LABORATORY, DP-1132

Pursuant to Subsection B of 20.6.2.3106 New Mexico Administrative Code, and guidance provided by the New Mexico Environment Department Ground Water Quality Bureau (NMED GWQB), the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) request temporary permission to place two of the Waste Mitigation and Risk Management (WMRM) Facility's storage tanks at Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility (RLWTF) into service for primary influent storage. The $150.00 filing fee required by regulation is enclosed (Enclosure 1).

In February 2012, DOE/LANS submitted to the NMED GWQB a discharge permit application (DP-1132) for the Technical Area (TA)-50 RLWTF and the TA-52 Solar Evaporation Tank (SET) (ENV-DO-12-0005). Subsequently, in August 2012, DOE/LANS submitted to the NMED GWQB supplemental information for the above-referenced discharge permit application that proposed to replace seven aging vessels at the TA-50 RLWTF by making major process changes and by placing two storage tanks at the WMRM Facility into daily use for influent storage (Enclosure 2). Preparations by DOE/LANS—both construction and procedural— to place the two WMRM tanks into service for primary influent storage are nearly complete.

At a May 29, 2013, meeting NMED GWQB staff recommended to DOE/LANS the temporary permission pathway to operation because the NMED GWQB recognized that the need to use the two WMRM tanks for influent storage might precede the issuance of a final discharge permit. NMED GWQB staff recommended that DOE/LANS request temporary permission once a draft Discharge Permit had been released for public notice (PN2). Public notice (PN2) of the draft Discharge Permit for DP-1132 was published on the NMED's website on September 13, 2013. For the reasons described above, temporary permission is requested to allow the use of the two WMRM tanks for influent storage, pending the issuance of DP-1132.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this quarterly report.

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
Department of Energy

AMD:GET:RSB/lm

Enclosures:

1. Check to the NMED in the amount of $150 for the temporary permission filing fee.
2. Supplemental Information for Discharge Permit Application DP-1132, Radioactive Liquid Waste Treatment Facility (RLWTF) and Zero Liquid Discharge (ZLD) Solar Evaporation Tanks

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, w/enc.
John E. Kieling, NMED/HWB, Santa Fe, NM, w/enc.
Steven M. Yanicak, NMED/DOE/OB, w/enc., (E-File)
Hai Shen, NA-OO-LA, w/enc., (E-File)
Gene E. Turner, NA-OO-LA, w/enc., (E-File)
Carl A. Beard, PADOPS, w/o enc., (E-File)
Michael T. Brandt, ADESH, w/o enc., (E-File)
Alison M. Dorries, ENV-DO, w/o enc., (E-File)
Randal S. Johnson, DSESH-TA55, w/enc., (E-File)
Robert C. Mason, TA55-DO, w/enc., (E-File)
William H. Schwettmann, IPM, w/o enc., (E-File)
Dianne W. Wilburn, TA55-DO, w/enc., (E-File)
John C. Del Signore, TA-55 RLW, w/enc., (E-File)
Michael T. Saladen, ENV-RCRA, w/o enc., (E-File)
Robert S. Beers, ENV-RCRA, w/enc., K490
LASOmailbox@nnsa.doe.gov, w/enc., (E-File)
locatesteam@lanl.gov, w/enc., (E-File)
ENV-RCRA Correspondence File, w/enc., K490

ENCLOSURE 1

Check to the NMED in the amount of $150.00 for the temporary permission filing fee

ENV-DO-13-0166

LAUR-13-26704

Date: OCT 0 3 2013

ENCLOSURE 2

Supplemental Information for Discharge Permit Application DP-1132, Radioactive Liquid Waste Treatment Facility (RLWTF) and Zero Liquid Discharge (ZLD) Solar Evaporation Tanks

ENV-DO-13-0166

LAUR-13-26704

Date: OCT 0 3 2013

Los Alamos
NATIONAL LABORATORY
EST. 1943

Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

National Nuclear Security Administration
Los Alamos Site Office, A316
3747 West Jemez Road
Los Alamos, New Mexico 87545
(505) 667-5794/FAX (505) 667-5948

Date: AUG 10 2012
Refer To: ENV-RCRA-12-0173
LAUR: 12-21591

Mr. Jerry Schoeppner, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Mr. Schoeppner:

SUBJECT: SUPPLEMENTAL INFORMATION FOR DISCHARGE PERMIT APPLICATION DP-1132, RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (RLWTF) AND ZERO LIQUID DISCHARGE (ZLD) SOLAR EVAPORATION TANKS

On November 18, 2011, the New Mexico Environment Department (NMED) notified the U. S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) that a comprehensive, up-to-date application was required to issue Discharge Permit (DP)-1132 for the Technical Area 50 (TA-50) Radioactive Liquid Waste Treatment Facility and the TA-52 Zero Liquid Discharge Solar Evaporation Tanks. A Discharge Permit application (ENV-DO-12-0005) and supplement (ENV-DO-12-0019) were submitted to NMED by DOE/LANS on February 16, 2012, and April 2, 2012, respectively. After the above-referenced application and supplement were submitted, DOE/LANS confirmed that they could replace seven vessels at the TA-50 RLWTF with two new storage tank systems with leak detection capability located at the TA-50 Waste Mitigation and Risk Management (WMRM) Facility. This significant and improved change requires DOE/LANS to submit the enclosed supplement and modification to its existing permit application.

The table below lists the seven vessels DOE/LANS propose to remove from service and the corresponding replacement vessels. These modifications will also remove from service a single-wall pipe that connects the 75,000-gal. influent tank to the clarifiers. Engineering design is currently underway to affect the above-referenced modifications to the TA-50 RLWTF. In the interim, wastewater storage and treatment processes at the TA-50 RLWTF will be conducted in accordance with processes and units described in the DP-1132 permit application and supplement submitted on February 16, 2012, and April 2, 2012, respectively.

Existing Vessel				Replacement Vessel		
Location	Vessel	Vessel Use	Volume (gal.)	Location	Vessel	Volume (gal.)
TA-50-02	75K tank	Influent storage	75,000	TA-50-250	WMRM Tanks (2)	50,000[1]
TA-50-02	WM2-North	Effluent storage	25,000	na	na	na
TA-50-02	WM2-South	Effluent storage	25,000	na	na	na
TA-50-01	Clarifier #1	Chemical precipitation	20,000	TA-50-01	TK71	10,000
TA-50-01	Clarifier #2	Chemical precipitation	20,000	TA-50-01	TK72	10,000
TA-50-01	Gravity Filter	Solids separation	7,000	TA-50-01	filter/sludge/clean[2]	40/500/200[1]
TA-50-90	100K Tank	Influent storage	100,000	na	na	na

[1]Capacity is for each tank.
[2]Microfilter

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this information.

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 Site Office
U.S. Department of Energy

AMD:GET:RSB/lm

Enclosures:

1. Supplemental Information, DP-1132 Application, Revised Sections A-8, A-9, and B-12.
2. Supplemental Information, DP-1132 Application, Revised Section B-7.
3. Supplemental Information, DP-1132 Application, Revised RLWTF Processes and Units—Appendix B.
4. Supplemental Information, DP-1132 Application, Revised Process Schematic—Appendix B.
5. Supplemental Information, DP-1132 Application, Revised Scaled Floor Plan—Appendix B.

Cy: Joni Arends, Concerned Citizens for Nuclear Safety, Santa Fe, NM, w/enc.
Jonathan M. Block, New Mexico Environmental Law Center, Santa Fe, NM, w/enc.
James Hogan, NMED/SWQB, Santa Fe, NM, w/enc.
John E. Kieling, NMED/HWB, Santa Fe, NM, w/enc.
Stephen M.Yanicak, NMED/DOE/OB, w/enc., (E-File)
Kevin W. Smith, LASO-OOM, w/enc., A316
Gene E. Turner, LASO-EPO, w/enc., (E-File)
Hai Shen, LASO-EPO, w/enc., (E-File)
Carl A. Beard, PADOPS, w/enc., A102
Michael T. Brandt, ADESH, w/enc., (E-File)
Alison M. Dorries, ENV-DO, w/enc., (E-File)
Michael T. Saladen, ENV-RCRA, w/enc., (E-File)
Robert S. Beers, ENV-RCRA, w/enc., K490
Robert C. Mason, TA55 DO, w/enc., (E-File)
Clifford W. Kirkland, TA-55-RLW, w/enc., (E-File)
Chris Del Signore, TA-55-RLW, w/enc., (E-File)
Victor J. Salazar, TA-55-RLW, w/enc., (E-File)
Randal S. Johnson, ENV-ES, w/enc., (E-File)
IRM-RMMSO, w/enc., (E-File)
ENV-RCRA Correspondence File, w/enc., K490

ENCLOSURE 1

Supplemental Information, DP-1132 Application

Revised Sections A-8, A-9, and B-12 – Redline

Revised Sections A-8, A-9, and B-12 – Final

ENV-RCRA-12-0173

LAUR-12-21591

Date: AUG 1 0 2012

A-8. Processing, Treatment, Storage and Disposal System. Briefly describe how wastewater, sludge, etc. is processed, treated, stored, and/or disposed of at your facility. See Supplemental Instructions for examples of system components.

The Radioactive Liquid Waste Treatment Facility (RLWTF) consists of (a) an underground collection system that conveys water to Technical Area (TA) 50 from generators at LANL, (b) structures at TA-50, and (c) Zero Liquid Discharge Solar Evaporation Tanks at TA- 52. At Technical Area 50, Building 50-01 is the primary structure; it houses treatment equipment, process tanks, analytical laboratories, and offices. Adjacent TA-50 structures primarily provide for additional water storage: ~~50-02 (influent),~~ 50-66 (influent), ~~50- 90 (influent),~~ 50-248 (secondary waters), and 50-250 (influent and emergency).

The RLWTF receives and treats radioactive liquid waste (RLW) from generators at Los Alamos National Laboratory. RLW includes small volumes, less than one percent of total influent, that are also characteristically hazardous for corrosivity, which are treated using elementary neutralization. The RLWTF has (1) a main treatment process for low-level RLW, (2) a process for treating transuranic RLW, and (3) a secondary treatment process for waste streams from both the low-level and transuranic processes.

1) The main treatment process consists of influent collection and storage, the treatment of low-level RLW, and the discharge of treated water to the environment. ~~Treatment~~ Process steps include treatment with chemicals in a reaction tank, ~~clarification~~, filtration, ion exchange, and reverse osmosis. Discharge to the environment is via NPDES Outfall #051, solar evaporation at the TA-52 Zero Liquid Discharge (ZLD) Solar Evaporation Tanks, or ~~mechanical~~ evaporation using natural gas at TA-50-257. Two secondary streams are generated by primary treatment, sludge and reverse osmosis concentrate; they are sent to the secondary treatment process.

2) Transuranic RLW treatment consists of influent collection and storage, treatment of the transuranic RLW, and sludge treatment. Treated water is not discharged; it either receives additional treatment (secondary reverse osmosis) or is sent to storage tanks in Building 50-248 for disposition as bottoms. Sludge from the treatment process is concentrated, solidified with cement, and shipped to the Waste Isolation Pilot Plant as a solid transuranic waste.

3) The secondary treatment process treats wastes from the primary and transuranic treatment lines. It consists of a rotary vacuum filter to treat sludge from the main treatment process, secondary reverse osmosis to treat reverse osmosis concentrate from the main process and/or effluent from the transuranic process, and a bottoms disposal step. Wastes from the secondary treatment process are disposed as low-level radioactive solid waste.

A-9. **Discharge Locations.** List the locations of your facility and of all components of your processing, treatment, storage and/or disposal system. Examples of components include septic tanks, lagoons, leachfields, irrigation sites, mine stockpiles, etc. Additional examples are listed in the Supplemental Instructions. Latitude and longitude are optional unless township, range and section are not available.

Components	Township	Range	Section(s)	Latitude	Longitude
~~RLWTF Mechanical~~ Natural Gas Evaporator (50-257)	19N	6E	22	35° 51' 58.3" 35° 51' 43.4"	-106° 17' 48.5" -106° 17' 51.8"
NPDES Outfall #051 (NM0028355)	19N	6E	22	35° 51' 54"	-106° 17' 52"
TA-52 Zero Liquid Discharge Solar Evaporation Tanks (currently under construction)	19N	6E	22	35° 51' 36"	-106° 17' 12"

B-12. **Discharge Volumes.** Describe how and where the monthly discharge volume at your facility will be. For all measuring devices, provide type, location, and units of measure including multipliers (e.g., gallons, gallons x 100, acre-ft, etc.) See Supplemental Instructions. Attach additional pages, if necessary.

Discharges of treated water to the environment are measured by the following methods:

- Low-level influent: ~~Low-level RLW influent volumes are determined by daily water balance. The levels of process vessels and tanks are continuously monitored with information transmitted electronically to the RLWTF control room. Level changes are converted to volume changes, which are summed daily. Influent is determined as the sum of tank volume changes plus volumes of water discharged to the environment and water removed as sludge. Tank level and other volume information is reviewed daily to assure activities and tank level changes agree with actual plant operations.~~
  Low-level RLW influent volumes will be determined by monitoring and recording the change in level of Tank 5 and Tank 6 in the Waste Management and Risk Mitigation (WMRM) Facility. While radioactive liquid waste (RLW) is being fed to the treatment process from one of these two influent tanks (e.g., Tank 5), fresh influent will be received in the other influent tank (e.g., Tank 6). In this illustration, the change in level of Tank 6 from one day to the next will reflect the volume of the influent received.
- Transuranic influent: Transuranic influent is received in batches from TA-55, with influent collected in either the acid tank or caustic tank in Building 50-66. Level probes for these tanks are linked electronically to the RLWTF control room. Operators monitor and record tank level changes during each influent batch transfer. Influent volumes are calculated from the difference between beginning and ending tank levels.

- Discharge to the environment by ~~mechanical~~ evaporation using natural gas at 50-257: Treated water is fed to the evaporator from the effluent Frac tanks in Room 34B; water is typically fed continuously during the normal work week, including overnight. Volumes are read in gallons from a water meter on the evaporator feed line.

- Discharge to the environment by solar evaporation: Treated water is discharged to the TA-52 Zero Liquid Discharge Solar Evaporation Tanks from either of the effluent Frac tanks in Room 34B, or from TK38 in Room 38. Discharges occur in batches. The volume, in gallons, of each discharge is calculated from the change in tank level. If discharges are from the effluent Frac tanks, which are horizontal tanks, before- and after-discharge tank volumes are determined from a table that correlates tank level and volume of water in the tank. If discharges are from TK38, pre and post discharge tank volumes are read directly from markings on this translucent vertical tank.

- Discharge to the environment via NPDES Outfall #051: Treated water is discharged from either of the effluent Frac tanks in Room 34B, or from TK38 in Room 38. Discharges occur in batches. The volume, in gallons, of each discharge is calculated from the change in tank level. If discharges are from the effluent Frac tanks, which are horizontal tanks, before- and after-discharge tank volumes are determined from a table that correlates tank level and volume of water in the tank. If discharges are from TK38, pre and post discharge tank volumes are read directly from markings on this translucent vertical tank.

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The Radioactive Liquid Waste Treatment Facility (RLWTF) consists of (a) an underground collection system that conveys water to Technical Area (TA) 50 from generators at LANL, (b) structures at TA-50, and (c) Zero Liquid Discharge Solar Evaporation Tanks at TA- 52. At Technical Area 50, Building 50-01 is the primary structure; it houses treatment equipment, process tanks, analytical laboratories, and offices. Adjacent TA-50 structures primarily provide for additional water storage: 50-66 (influent), 50-248 (secondary waters), and 50-250 (influent and emergency).

The RLWTF receives and treats radioactive liquid waste (RLW) from generators at Los Alamos National Laboratory. RLW includes small volumes, less than one percent of total influent, that are also characteristically hazardous for corrosivity, which are treated using elementary neutralization. The RLWTF has (1) a main treatment process for low-level RLW, (2) a process for treating transuranic RLW, and (3) a secondary treatment process for waste streams from both the low-level and transuranic processes.

1) The main treatment process consists of influent collection and storage, the treatment of low-level RLW, and the discharge of treated water to the environment. Process steps include treatment with chemicals in a reaction tank, filtration, ion exchange, and reverse osmosis. Discharge to the environment is via NPDES Outfall 051, solar evaporation at the TA-52 Zero Liquid Discharge (ZLD) Solar Evaporation Tanks or evaporation using natural gas at TA-50-257. Two secondary streams are generated by primary treatment, sludge and reverse osmosis concentrate; they are sent to the secondary treatment process.

2) Transuranic RLW treatment consists of influent collection and storage, treatment of the transuranic RLW, and sludge treatment. Treated water is not discharged; it either receives additional treatment (secondary reverse osmosis) or is sent to storage tanks in Building 50-248 for disposition as bottoms. Sludge from the treatment process is concentrated, solidified with cement, and shipped to the Waste Isolation Pilot Plant as a solid transuranic waste.

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A-9. **Discharge Locations.** List the locations of your facility and of all components of your processing, treatment, storage and/or disposal system. Examples of components include septic tanks, lagoons, leachfields, irrigation sites, mine stockpiles, etc. Additional examples are listed in the Supplemental Instructions. Latitude and longitude are optional unless township, range and section are not available.

Components	Township	Range	Section(s)	Latitude	Longitude
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TA-52 Zero Liquid Discharge Solar Evaporation Tanks (currently under construction)	19N	6E	22	35° 51' 36"	-106° 17' 12"

B-12. **Discharge Volumes.** Describe how and where the monthly discharge volume at your facility will be. For all measuring devices, provide type, location, and units of measure including multipliers (e.g., gallons, gallons x 100, acre-ft, etc.) See Supplemental Instructions. Attach additional pages, if necessary.

Discharges of treated water to the environment are measured by the following methods:

- **Low-level influent**: Low-level RLW influent volumes will be determined by monitoring and recording the change in level of Tank 5 and Tank 6 in the Waste Management and Risk Mitigation (WMRM) Facility. While radioactive liquid waste (RLW) is being fed to the treatment process from one of these two influent tanks (e.g., Tank 5), fresh influent will be received in the other influent tank (e.g., Tank 6). In this illustration, the change in level of Tank 6 from one day to the next will reflect the volume of the influent received

- **Transuranic influent:** Transuranic influent is received in batches from TA-55, with influent collected in either the acid tank or caustic tank in Building 50-66. Level probes for these tanks are linked electronically to the RLWTF control room. Operators monitor and record tank level changes during each influent batch transfer. Influent volumes are calculated from the difference between beginning and ending tank levels.

- **Discharge to the environment by evaporation using natural gas at 50-257**: Treated water is fed to the evaporator from the effluent Frac tanks in Room 34B; water is typically fed continuously during the normal work week, including overnight. Volumes are read in gallons from a water meter on the evaporator feed line.

- **Discharge to the environment by solar evaporation**: Treated water is discharged to the TA-52 Zero Liquid Discharge Solar Evaporation Tanks from either of the effluent Frac tanks in Room 34B, or from TK38 in Room 38. Discharges occur in batches. The volume, in gallons, of each discharge is calculated from the change in tank level. If discharges are from the effluent Frac tanks, which are horizontal tanks, before- and after-discharge tank volumes are determined from a table that correlates tank level and volume of water in the tank. If discharges are from TK38, pre and post discharge tank volumes are read directly from markings on this translucent vertical tank.

- **Discharge to the environment via NPDES Outfall #051:** Treated water is discharged from either of the effluent Frac tanks in Room 34B, or from TK38 in Room 38. Discharges occur in batches. The volume, in gallons, of each discharge is calculated from the change in tank level. If discharges are from the effluent Frac tanks, which are horizontal tanks, before- and after-discharge tank volumes are determined from a table that correlates tank level and volume of water in the tank. If discharges are from TK38, pre and post discharge tank volumes are read directly from markings on this translucent vertical tank.

ENCLOSURE 2

Supplemental Information, DP-1132 Application

Revised Section B-7 – Redline

Revised Section B-7 – Final

ENV-RCRA-12-0173

LAUR-12-21591

Date: AUG 1 0 2012

B-7. Operational Plan. Attach a detailed description of how you operate your processing, treatment, storage and/or disposal system.

Animal feeding operations: include stormwater management, nutrient management plans, method for mixing irrigation and wastewater.

Domestic wastewater treatment facilities: include pre-treatment, solids management, vegetation management for land application.

Facilities using reclaimed domestic wastewater above ground: include proposed water quality classification(s), effluent monitoring, setbacks, irrigation schedules, etc. that will result in protection of public health and the environment. Please refer to *NMED Ground Water Quality Bureau Guidance: Above-Ground Use of Reclaimed Domestic Wastewater* for further information. A copy of the guidance document is available on the NMED website www.nmenv.state.nm.us under "Ground Water Quality".

The process description and schematic of the Facility are located in Appendix B (February 16, 2012 Discharge Permit Application for the TA-50 RLWTF). Waste streams are characterized by RLW generators using acceptable EPA characterization methods (sampling and analysis, acceptable knowledge, or both); this characterization data is entered by the generator onto a Waste Profile Form (WPF). The WPF is reviewed by a Waste Management Coordinator, a RCRA subject-matter expert, and RLWTF staff. The waste stream is acceptable for discharge to and treatment at the RLWTF if reviewers approve the WPF.

Influent samples are periodically collected and analyzed at the RLWTF for inorganic and radioactive constituents, as a waste characterization overcheck. Samples of low-level RLW influent are also periodically submitted to an outside chemistry laboratory for analysis of organic constituents.

Generators of low-level RLW prepare and submit a WPF. Once the WPF is approved, the generator is approved to discharge the RLW as generated via the low-level collection system.

If the low-level RLW is to be sent to the RLWTF via truck, the generator must also prepare and submit a Waste Disposal Request form. The Waste Disposal Request is reviewed by a Waste Management Coordinator, transportation, and RLWTF personnel. The shipment is acceptable for transport to the RLWTF if reviewers approve the Waste Disposal Request.

Generators of transuranic RLW also prepare and submit a WPF. In this case, the generator must sample and analyze each batch of transuranic RLW, then submit a request to the RLWTF to transfer that batch to the RLWTF. If analytical results are acceptable, a date and time for transfer is agreed upon. The transfer is controlled by RLWTF personnel who direct TA-55 personnel when to unlock and open the transfer valves; they monitor the level of the acid

waste or caustic waste tank as the transfer is in progress. The TA-55 personnel are directed when to close and lock transfer valves. Transfer valves remain closed and locked until authorized by RLWTF to be opened.

Detailed operating procedures are required for each treatment unit. Procedures are drafted by operators and engineers, then reviewed and approved by safety personnel and management. Before becoming effective, procedures must also be walked down and verified by operators (e.g., valve numbers and sequences). Approved procedures are controlled documents, available at a controlled document website.

Detailed operating procedures follow a mandatory outline, which currently has the following required topics:

- safety and controls
- prerequisite actions (prior to startup)
- detailed operating instructions
- administrative sections such as introduction, definitions, acronyms, references, and record keeping

Detailed operating sections provide step-by-step instructions for operating the treatment equipment, and identify valves by valve number (valves within the facility are labeled), electrical switches by number (electrical components are labeled), and the sequence for opening and closing valves and starting and stopping equipment (e.g., mixers, pumps).

The table below lists procedures currently used for treatment operations at the RLWTF. (The list varies over time, but procedures always exist for each unit operation.)

Operators also inspect equipment each operating day, both informally (as they operate equipment) and formally (as documented on daily inspection round sheets). Inspections include tank level checks, pump operability, alarm tests (horns and lights), leak inspections, levels of combustibles and wastes, and other items. Results of the formal inspections are reviewed with and signed off by management, and corrective maintenance work orders are initiated for deficiencies.

RLWTF Detailed Operating Procedures

Unit Operation	Detailed Operating Procedures
Main Treatment:	
M1 Collection System	Annual Inspection of the RLW Collection System Vaults
M2 Influent Storage	RLWTF Tank Management Sampling at the RLWTF
M3 Emergency Influent Storage	WMRM Facility Status Change WMRM System Alignment Checklist Sampling WMRM Tanks Transferring RLW Form WMRM to RLWTF
M4 Reaction Tanks ~~Clarifiers~~	TK71 Operations TK72 Operations System Alignment Checklist for Reaction Tanks ~~Clarifiers, Gravity Filter, and Gravity Filter Bypass~~ ~~Clarifier Chemicals and NaOH Operations~~
M5 Microfilter ~~Gravity Filter~~	Microfilter Operations System Alignment Checklist for the Microfilter ~~Clarifiers, Gravity Filter, and Gravity Filter Bypass~~
M6 Pressure Filters	Pressure Filter Operations System Alignment Checklist for Pressure Filter Operations
M7 Perchlorate Ion Exchange	Re-Configure Flow Path through the IX Columns in Room 16
M8 Primary Reverse Osmosis	Reverse Osmosis Clean-in-Place System Membrane Maintenance
M9 Polishing Ion Exchange	System Alignment Checklist for RLWTF Effluent Disposition Ion Exchange Treatment of RLWTF Effluent
M10 Effluent Storage	System Alignment Checklist for RLWTF Effluent Disposition
M11 Solar Evaporation at TA-52	ZLD Facility Status Change Transferring Effluent: RLW to ZLD Tanks Sampling ZLD Tanks Transferring Effluent: ZLD Tanks to WMRM

M11 Outfall #051	Frac Tank Operations and Discharge of TK38 TK38 Operations
Transuranic:	
T1 Collection System	WM-201/66/107 System Alignment Checklist Transuranic RLW Transfers from TA-55 to TA-50
T2 Influent Storage	Sampling of the WM66 Influent Tanks
T3 Treatment	Room 60/60A System Alignment Checklist Acid Waste Treatment Caustic Waste Treatment Operations Back flushing the Pressure Filter
T4 Drum Tumbling	Sampling TK-7A, Sludge Mixing, and Sludge Rinsing Water Addition to TK-7A Drum Tumbler Operations
T5 Effluent Storage	Transferring Material from TK3 to the 3K Tank
Secondary Treatment:	
S1 Secondary Reverse Osmosis	Secondary RO Operations Secondary RO Cleaning and Maintenance
S2 Rotary Vacuum Filter	Vacuum Filter System
S3 Bottoms Storage	Sampling TK-SE Loading Evaporator Bottoms into a Tanker

☐ Operational plan is attached.

☐ Operational plan was previously submitted. Submittal date(s): _____

B-7. Operational Plan. Attach a detailed description of how you operate your processing, treatment, storage and/or disposal system.

Animal feeding operations: include stormwater management, nutrient management plans, method for mixing irrigation and wastewater.

Domestic wastewater treatment facilities: include pre-treatment, solids management, vegetation management for land application.

Facilities using reclaimed domestic wastewater above ground: include proposed water quality classification(s), effluent monitoring, setbacks, irrigation schedules, etc. that will result in protection of public health and the environment. Please refer to *NMED Ground Water Quality Bureau Guidance: Above-Ground Use of Reclaimed Domestic Wastewater* for further information. A copy of the guidance document is available on the NMED website www.nmenv.state.nm.us under "Ground Water Quality".

The process description and schematic of the Facility are located in Appendix B (February 16, 2012 Discharge Permit Application for the TA-50 RLWTF). Waste streams are characterized by RLW generators using acceptable EPA characterization methods (sampling and analysis, acceptable knowledge, or both); this characterization data is entered by the generator onto a Waste Profile Form (WPF). The WPF is reviewed by a Waste Management Coordinator, a RCRA subject-matter expert, and RLWTF staff. The waste stream is acceptable for discharge to and treatment at the RLWTF if reviewers approve the WPF.

Influent samples are periodically collected and analyzed at the RLWTF for inorganic and radioactive constituents, as a waste characterization overcheck. Samples of low-level RLW influent are also periodically submitted to an outside chemistry laboratory for analysis of organic constituents.

Generators of low-level RLW prepare and submit a WPF. Once the WPF is approved, the generator is approved to discharge the RLW as generated via the low-level collection system.

If the low-level RLW is to be sent to the RLWTF via truck, the generator must also prepare and submit a Waste Disposal Request form. The Waste Disposal Request is reviewed by a Waste Management Coordinator, transportation, and RLWTF personnel. The shipment is acceptable for transport to the RLWTF if reviewers approve the Waste Disposal Request.

Generators of transuranic RLW also prepare and submit a WPF. In this case, the generator must sample and analyze each batch of transuranic RLW, then submit a request to the RLWTF to transfer that batch to the RLWTF. If analytical results are acceptable, a date and time for transfer is agreed upon. The transfer is controlled by RLWTF personnel who direct TA-55 personnel when to unlock and open the transfer valves; they monitor the level of the acid

waste or caustic waste tank as the transfer is in progress. The TA-55 personnel are directed when to close and lock transfer valves. Transfer valves remain closed and locked until authorized by RLWTF to be opened.

Detailed operating procedures are required for each treatment unit. Procedures are drafted by operators and engineers, then reviewed and approved by safety personnel and management. Before becoming effective, procedures must also be walked down and verified by operators (e.g., valve numbers and sequences). Approved procedures are controlled documents, available at a controlled document website.

Detailed operating procedures follow a mandatory outline, which currently has the following required topics:

- safety and controls
- prerequisite actions (prior to startup)
- detailed operating instructions
- administrative sections such as introduction, definitions, acronyms, references, and record keeping

Detailed operating sections provide step-by-step instructions for operating the treatment equipment, and identify valves by valve number (valves within the facility are labeled), electrical switches by number (electrical components are labeled), and the sequence for opening and closing valves and starting and stopping equipment (e.g., mixers, pumps).

The table below lists procedures currently used for treatment operations at the RLWTF. (The list varies over time, but procedures always exist for each unit operation.)

Operators also inspect equipment each operating day, both informally (as they operate equipment) and formally (as documented on daily inspection round sheets). Inspections include tank level checks, pump operability, alarm tests (horns and lights), leak inspections, levels of combustibles and wastes, and other items. Results of the formal inspections are reviewed with and signed off by management, and corrective maintenance work orders are initiated for deficiencies.

RLWTF Detailed Operating Procedures

Unit Operation	Detailed Operating Procedures
Main Treatment:	
M1 Collection System	Annual Inspection of the RLW Collection System Vaults
M2 Influent Storage	RLWTF Tank Management
	Sampling at the RLWTF
M3 Emergency Influent Storage	WMRM Facility Status Change
	WMRM System Alignment Checklist
	Sampling WMRM Tanks
	Transferring RLW Form WMRM to RLWTF
M4 Reaction Tanks	TK71 Operations
	TK72 Operations
	System Alignment Checklist for Reaction Tanks
M5 Microfilter	Microfilter Operations
	System Alignment Checklist for the Microfilter
M6 Pressure Filters	Pressure Filter Operations
	System Alignment Checklist for Pressure Filter Operations
M7 Perchlorate Ion Exchange	Re-Configure Flow Path through the IX Columns in Room 16
M8 Primary Reverse Osmosis	Reverse Osmosis
	Clean-in-Place System
	Membrane Maintenance
M9 Polishing Ion Exchange	System Alignment Checklist for RLWTF Effluent Disposition
	Ion Exchange Treatment of RLWTF Effluent
M10 Effluent Storage	System Alignment Checklist for RLWTF Effluent Disposition
M11 Solar Evaporation at TA-52	ZLD Facility Status Change
	Transferring Effluent: RLW to ZLD Tanks
	Sampling ZLD Tanks
	Transferring Effluent: ZLD Tanks to WMRM
M11 Outfall #051	Frac Tank Operations and Discharge of TK38
	TK38 Operations

Transuranic:	
T1 Collection System	WM-201/66/107 System Alignment Checklist Transuranic RLW Transfers from TA-55 to TA-50
T2 Influent Storage	Sampling of the WM66 Influent Tanks
T3 Treatment	Room 60/60A System Alignment Checklist Acid Waste Treatment Caustic Waste Treatment Operations Back flushing the Pressure Filter
T4 Drum Tumbling	Sampling TK-7A, Sludge Mixing, and Sludge Rinsing Water Addition to TK-7A Drum Tumbler Operations
T5 Effluent Storage	Transferring Material from TK3 to the 3K Tank
Secondary Treatment:	
S1 Secondary Reverse Osmosis	Secondary RO Operations Secondary RO Cleaning and Maintenance
S2 Rotary Vacuum Filter	Vacuum Filter System
S3 Bottoms Storage	Sampling TK-SE Loading Evaporator Bottoms into a Tanker

☐ Operational plan is attached.

☐ Operational plan was previously submitted: Submittal date(s): _____

ENCLOSURE 3

Supplemental Information, DP-1132 Application

Revised RLWTF Processes and Units—Appendix B – Redline
Revised RLWTF Processes and Units—Appendix B – Final

ENV-RCRA-12-0173

LAUR-12-21591

Date: AUG 1 0 2012

Appendix B – TA-50 RLWTF Processes and Units

The Radioactive Liquid Waste Treatment Facility (RLWTF) consists of: (a) an underground collection system that conveys water to Technical Area (TA) 50 from generators at LANL, (b) structures at TA-50, and (c) the Zero Liquid Discharge Solar Evaporation Tanks at TA-52. At TA- 50, Building 50-01 is the primary structure; it houses treatment equipment, process tanks, analytical laboratories, and offices. Adjacent TA-50 structures primarily provide for additional water storage: ~~50-02 (influent),~~ 50-66 (influent), ~~50-90 (influent)~~, 50-248 (secondary waters), and 50-250 (influent and emergency~~emergency~~).

The RLWTF receives and treats radioactive liquid waste (RLW) from generators at Los Alamos National Laboratory. RLW includes small volumes, less than one percent of total influent, that are also characteristically hazardous for corrosivity, which are treated using elementary neutralization. The RLWTF has (1) a main treatment process for low-level RLW, (2) a process for treating transuranic RLW, and (3) a secondary treatment process for waste streams from both the low-level and transuranic processes. The units within each of these process lines are summarized in Table 1 and described in the paragraphs that follow. Table 2 provides additional information for each unit operation, including location, treatment and storage vessels, construction materials, and sizes.

Table 1: Summary of RLWTF Treatment Units

Unit Operation	Location
Main Treatment:	
M1 Collection System	TA-03, 35, 48, 50, 55, 59
M2 Influent Storage	~~50-02, 50-90~~ TA-50-250
M3 Emergency Influent Storage	50-250
M4 Reaction Tanks ~~Clarifiers~~	50-01
M5 Microfilter ~~Gravity Filter~~	50-01
M6 Pressure Filters	50-01
M7 Perchlorate Ion Exchange	50-01
M8 Primary Reverse Osmosis	50-01
M9 ~~Polishing~~ Cu-Zn Ion Exchange	50-01
M10 Effluent Storage	50-01, ~~50-02~~
M11 Effluent Evaporator	50-257
M11 ~~Zero Liquid Discharge~~ Solar Evaporation ~~Tanks~~	TA-52
M11 NPDES Outfall #051	Mortandad Canyon
Transuranic:	
T1 Collection System	TA-50, TA-55
T2 Influent Storage	50-66
T3 Treatment	50-01
T4 Drum Tumbling	50-01
T5 Effluent Storage	50-01
Secondary Treatment:	
S1 Secondary Reverse Osmosis	50-01
S2 Rotary Vacuum Filter	50-01
S3 Bottoms Disposal	50-248

MAIN TREATMENT PROCESS

The main treatment process consists of influent collection and storage, the treatment of low-level RLW, and the discharge of treated water to the environment. ~~Treatment~~ Process steps include treatment with chemicals in a reaction tank ~~clarification~~, filtration, ion exchange, and reverse osmosis. Discharge to the environment is via NPDES Outfall #051, solar evaporation at the TA-52 Zero Liquid Discharge (ZLD) Solar Evaporation Tanks, or ~~mechanical~~ evaporation using natural gas at TA-50-257. Two secondary streams are generated by primary treatment, sludge and reverse osmosis concentrate; they are sent to the secondary treatment process.

M1. Radioactive Liquid Waste Collection System

The majority of RLW is transferred by direct pipeline between generator facilities and the RLWTF. The remaining RLW, typically less than 1,000 gallons per month, is transferred from small generators via truck. The pipeline system, installed in 1982, connects the TA-50 RLWTF to buildings in six TAs using approximately four miles of underground piping. Piping is essentially an underground pipeline within a pipeline. Primary piping is six- or eight-inch-diameter polyethylene encased within 10- or 12-inch polyethylene secondary piping. The primary piping transitions to stainless steel in each of the 62 underground valve stations (also referred to as vaults), then back to polyethylene. ~~Underground v~~Vaults are equipped with leak detection sensors that are linked electronically to the RLWTF control room.

M2. Influent Storage

Influent flows from vault 50-72 through an underground, double-walled pipe, into two influent storage tanks in ~~the neutralization tank (TK-13) in Room 16 of TA-50-01, and then beneath the RLWTF into the influent tanks at~~ the basement of the Waste Management and Risk Mitigation (WMRM) Facility (50-250) ~~building 50-02~~. ~~There are two influent tanks, an in-ground concrete vessel with a capacity of 75,000 gallons, and a 17,000-gallon steel vessel set within a below-grade concrete containment vault.~~ Both are fiberglass, and each has a capacity of 50,000 gallons. ~~Influent may also be stored in Structure 50-90, which is an above-ground steel vessel with secondary containment and a capacity of 100,000 gallons. Low-level influent may be subjected to pH adjustment and/or oxidation. Typically, sodium hydroxide (25% solution) is used to adjust the influent pH; chemicals such as sodium permanganate may be used for oxidation. These two steps may be carried out in the neutralization tank, or the chemicals may be added directly to the influent tanks.~~ Influent is fed to the low-level treatment process in Building 50-01 via another underground, double-walled pipe.

M3. Emergency Influent Storage

Building 50-250, the Waste Management and Risk Mitigation (WMRM) facility, is located about 50 meters southeast of Building 50-01. WMRM houses six ~~emergency~~ influent storage tanks with a capacity of 50,000 gallons each; four of these are held in reserve for use in emergency situations. ~~Low-level influent can be shunted to these fiberglass tanks at vault 50-72, upstream of the 17K and 75K influent storage~~

~~tanks.~~ WMRM is a steel frame structure designed to withstand seismic, wind, and snow load criteria. The concrete basement houses the two influent and six emergency storage tanks, and acts as secondary containment. Tanks would receive influent by gravity flow from WM-72.

M4. Reaction Tanks ~~Clarifiers~~

Influent is mixed with treatment chemicals in the reaction tanks, TK71 and TK72, to remove insoluble constituents, including more than 90% of the radioactivity. There are two reaction tanks. Both are above-grade, carbon-steel vessels, ~10,000 gallons each. Influent and chemicals enter from above; the tank mixer brings the streams into contact. Chemicals such as sodium hydroxide, ferric sulfate, and magnesium sulfate are typically added to adjust pH, precipitate metals, and promote particle growth. Contaminants precipitate as sludge, which is kept in suspension by the tank mixer. The sludge-water mixture is fed to the next treatment step, the microfilter. ~~The clarifier acts as the workhorse of the Main Treatment Plant, removing insoluble constituents, including more than 90% of the radioactivity. There are two concrete clarifiers. Each is 20 feet in diameter with a working volume of about 20,000 gallons, and each is designed to operate at 120 gallons per minute. Influent and chemicals enter from above through a flash mixer into a center well. (Chemicals such as ferric sulfate and magnesium sulfate are added at the clarifier, to promote particle growth and to adjust pH.) Contaminants precipitate as sludge, which settles to the bottom of the clarifier. Treated waters flow to the bottom of the center well, rise in the outer portion of the clarifier, and overflow to the gravity filter. Sludge is periodically removed to TK8 for subsequent treatment in the rotary vacuum filter.~~

M5. Microfilter ~~Gravity~~ Filter

From the reaction tanks, treated influent is pumped to a microfilter to separate sludge from water. The microfilter employs polyvinylidene fluoride, or PVDF, membranes to separate solids from water. The membranes can withstand pH ranges from 0-14, are non-plugging, and are chlorine resistant; they remove particles as small as 0.1 micron, and can handle feed streams with up to 5% solids. A fully automatic backpulse of air periodically sends a reverse flow of filtrate across the membrane, dislodging contaminants and moving solids to the sludge tank. A clean-in-place system enables the periodic cleaning of membranes using acids, bases, or bleach.

Filtrate from the microfilter is fed to TK9, and from TK9 to either perchlorate ion exchange orf the primary reverse osmosis unit. Sludge from the microfilter is periodically removed to TK8 for subsequent treatment in the rotary vacuum filter.

~~The dual-media gravity filter is used to remove suspended solids in overflow water from the clarifier. The gravity filter contains two filtration cells of 45 square feet each. The filter bed consists of layers of anthracite, sand, and gravel resting on an underdrain grate. Water flows by gravity into the top and exits at the bottom of the bed. Backwashing is needed periodically to remove solids and to reconstitute the~~

~~bed. When properly maintained and operated, the gravity filter removes particles down to 10 microns in size. The gravity filter is sized to process up to 250 gallons of water per minute.~~

M6. Pressure Filters

Three pressure media filters, which operate in parallel or singly, can be used to remove suspended solids in water in the reaction tanks ~~from either the clarifier or the gravity filter~~. Water is pumped from either ~~two feed tanks,~~ TK71 or ~~and~~ TK72, through the media in an enclosed steel vessel at a pressure of about 30 psig. ~~Feed tanks are above-grade, carbon-steel vessels, ~10,000 gallons each~~. Pressure filters are 30 inches in diameter and ~five feet high, and are constructed of carbon steel lined with plasite (an epoxy). The media in the pressure filter consists of coarse and fine sized particles of sand, garnet, coal, and gravel. Backwashing is needed periodically to remove solids and to reconstitute the bed. Each filter can process up to 50 gallons per minute.

M7. Perchlorate Ion Exchange

Ion-exchange columns located in Room 16 are used to remove perchlorates. Six of the 12 fiberglass reinforced plastic (FRP) ion exchange vessels are typically in service. Vessels range in size to nine cubic feet of ion exchange resin, and can treat up to 60 gallons of water per minute. The columns are installed downstream of TK9, and prior to treatment by the Reverse Osmosis. TK9 is a 9000-gallon, carbon-steel, above-grade vessel located in Room 61. Resins are not re-generated. Instead, columns are drained of water, then disposed as solid radioactive waste.

M8. Primary Reverse Osmosis

The Reverse Osmosis unit removes soluble contaminants, and produces a high quality effluent that approaches and sometimes meets EPA primary drinking water standards. The Reverse Osmosis unit uses commercially available high-rejection membranes, typically rated at nominal NaCl rejection of 90-99%. The unit has three 8-inch-diameter pressure vessels, and operates at pressures of about 400 psig. Each pressure vessel contains four membranes in series; each membrane is 40 inches in length. The Reverse Osmosis is a two-stage membrane unit; the third pressure vessel receives reject from the first two. Feed may first be pH-adjusted at the perchlorate ion exchange feed tank, TK-9. Permeate is sent to storage tanks in Room 34B; concentrate is ~~either recycled to the 75K influent storage tank, or~~ is processed through the secondary Reverse Osmosis unit. The primary Reverse Osmosis has a capacity up to 60 gallons per minute.

M9. Copper-Zinc Ion Exchange

NPDES Permit effluent limits for the discharge of treated water to NPDES Outfall #051 in Mortandad Canyon became more restrictive on 08-01-2010. As a result of acute aquatic life water quality standards being applied to ephemeral streams, discharge limits for copper and zinc were decreased to levels more than 2,000 times lower than EPA's secondary drinking water standards. In order to meet these new effluent limits, an ion exchange system was installed to polish permeate from the primary Reverse

Osmosis unit. The system consists of two banks; each bank has five 3.5-cubic foot fiberglass. The ion exchange system draws water from one of the Frac tanks that holds Reverse Osmosis permeate, pumps the water through one, or if needed, both ion exchange banks, and then into TK38. Resins are not re-generated. Instead, columns are drained of water, then disposed as solid radioactive waste.

M10. Effluent Storage

~~Five~~Three tanks are available for the storage of treated water. Two Frac tanks (north tank and south tank) receive permeate from the primary reverse osmosis unit. Frac tanks are horizontal carbon steel tanks located in Room 34B; each has a capacity of ~20,000 gallons. Water that receives post-Reverse Osmosis treatment (i.e., copper-zinc ion exchange) is collected in a 1000-gallon tank, TK38 in Room 38. TK38 is constructed of high-density polyethylene. ~~Two additional storage tanks (WM2-N and WM2-S) are located in Building 50-02. These are below grade concrete tanks with a nominal capacity of 25,000 gallons each.~~

M11. Discharge of Treated Water to the Environment

11a. Discharge Via ~~Mechanical~~ Effluent Evaporator ~~at TA-50-257~~ Using Natural Gas

Treated water may be discharged to the environment via an effluent ~~thermal~~ evaporator located outside Room 34 of Building 50-01. Water is heated using natural gas in a 4.5 million Btu/hr low NOx gas burner that can evaporate up to 400 gallons of water per hour. The unit is constructed of stainless steel, and has received a No Permit Required Determination from the NMED Air Quality Bureau.

11b. Discharge Via ~~Zero Liquid Discharge~~ Solar Evaporation ~~Tanks at TA52~~

Zero-Liquid-Discharge Solar Evaporation Tanks for solar evaporation of treated water are currently being constructed. The tanks are located on a site of approximately one acre, about two-thirds of a mile from the TA-50 RLWTF within TA-52 at LANL. The Zero Liquid Discharge Solar Evaporation Tanks have concrete walls approximately four feet high, and have a double liner with leak detection; each is approximately 70' x 250' in size, with a usable capacity of about 380,000 gallons. The pump house has the capability of returning the contents of the tanks to the TA-50 RLWTF for storage and retreatment, if necessary. Approximately 3500 feet of high-density polyethylene (HDPE) transfer piping connect the Zero Liquid Discharge Solar Evaporation Tanks and the TA-50 RLWTF.

11c. Discharge Via NPDES Outfall #051

Treated water that meets NPDES and DOE discharge standards can be discharged to the environment via NPDES Permitted Outfall #051 in Mortandad Canyon. Water is pumped to the outfall through approximately 1400 feet of three-inch-diameter, carbon steel pipe. NPDES samples are collected at TA-50 while water is discharging to the canyon.

TRANSURANIC TREATMENT PROCESS

Transuranic RLW treatment consists of influent collection and storage, treatment of the transuranic RLW, and sludge treatment. Treated water is not discharged; it either receives additional treatment (secondary reverse osmosis) or is sent to storage tanks in Building 50-248 for disposition as bottoms. Sludge from the treatment process is concentrated, solidified with cement, and shipped to the Waste Isolation Pilot Plant (WIPP) as a solid transuranic waste.

T1. Transuranic Collection System

The transuranic collection system runs from Building 55-04 through below-grade, double-contained transfer lines, through a valve pit ~~and vault~~ at 50-201, and into influent storage tanks at Building 50-66. One transfer line is dedicated for acid waste, and a second for caustic waste. Both are two-inch-diameter pipes. The acid waste lines are constructed of polyvinylidene fluoride (PVDF); the caustic lines are constructed of polypropylene (PP).

~~TRU wastewater is not freely drained to the RLWTF. Instead,~~ TA55 and RLWTF personnel coordinate batch wastewater transfers in advance. Once a transfer is coordinated, a batch of known volume, typically less than 100 gallons, is discharged through the system by gravity to the TRU influent storage tanks in Building 50-66. Transuranic influent is not trucked.

T2. Transuranic Influent Storage

Two influent storage tanks are located in Building 50-66, one for acid waste (~3900 gallons) and the other for caustic waste (~3000 gallons). Each tank has enough capacity to hold more than ~~two~~ one years of transuranic influent. Both tanks are cylindrical, cone-bottomed tanks, and each has a mixer~~,~~ and a HEPA-filtered vent. The sump in Building 50-66 has a leak detector that is linked to the RLWTF control room.

T3. Transuranic Treatment

Acid waste is pumped from Building 50-66 into TK1 in Room 60. The acid waste is neutralized by mixing it with liquid sodium hydroxide (nominal 25%). ~~C~~Other chemicals (ferric sulfate or polymer) may be added to promote particle growth. Solids that form in the neutralized waste settle, and are then pumped to the sludge tank, TK-7A. Clear liquid is pumped through a pressure filter into a receiving tank, TK3.

Caustic waste is pumped from Building 50-66 to Tank TK1 in Room 60, and then into the sludge-settling tank, TK-7A. The treated caustic waste is allowed to stand in the tank, which allows most of the solid particles to deposit on the bottom of the tank as sludge. In order to facilitate particle growth, TK-7A may be seeded with sludge left over from the previous treatment campaign. Chemicals (lime, ferric sulfate, or polymer) may also be added to TK-7A for this purpose.

T4. Transuranic Sludge

Sludge collects in TK-7A, a 900-gallon carbon-steel tank in Room 60. Excess water is decanted from TK-7A, then transferred to the effluent storage tank, TK3. The sludge itself is added to cement and sodium silicate, then tumbled and allowed to cure. After curing, drums of cemented sludge are transported to TA-54 to await shipment to and disposal at the Waste Isolation Pilot Plant as a solid transuranic waste.

T5. Transuranic Effluent

Effluent from the transuranic treatment process is collected in TK3 in Room 60, a 1000-gallon, horizontal fiberglass tank. Having been treated, effluent is no longer transuranic waste. The effluent either receives additional treatment (secondary reverse osmosis) or is sent to storage tanks in Building 50-248 for disposition as bottoms.

SECONDARY TREATMENT PROCESSES

The secondary treatment process treats wastes from the primary and transuranic treatment lines. It consists of a rotary vacuum filter to treat sludge from main process, secondary reverse osmosis to treat reverse osmosis concentrate from the main process and/or effluent from the transuranic process, and a bottoms disposal step. Wastes from the secondary treatment process are disposed as low-level radioactive solid waste.

S1. Secondary Reverse Osmosis

These two Reverse Osmosis units, each with a capacity of up to five gallons per minute, recover much of the concentrate from the primary Reverse Osmosis unit, thereby reducing the volume of bottoms that must be disposed of. Effluent from the transuranic process may also be treated. Secondary Reverse Osmosis units use commercially available high-rejection membranes, typically rated at nominal NaCl rejection of 90-99%. The units have two 4-inch-diameter pressure vessels, and operate at pressures of about ~~3~~200 psig. Each pressure vessel has a single membrane 40 inches in length. They are two-stage membrane units; the second pressure vessel receives reject from the first. Concentrate from the primary Reverse Osmosis unit is collected in TK73 (3700 gallons, lined steel), then fed to a smaller feed tank (300 gallons, polyethylene) in Room 24, adjacent to the secondary Reverse Osmosis (SRO) units. Permeate from the SRO is sent to the feed tank for the perchlorate ion exchange system (TK9), for re-treatment through the MTP. Reject is sent to storage tanks in Building 50-248 to await shipment as bottoms.

S2. Rotary Vacuum Filter

Solids ~~that settle to the bottom of the MTP clarifier~~ frm the microfilter (or pressure filters) are separated from water and then disposed as low-level radioactive solid waste. This sludge treatment operation includes the TK8 storage tank (capacity of 8,000 gallons) in Room 61 and the rotary vacuum filter in

Room 116. Low-level sludge contains more than 90% of the radioactivity present in low-level influent; it does not contain hazardous chemical constituents above RCRA limits, and is not a mixed waste.

S3. Bottoms ~~Disposal~~Storage

RLWTF bottoms are stored in tanks in Building 50-248 until shipped to a commercial waste treatment facility using a commercial tanker truck; shipments typically range from 4,000 to 5,000 gallons each. The commercial waste treatment facility processes bottoms to a solid form, and disposes of the solids as low-level radioactive waste at a Department of Energy or commercial disposal site.

Table 2: Vessel Information for RLWTF Treatment Units

Unit Operation	Vessel	Capacity (gallons)	Material	Above (A) Below (B)	Secondary Containment	Note
Main Treatment:						
M1 Collection System	Piping	----	Polyethylene	B	Polyethylene	
	Vaults (62)	----	Concrete	B	----	x
M2 Influent Storage	~~W5~~WMRM Tanks (2)	50,000	Fiberglass	B	Concrete	~~z~~
	~~TK13~~	~~400~~	~~Stainless Steel~~			
	~~W6~~	~~50,000~~	~~Fiberglass~~	~~B~~	~~Concrete~~	
	~~17K tank~~	~~17,000~~	~~Steel~~			
	~~75K tank~~	~~75,000~~	~~Concrete~~	B	----	
	~~100K tank~~	~~100,000~~	~~Steel~~	A	Concrete	
M3 Emergency Influent Storage	WMRM tanks (~~4~~ 6)	50,000	Fiberglass	B	Concrete	z
M4 Reaction Tanks	TK71, TK72	10,000	Steel	A	Concrete-w	~~v,~~ z
~~Clarifiers~~	~~Clarifiers (2)~~	~~26,000~~	~~Concrete~~			
M5 Microfilter	Filter	40	Steel	A	Concrete-w	
~~Gravity Filter~~	Sludge tank	500	Polyethylene	A	Concrete-w	
	Cleaning tanks	200	Polyethylene	A	Concrete-w	z,
	~~Gravity Filter~~	~~7,000~~	~~Concrete~~	~~A~~	~~Concrete~~	v
M6 Pressure Filters	Filters (3)	100	Lined Steel	A	Concrete-w	z
	TK71, TK72	10,000	Steel	A	Concrete-w	z
M7 Perchlorate Ion Exchange	Ion Exchange Vessels(12)	50	Fiberglass	A	Concrete-w	z
	TK09	10,000	Steel	A	Concrete-w	
M8 Primary Reverse Osmosis	RO Vessel	40	Steel	A	Concrete-w	
M9 ~~Polishing~~ Cu-Zn Ion Exchange	Ion Exchange Columns (10)	200	Fiberglass	A	Concrete-w	
M10 Effluent Storage	N. Frac, S. Frac	20,000	Steel	A	Concrete-w	z
	TK-38	1,000	HDPE	A	Concrete-w	
	~~WM2-N, WM2-S~~	~~25,000~~	~~Concrete~~	~~B~~	~~—~~	~~z~~
M11 Effluent Evaporator	—	1,200	Stainless Steel	A	Hypalon, Asphalt	
M11 Solar Evaporation ~~at TA-52~~	E. Tank, W. Tank	380,000	HDPE	A	HDPE, Concrete	z
M12 NPDES Outfall #051	—	—	—	B	—	y

Notes:

v: Two concrete bottom slabs, with compacted tuff between.
w: Floor of Building 50-01, with floor drains, provides secondary containment.
x: Vaults provide secondary containment.
y: Pipe is below grade; the outfall is at the surface.
z: Capacity is for each vessel.

Table 2: Vessel Information for RLWTF Treatment Units (Continued)

Unit Operation	Vessel	Capacity (gallons)	Material	Above (A) Below (B)	Secondary Containment	Note
Transuranic:						
T1 Collection System	Piping	----	PVDF , PP	B	PVDF, PP	
T2 Influent Storage	Acid Tank	3,900	Steel	B	Concrete	
	Caustic Tank	3,000	Steel	B	Concrete	
T3 Treatment	TK1	900	Steel	A	Concrete-w	
	TK2	800	Fiberglass	A	Concrete-w	
T4 Drum Tumbling	TK-7A	900	Steel	A	Concrete-w	
T5 Effluent Storage	TK3	1,000	Fiberglass	A	Concrete-w	
Secondary Treatment:						
S1 Secondary Reverse Osmosis	RO Vessel	10	Fiberglass	A	Concrete-w	
	~~TK2401~~ TK25	300	Polyethylene	A	Concrete-w	
	TK73	3,700	Steel	A	Concrete-w	
S2 Rotary Vacuum Filter	Rotary Vacuum Filter	900	Stainless Steel	A	Concrete-w	
	TK8	8,000	Steel	A	Concrete-w	
S3 Bottoms Storage	TK-NE, SE, SW, NW	20,000	Steel	A	Concrete	z
	3K tank	3,000	Steel	A	Concrete	
	17k tank	17,000	Steel	A	Concrete	

Notes:

w: Floor of Building 50-01, with floor drains, provides secondary containment.

Z: Capacity is for each vessel.

Appendix B – TA-50 RLWTF Processes and Units

The Radioactive Liquid Waste Treatment Facility (RLWTF) consists of: (a) an underground collection system that conveys water to Technical Area (TA) 50 from generators at LANL, (b) structures at TA-50, and (c) the Zero Liquid Discharge Solar Evaporation Tanks at TA-52. At TA- 50, Building 50-01 is the primary structure; it houses treatment equipment, process tanks, analytical laboratories, and offices. Adjacent TA-50 structures primarily provide for additional water storage: 50-66 (influent), 50-248 (secondary waters), and 50-250 (influent and emergency).

The RLWTF receives and treats radioactive liquid waste (RLW) from generators at Los Alamos National Laboratory. RLW includes small volumes, less than one percent of total influent, that are also characteristically hazardous for corrosivity, which are treated using elementary neutralization. The RLWTF has (1) a main treatment process for low-level RLW, (2) a process for treating transuranic RLW, and (3) a secondary treatment process for waste streams from both the low-level and transuranic processes. The units within each of these process lines are summarized in Table 1 and described in the paragraphs that follow. Table 2 provides additional information for each unit operation, including location, treatment and storage vessels, construction materials, and sizes.

Table 1: Summary of RLWTF Treatment Units

Unit Operation	Location
Main Treatment:	
M1 Collection System	TA-03, 35, 48, 50, 55, 59
M2 Influent Storage	TA-50-250
M3 Emergency Influent Storage	50-250
M4 Reaction Tanks	50-01
M5 Microfilter	50-01
M6 Pressure Filters	50-01
M7 Perchlorate Ion Exchange	50-01
M8 Primary Reverse Osmosis	50-01
M9 Cu-Zn Ion Exchange	50-01
M10 Effluent Storage	50-01,
M11 Effluent Evaporator	50-257
M11 Solar Evaporation	TA-52
M11 NPDES Outfall #051	Mortandad Canyon
Transuranic:	
T1 Collection System	TA-50, TA-55
T2 Influent Storage	50-66
T3 Treatment	50-01
T4 Drum Tumbling	50-01
T5 Effluent Storage	50-01
Secondary Treatment:	
S1 Secondary Reverse Osmosis	50-01
S2 Rotary Vacuum Filter	50-01
S3 Bottoms Disposal	50-248

MAIN TREATMENT PROCESS

The main treatment process consists of influent collection and storage, the treatment of low-level RLW, and the discharge of treated water to the environment. Process steps include treatment with chemicals in a reaction tank, filtration, ion exchange, and reverse osmosis. Discharge to the environment is via NPDES Outfall #051, solar evaporation at the TA-52 Zero Liquid Discharge (ZLD) Solar Evaporation Tanks, or evaporation using natural gas at TA-50-257. Two secondary streams are generated by primary treatment, sludge and reverse osmosis concentrate; they are sent to the secondary treatment process.

M1. Radioactive Liquid Waste Collection System

The majority of RLW is transferred by direct pipeline between generator facilities and the RLWTF. The remaining RLW, typically less than 1,000 gallons per month, is transferred from small generators via truck. The pipeline system, installed in 1982, connects the TA-50 RLWTF to buildings in six TAs using approximately four miles of underground piping. Piping is essentially an underground pipeline within a pipeline. Primary piping is six- or eight-inch-diameter polyethylene encased within 10- or 12-inch polyethylene secondary piping. The primary piping transitions to stainless steel in each of the 62 underground valve stations (also referred to as vaults), then back to polyethylene. Vaults are equipped with leak detection sensors that are linked electronically to the RLWTF control room.

M2. Influent Storage

Influent flows from vault 50-72 through an underground, double-walled pipe, into two influent storage tanks in the basement of the Waste Management and Risk Mitigation (WMRM) Facility (50-250). Both are fiberglass, and each has a capacity of 50,000 gallons. Influent is fed to the low-level treatment process in Building 50-01 via another underground, double-walled pipe.

M3. Emergency Influent Storage

Building 50-250, the Waste Management and Risk Mitigation (WMRM) facility, is located about 50 meters southeast of Building 50-01. WMRM houses six influent storage tanks with a capacity of 50,000 gallons each; four of these are held in reserve for use in emergency situations. WMRM is a steel frame structure designed to withstand seismic, wind, and snow load criteria. The concrete basement houses the two influent and six emergency storage tanks, and acts as secondary containment. Tanks would receive influent by gravity flow from WM-72.

M4. Reaction Tanks

Influent is mixed with treatment chemicals in the reaction tanks, TK71 and TK72, to remove insoluble constituents, including more than 90% of the radioactivity. There are two reaction tanks. Both are above-grade, carbon-steel vessels, ~10,000 gallons each. Influent and chemicals enter from above; the tank mixer brings the streams into contact. Chemicals such as sodium hydroxide, ferric sulfate, and magnesium sulfate are typically added to adjust pH, precipitate metals, and promote particle growth. Contaminants precipitate as sludge, which is kept in suspension by the tank mixer. The sludge-water mixture is fed to the next treatment step, the microfilter.

M5. Microfilter Filter

From the reaction tanks, treated influent is pumped to a microfilter to separate sludge from water. The microfilter employs polyvinylidene fluoride, or PVDF, membranes to separate solids from water. The membranes can withstand pH ranges from 0-14, are non-plugging, and are chlorine resistant; they remove particles as small as 0.1 micron, and can handle feed streams with up to 5% solids. A fully automatic backpulse of air periodically sends a reverse flow of filtrate across the membrane, dislodging contaminants and moving solids to the sludge tank. A clean-in-place system enables the periodic cleaning of membranes using acids, bases, or bleach.

Filtrate from the microfilter is fed to TK9, and then from TK9 to either perchlorate ion exchange or the primary reverse osmosis unit. Sludge from the microfilter is periodically removed to TK8 for subsequent treatment in the rotary vacuum filter.

M6. Pressure Filters

Three pressure media filters, which operate in parallel or singly, can be used to remove suspended solids in water in the reaction tanks. Water is pumped from either TK71 or TK72, through the media in an enclosed steel vessel at a pressure of about 30 psig. Pressure filters are 30 inches in diameter and ~five feet high, and are constructed of carbon steel lined with plasite (an epoxy). The media in the pressure filter consists of coarse and fine sized particles of sand, garnet, coal, and gravel. Backwashing is needed periodically to remove solids and to reconstitute the bed. Each filter can process up to 50 gallons per minute.

M7. Perchlorate Ion Exchange

Ion-exchange columns located in Room 16 are used to remove perchlorates. Six of the 12 fiberglass reinforced plastic (FRP) ion exchange vessels are typically in service. Vessels range in size to nine cubic feet of ion exchange resin, and can treat up to 60 gallons of water per minute. The columns are installed downstream of TK9, and prior to treatment by the Reverse Osmosis. TK9 is a 9000-gallon, carbon-steel, above-grade vessel located in Room 61. Resins are not re-generated. Instead, columns are drained of water, then disposed as solid radioactive waste.

M8. Primary Reverse Osmosis

The Reverse Osmosis unit removes soluble contaminants, and produces a high quality effluent that approaches and sometimes meets EPA primary drinking water standards. The Reverse Osmosis unit uses commercially available high-rejection membranes, typically rated at nominal NaCl rejection of 90-99%. The unit has three 8-inch-diameter pressure vessels, and operates at pressures of about 400 psig. Each pressure vessel contains four membranes in series; each membrane is 40 inches in length. The Reverse Osmosis is a two-stage membrane unit; the third pressure vessel receives reject from the first two. Feed may first be pH-adjusted at the perchlorate ion exchange feed tank, TK-9. Permeate is sent to storage tanks in Room 34B; concentrate is processed through the secondary Reverse Osmosis (SRO) unit. The primary Reverse Osmosis has a capacity up to 60 gallons per minute.

M9. Copper-Zinc Ion Exchange

NPDES Permit effluent limits for the discharge of treated water to NPDES Outfall #051 in Mortandad Canyon became more restrictive on 08-01-2010. As a result of acute aquatic life water quality standards being applied to ephemeral streams, discharge limits for copper and zinc were decreased to levels more than 2,000 times lower than EPA's secondary drinking water standards. In order to meet these new effluent limits, an ion exchange system was installed to polish permeate from the primary Reverse Osmosis unit. The system consists of two banks; each bank has five 3.5-cubic foot fiberglass. The ion exchange system draws water from one of the Frac tanks that holds Reverse Osmosis permeate, pumps the water through one, or if needed, both ion exchange banks, and then into TK38. Resins are not re-generated. Instead, columns are drained of water, then disposed as solid radioactive waste.

M10. Effluent Storage

Three tanks are available for the storage of treated water. Two Frac tanks (north tank and south tank) receive permeate from the primary reverse osmosis unit. Frac tanks are horizontal carbon steel tanks located in Room 34B; each has a capacity of ~20,000 gallons. Water that receives post-Reverse Osmosis treatment (i.e., copper-zinc ion exchange) is collected in a 1000-gallon tank, TK38 in Room 38. TK38 is constructed of high-density polyethylene.

M11. Discharge of Treated Water to the Environment

11a. Discharge Via Effluent Evaporator Using Natural Gas

Treated water may be discharged to the environment via an effluent evaporator located outside Room 34 of Building 50-01. Water is heated using natural gas in a 4.5 million Btu/hr low NOx gas burner that can evaporate up to 400 gallons of water per hour. The unit is constructed of stainless steel, and has received a No Permit Required Determination from the NMED Air Quality Bureau.

11b. Discharge Via Solar Evaporation

Zero-Liquid-Discharge Solar Evaporation Tanks for solar evaporation of treated water are currently being constructed. The tanks are located on a site of approximately one acre, about two-thirds of a mile from the TA-50 RLWTF within TA-52 at LANL. The Zero Liquid Discharge Solar Evaporation Tanks have concrete walls approximately four feet high, and have a double liner with leak detection; each is approximately 70' x 250' in size, with a usable capacity of about 380,000 gallons. The pump house has the capability of returning the contents of the tanks to the TA-50 RLWTF for storage and retreatment, if necessary. Approximately 3500 feet of high-density polyethylene (HDPE) transfer piping connect the Zero Liquid Discharge Solar Evaporation Tanks and the TA-50 RLWTF.

11c. Discharge Via NPDES Outfall #051

Treated water that meets NPDES and DOE discharge standards can be discharged to the environment via NPDES Permitted Outfall #051 in Mortandad Canyon. Water is pumped to the outfall through approximately 1400 feet of three-inch-diameter, carbon steel pipe. NPDES samples are collected at TA-50 while water is discharging to the canyon.

TRANSURANIC TREATMENT PROCESS

Transuranic RLW treatment consists of influent collection and storage, treatment of the transuranic RLW, and sludge treatment. Treated water is not discharged; it either receives additional treatment (secondary reverse osmosis) or is sent to storage tanks in Building 50-248 for disposition as bottoms. Sludge from the treatment process is concentrated, solidified with cement, and shipped to the Waste Isolation Pilot Plant (WIPP) as a solid transuranic waste.

T1. Transuranic Collection System

The transuranic collection system runs from Building 55-04 through below-grade, double-contained transfer lines, through a valve pit at 50-201, and into influent storage tanks at Building 50-66. One transfer line is dedicated for acid waste, and a second for caustic waste. Both are two-inch-diameter pipes. The acid waste lines are constructed of polyvinylidene fluoride (PVDF); the caustic lines are constructed of polypropylene (PP).

TA55 and RLWTF personnel coordinate batch wastewater transfers in advance. Once a transfer is coordinated, a batch of known volume, typically less than 100 gallons, is discharged through the system by gravity to the TRU influent storage tanks in Building 50-66. Transuranic influent is not trucked.

T2. Transuranic Influent Storage

Two influent storage tanks are located in Building 50-66, one for acid waste (~3900 gallons) and the other for caustic waste (~3000 gallons). Each tank has enough capacity to hold more than one year of transuranic influent. Both tanks are cylindrical, cone-bottomed tanks, and each has a mixer and a HEPA-filtered vent. The sump in Building 50-66 has a leak detector that is linked to the RLWTF control room.

T3. Transuranic Treatment

Acid waste is pumped from Building 50-66 into TK1 in Room 60. The acid waste is neutralized by mixing it with liquid sodium hydroxide (nominal 25%). Other chemicals (ferric sulfate or polymer) may be added to promote particle growth. Solids that form in the neutralized waste settle, and are then pumped to the sludge tank, TK-7A. Clear liquid is pumped through a pressure filter into a receiving tank, TK3.

Caustic waste is pumped from Building 50-66 to Tank TK1 in Room 60, and then into the sludge-settling tank, TK-7A. The treated caustic waste is allowed to stand in the tank, which allows most of the solid particles to deposit on the bottom of the tank as sludge. In order to facilitate particle growth, TK-7A may

be seeded with sludge left over from the previous treatment campaign. Chemicals (lime, ferric sulfate, or polymer) may also be added to TK-7A for this purpose.

T4. Transuranic Sludge

Sludge collects in TK-7A, a 900-gallon carbon-steel tank in Room 60. Excess water is decanted from TK-7A, then transferred to the effluent storage tank, TK3. The sludge itself is added to cement and sodium silicate, then tumbled and allowed to cure. After curing, drums of cemented sludge are transported to TA-54 to await shipment to and disposal at the Waste Isolation Pilot Plant as a solid transuranic waste.

T5. Transuranic Effluent

Effluent from the transuranic treatment process is collected in TK3 in Room 60, a 1000-gallon, horizontal fiberglass tank. Having been treated, effluent is no longer transuranic waste. The effluent either receives additional treatment (secondary reverse osmosis) or is sent to storage tanks in Building 50-248 for disposition as bottoms.

SECONDARY TREATMENT PROCESSES

The secondary treatment process treats wastes from the primary and transuranic treatment lines. It consists of a rotary vacuum filter to treat sludge from main process, secondary reverse osmosis to treat reverse osmosis concentrate from the main process and/or effluent from the transuranic process, and a bottoms disposal step. Wastes from the secondary treatment process are disposed as low-level radioactive solid waste.

S1. Secondary Reverse Osmosis

These two Reverse Osmosis units, each with a capacity of up to five gallons per minute, recover much of the concentrate from the primary Reverse Osmosis unit, thereby reducing the volume of bottoms that must be disposed of. Effluent from the transuranic process may also be treated. Secondary Reverse Osmosis units use commercially available high-rejection membranes, typically rated at nominal NaCl rejection of 90-99%. The units have two 4-inch-diameter pressure vessels, and operate at pressures of about 200 psig. Each pressure vessel has a single membrane 40 inches in length. They are two-stage membrane units; the second pressure vessel receives reject from the first. Concentrate from the primary Reverse Osmosis unit is collected in TK73 (3700 gallons, lined steel), then fed to a smaller feed tank (300 gallons, polyethylene) in Room 24, adjacent to the secondary Reverse Osmosis (SRO) units. Permeate

from the SRO is sent to the feed tank for the perchlorate ion exchange system (TK9), for re-treatment through the MTP. Reject is sent to storage tanks in Building 50-248 to await shipment as bottoms.

S2. Rotary Vacuum Filter

Solids from the microfilter (or pressure filters) are separated from water and then disposed as low-level radioactive solid waste. This sludge treatment operation includes the TK8 storage tank (capacity of 8,000 gallons) in Room 61 and the rotary vacuum filter in Room 116. Low-level sludge contains more than 90% of the radioactivity present in low-level influent; it does not contain hazardous chemical constituents above RCRA limits, and is not a mixed waste.

S3. Bottoms Storage

RLWTF bottoms are stored in tanks in Building 50-248 until shipped to a commercial waste treatment facility using a commercial tanker truck; shipments typically range from 4,000 to 5,000 gallons each. The commercial waste treatment facility processes bottoms to a solid form, and disposes of the solids as low-level radioactive waste at a Department of Energy or commercial disposal site.

Table 2: Vessel Information for RLWTF Treatment Units

Unit Operation	Vessel	Capacity (gallons)	Material	Above (A) Below (B)	Secondary Containment	Note
Main Treatment:						
M1 Collection System	Piping	---	Polyethylene	B	Polyethylene	
	Vaults (62)	---	Concrete	B	---	x
M2 Influent Storage	WMRM Tanks (2)	50,000	Fiberglass	B	Concrete	z
M3 Emergency Influent Storage	WMRM tanks (4)	50,000	Fiberglass	B	Concrete	z
M4 Reaction Tanks	TK71, TK72	10,000	Steel	A	Concrete-w	z
M5 Microfilter	Filter	40	Steel	A	Concrete-w	
	Sludge tank	500	Polyethylene	A	Concrete-w	
	Cleaning tanks	200	Polyethylene	A	Concrete-w	z
M6 Pressure Filters	Filters (3)	100	Lined Steel	A	Concrete-w	z
	TK71, TK72	10,000	Steel	A	Concrete-w	z
M7 Perchlorate Ion Exchange	Ion Exchange Vessels (12)	50	Fiberglass	A	Concrete-w	z
	TK09	10,000	Steel	A	Concrete-w	
M8 Primary Reverse Osmosis	RO Vessel	40	Steel	A	Concrete-w	
M9 Cu-Zn Ion Exchange	Ion Exchange Columns (10)	200	Fiberglass	A	Concrete-w	
M10 Effluent Storage	N. Frac, S. Frac	20,000	Steel	A	Concrete-w	z
	TK-38	1,000	HDPE	A	Concrete-w	
M11 Effluent Evaporator	---	1,200	Stainless Steel	A	Hypalon, Asphalt	
M11 Solar Evaporation	E. Tank, W. Tank	380,000	HDPE	A	HDPE, Concrete	z
M12 NPDES Outfall #051	---	---	---	B	---	y

Notes:

v: Two concrete bottom slabs, with compacted tuff between.
w: Floor of Building 50-01, with floor drains, provides secondary containment.
x: Vaults provide secondary containment.
y: Pipe is below grade; the outfall is at the surface.
z: Capacity is for each vessel.

Table 2: Vessel Information for RLWTF Treatment Units (Continued)

Unit Operation	Vessel	Capacity (gallons)	Material	Above (A) Bellow (B)	Secondary Containment	Note
Transuranic:						
T1 Collection System	Piping	----	PVDF , PP	B	PVDF, PP	
T2 Influent Storage	Acid Tank	3,900	Steel	B	Concrete	
	Caustic Tank	3,000	Steel	B	Concrete	
T3 Treatment	TK1	900	Steel	A	Concrete-w	
	TK2	800	Fiberglass	A	Concrete-w	
T4 Drum Tumbling	TK-7A	900	Steel	A	Concrete-w	
T5 Effluent Storage	TK3	1,000	Fiberglass	A	Concrete-w	
Secondary Treatment:						
S1 Secondary Reverse Osmosis	RO Vessel	10	Fiberglass	A	Concrete-w	
	TK25	300	Polyethylene	A	Concrete-w	
	TK73	3,700	Steel	A	Concrete-w	
S2 Rotary Vacuum Filter	Rotary Vacuum Filter	900	Stainless Steel	A	Concrete-w	
	TK8	8,000	Steel	A	Concrete-w	
S3 Bottoms Storage	TK-NE, SE, SW, NW	20,000	Steel	A	Concrete	z
	3K tank	3,000	Steel	A	Concrete	
	17k tank	17,000	Steel	A	Concrete	

Notes:

w: Floor of Building 50-01, with floor drains, provides secondary containment.

Z: Capacity is for each vessel.

ENCLOSURE 4

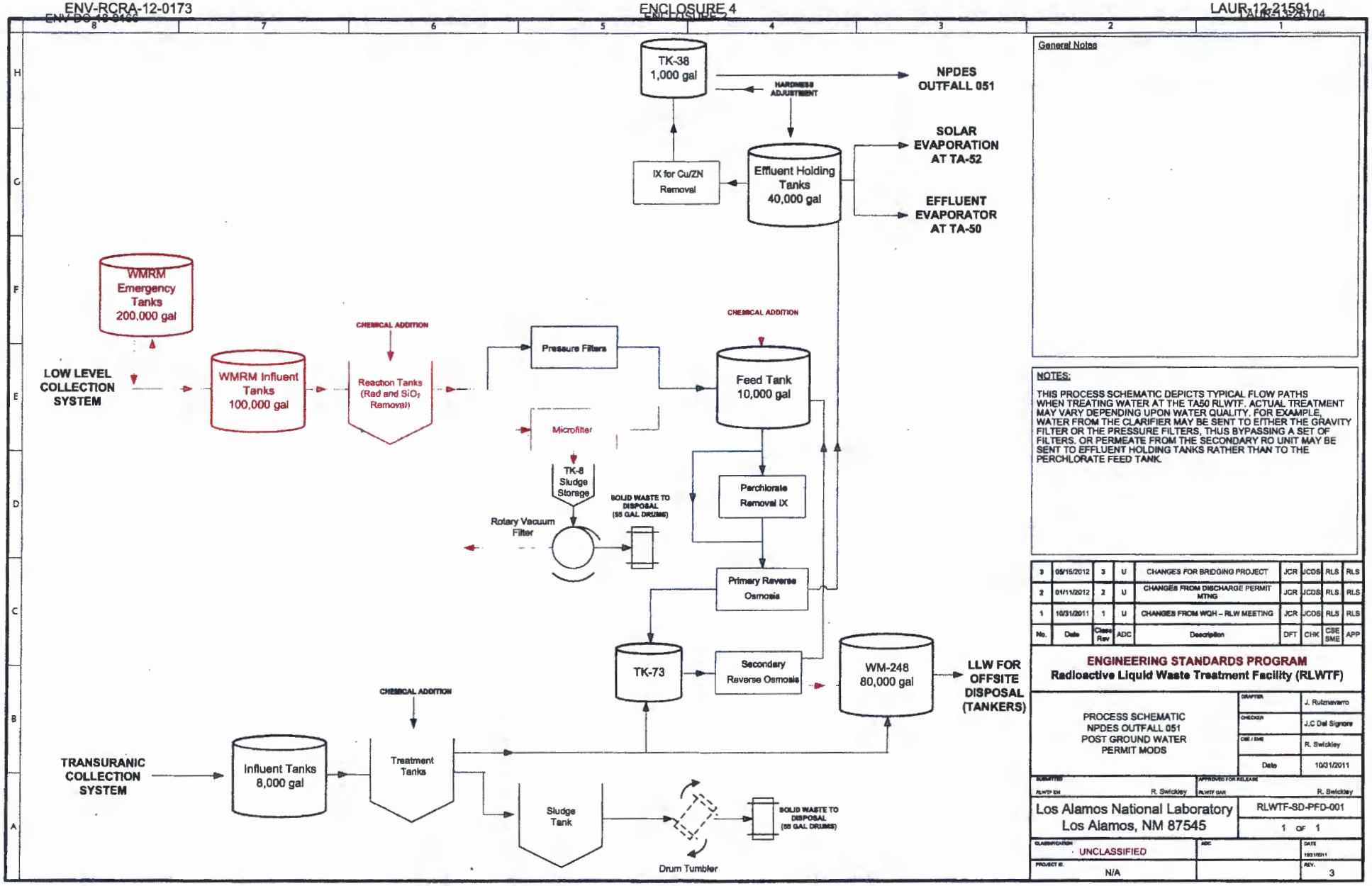
Supplemental Information, DP-1132 Application

Revised Process Schematic—Appendix B

ENV-RCRA-12-0173

LAUR-12-21591

Date: AUG 1 0 2012



General Notes

NOTES:

THIS PROCESS SCHEMATIC DEPICTS TYPICAL FLOW PATHS WHEN TREATING WATER AT THE TA50 RLWTF. ACTUAL TREATMENT MAY VARY DEPENDING UPON WATER QUALITY. FOR EXAMPLE, WATER FROM THE CLARIFIER MAY BE SENT TO EITHER THE GRAVITY FILTER OR THE PRESSURE FILTERS, THUS BYPASSING A SET OF FILTERS. OR PERMEATE FROM THE SECONDARY RO UNIT MAY BE SENT TO EFFLUENT HOLDING TANKS RATHER THAN TO THE PERCHLORATE FEED TANK.

No.	Date	Class Rev	ADC	Description	DFT	CHK	CSE SME	APP
3	05/15/2012	3	U	CHANGES FOR BRIDGING PROJECT	JCR	JCDS	RLS	RLS
2	01/11/2012	2	U	CHANGES FROM DISCHARGE PERMIT MTNG	JCR	JCDS	RLS	RLS
1	10/31/2011	1	U	CHANGES FROM WQH – RLW MEETING	JCR	JCDS	RLS	RLS

ENGINEERING STANDARDS PROGRAM
Radioactive Liquid Waste Treatment Facility (RLWTF)

PROCESS SCHEMATIC
NPDES OUTFALL 051
POST GROUND WATER
PERMIT MODS

DRAFTER	J. Ruiznavarro
CHECKER	J.C Del Signore
CSE / SME	R. Swickley
Date	10/31/2011

SUBMITTED RLWTF EM: R. Swickley
APPROVED FOR RELEASE RLWTF GAR: R. Swickley

Los Alamos National Laboratory
Los Alamos, NM 87545

RLWTF-SD-PFD-001
1 OF 1

CLASSIFICATION: UNCLASSIFIED
ADC:
DATE: 10/31/2011
PROJECT ID: N/A
REV: 3

ENCLOSURE 5

Supplemental Information, DP-1132 Application

Revised Scaled Floor Plan—Appendix B

ENV-RCRA-12-0173

LAUR-12-21591

Date: AUG 1 0 2012

ENV-DO-13-0166

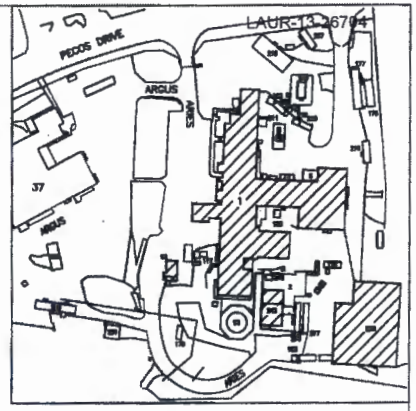
ENV-RCRA-12-0173

LAUR-12-21591

ENCLOSURE 5

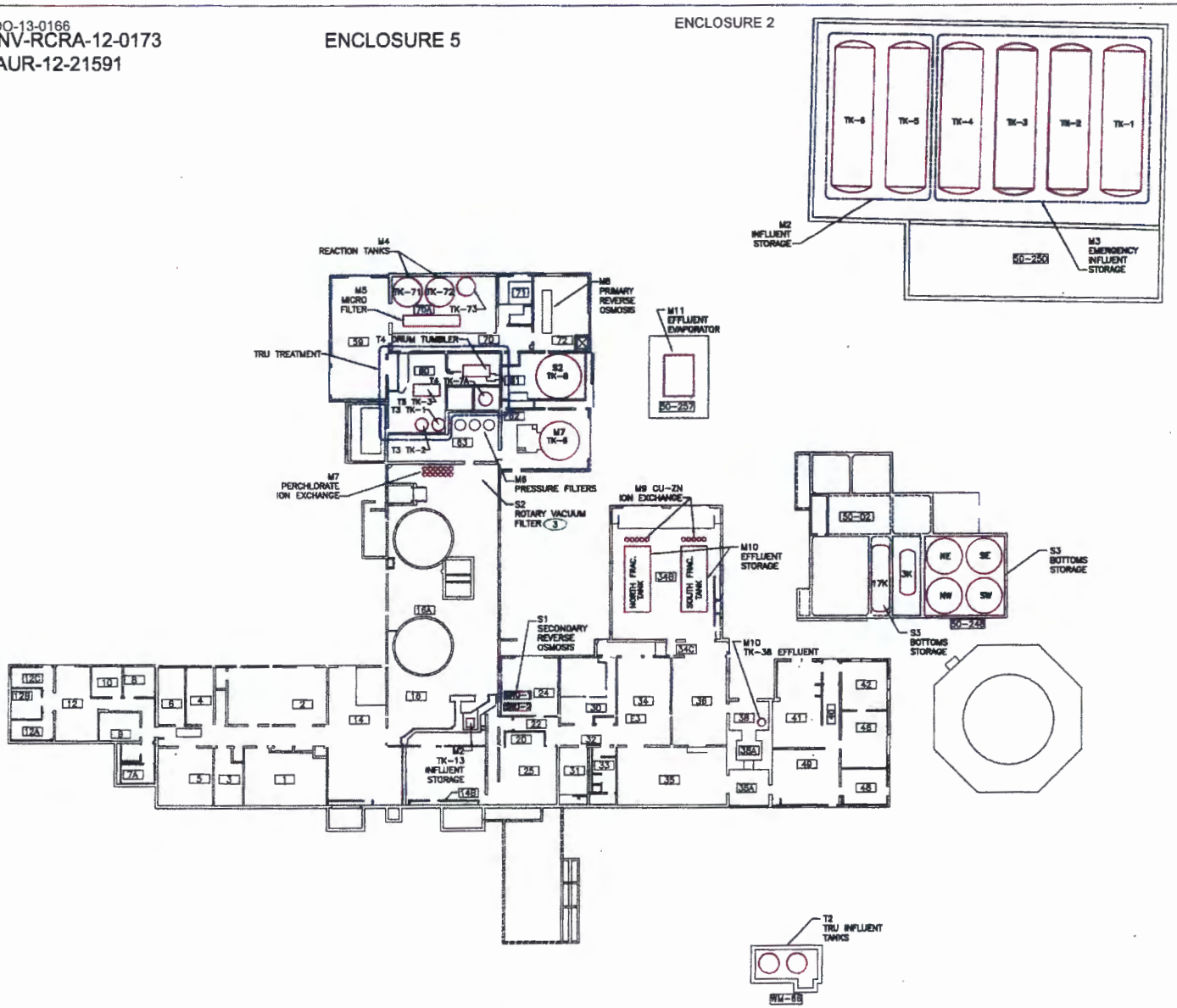
ENCLOSURE 2

LAUR-13-26704



LOCATION PLAN

SCALE: NONE



RLWTF TREATMENT UNITS

SCALE: 1/8" = 4'-4" (1)

GENERAL NOTES

1. IF THIS SHEET IS NOT 11X17, THEN IT IS A REDUCED OR ENLARGED SIZE PLOT. USE INDICATED SCALE ACCORDINGLY.

KEYED NOTES

(1) SCALE APPLIES TO BUILDING STRUCTURES AND RELATIVE BUILDING LOCATIONS WITHIN THE SITE. DEPICTED SIZE OF TREATMENT UNITS AND STORAGE TANKS ARE FOR REFERENCE ONLY.

(2) TREATMENT UNIT NOT SHOWN ON SKETCH.

(3) ROTARY VACUUM FILTER LOCATED THIS AREA SOUTH-EAST CORNER RM. 116A

	RLWTF TREATMENT UNITS	
(2)	M1	COLLECTION SYSTEM
	M2	INFLUENT STORAGE
	M3	EMERGENCY INFLUENT STORAGE
	M4	REACTION TANKS
	M5	MICRO FILTER
	M6	PRESSURE FILTERS
	M7	PERCHLORATE ION EXCHANGE
	M8	PRIMARY REVERSE OSMOSIS
	M9	COPPER ZINC ION EXCHANGE
	M10	EFFLUENT STORAGE
	M11	EFFLUENT EVAPORATOR
(2)	M11	SOLAR EVAPORATION
(2)	M11	NPDES OUTFALL #051
(2)	T1	TRU COLLECTION SYSTEM
	T2	TRU INFLUENT STORAGE
	T3	TRU TREATMENT
	T4	TRU SLUDGE
	T5	TRU EFFLUENT
	S1	SECONDARY REVERSE OSMOSIS
(3)	S2	ROTARY VACUUM FILTER
	S3	BOTTOMS STORAGE

09560 :

ENV-DO-13-0166 ENCLOSURE 2 LAUR-13-26704

Los Alamos NATIONAL LABORATORY EST. 1943

COPY

Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, K490
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National Nuclear Security Administration
Los Alamos Site Office, A316
3747 West Jemez Road
Los Alamos, New Mexico 87545
(505) 667-5794/FAX (505) 667-5948

Date: AUG 10 2012
Refer To: ENV-RCRA-12-0173
LAUR: 12-21591

GROUND WATER
AUG 10 2012
BUREAU

Mr. Jerry Schoeppner, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Mr. Schoeppner:

SUBJECT: SUPPLEMENTAL INFORMATION FOR DISCHARGE PERMIT APPLICATION DP-1132, RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (RLWTF) AND ZERO LIQUID DISCHARGE (ZLD) SOLAR EVAPORATION TANKS

On November 18, 2011, the New Mexico Environment Department (NMED) notified the U. S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) that a comprehensive, up-to-date application was required to issue Discharge Permit (DP)-1132 for the Technical Area 50 (TA-50) Radioactive Liquid Waste Treatment Facility and the TA-52 Zero Liquid Discharge Solar Evaporation Tanks. A Discharge Permit application (ENV-DO-12-0005) and supplement (ENV-DO-12-0019) were submitted to NMED by DOE/LANS on February 16, 2012, and April 2, 2012, respectively. After the above-referenced application and supplement were submitted, DOE/LANS confirmed that they could replace seven vessels at the TA-50 RLWTF with two new storage tank systems with leak detection capability located at the TA-50 Waste Mitigation and Risk Management (WMRM) Facility. This significant and improved change requires DOE/LANS to submit the enclosed supplement and modification to its existing permit application.

09565

DP-1132
Blue File

Fullam, Jennifer, NMENV

From: Beers, Bob <bbeers@lanl.gov>
Sent: Wednesday, October 16, 2013 2:52 PM
To: Fullam, Jennifer, NMENV
Subject: RE: Draft Discharge Permit DP-1132_MS Word Version

Thanks

From: Fullam, Jennifer, NMENV [mailto:Jennifer.Fullam@state.nm.us]
Sent: Wednesday, October 16, 2013 1:26 PM
To: Beers, Bob
Cc: Saladen, Michael T; Pruett, Jennifer, NMENV
Subject: RE: Draft Discharge Permit DP-1132_MS Word Version

Bob,

Per your request, attached is the word version of the draft Discharge Permit for LANL's RLWTF dated 09.10.13.

Please let me know if you have any further questions. Thank you.

Jennifer T. Fullam
Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
505.827.2909
jennifer.fullam@state.nm.us

From: Beers, Bob [mailto:bbeers@lanl.gov]
Sent: Wednesday, October 16, 2013 8:01 AM
To: Fullam, Jennifer, NMENV
Cc: Saladen, Michael T; Pruett, Jennifer, NMENV
Subject: Draft Discharge Permit DP-1132_MS Word Version

Hi Jennifer,

Could you please send me the MS Word version of the September 10, 2013, Draft Discharge Permit DP-1132 for the TA-50 RLWTF.

Thank you.

Bob Beers
Los Alamos National Security, LLC
505-667-7969

DP-1132

GROUND WATER
OCT 17 2013
BUREAU

Los Alamos
NATIONAL LABORATORY

Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
505-667-0666

National Nuclear Security Administration
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87545
(505) 667-5794/FAX (505) 667-5948

Date: OCT 17 2013
Symbol: ENV-DO-13-0214
LAUR: 13-27654

Mr. Jerry Schoeppner, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Mr. Schoeppner:

SUBJECT: DISCHARGE PLAN DP-1132 QUARTERLY REPORT, THIRD QUARTER 2013, TA-50 RADIOACTIVE LIQUID WASTE TREATMENT FACILITY

This letter from the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) is the third quarter 2013 Discharge Plan DP-1132 report for the Technical Area (TA)-50 Radioactive Liquid Waste Treatment Facility (RLWTF). Since the first quarter of 1999, DOE/LANS have provided the New Mexico Environment Department (NMED) with voluntary quarterly reports containing analytical results from effluent and groundwater monitoring.

During the third quarter of 2013, no effluent was discharged to either the National Pollutant Discharge Elimination System (NPDES) Outfall 051 or to the recently constructed solar evaporative tank system (SET) at Technical Area (TA)-52; all effluent was evaporated on-site at the mechanical evaporator system (MES).

Quarterly Monitoring Results, Mortandad Canyon Alluvial Groundwater Wells

Table 1.0 presents the analytical results from sampling conducted at Mortandad Canyon alluvial well MCO-3 during the third quarter of 2013. No samples were collected from alluvial wells MCO-4B, MCO-6, and MCO-7 because there was insufficient water present. A sample from MCO-3 was submitted to GEL Laboratories LLC (GEL) for analysis. All of the analytical results were below the New Mexico Water Quality Control Commission (NMWQCC) 3103 standards for nitrate-nitrogen (NO_3-N), fluoride (F), and total dissolved solids (TDS). Analytical results from the sampling of intermediate and regional aquifer wells in Mortandad Canyon can be accessed online at the Intellus New Mexico environmental monitoring data web site (http://www.intellusnmdata.com).

TA-50 RLWTF Effluent Monitoring Results
No final weekly composite (FWC) samples were collected during the third quarter of 2013 because no effluent was discharged to Mortandad Canyon.

No final monthly composite (FMC) samples were collected during the third quarter of 2013 because no effluent was discharged to Mortandad Canyon.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this report.

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:RSB/lm

Cy: James Hogan, NMED/SWQB, Santa Fe, NM
John E. Kieling, NMED/HWB, Santa Fe, NM
Stephen M. Yanicak, NMED/DOE/OB, (E-File)
Hai Shen, NA-OO-LA, (E-File)
Gene E. Turner, NA-OO-LA, (E-File)
Eric L. Trujillo, LASO-NSM, (E-File)
Carl A. Beard, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Alison M. Dorries, ENV-DO, (E-File)
Randal S. Johnson, DSESH-TA55, (E-File)
Michael T. Saladen, ENV-CP, (E-File)
Robert S. Beers, ENV-CP, K490
Robert C. Mason, TA55-DO, (E-File)
Leslie K. Sonnenberg, ADNHHO, (E-File)
John C. Del Signore, TA-55 RLW, (E-File)
LASOmailbox@nnsa.doe.gov, w/enc., (E-File)
locatesteam@lanl.gov, w/enc., (E-File)
ENV-CP Correspondence File, w/enc., K490

Table 1.0. Mortandad Canyon Alluvial Well Sampling, 3rd Quarter, 2013.

Sampling Location	Sample Field Prep (F/UF)[1]	Sample Date	Perchlorate (ug/L)	NO_3+NO_2-N (mg/L)	TKN (mg/L)	NH3-N (mg/L)	TDS (mg/L)	F (mg/L)
MCO-3	F	7/22/2013	3.33	0.45	0.64	0.10	310	0.32
MCO-4B	F	7/15/2013	Dry[4]	Dry[4]	Dry[4]	Dry[4]	Dry[4]	Dry[4]
MCO-6	F	7/15/2013	Dry[4]	Dry[4]	Dry[4]	Dry[4]	Dry[4]	Dry[4]
MCO-7	F	7/15/2013	Dry[4]	Dry[4]	Dry[4]	Dry[4]	Dry[4]	Dry[4]
NM WQCC 3103 Groundwater Standards			*NA*[2]	*10 mg/L*[3]	*NA*[2]	*NA*[2]	*1000 mg/L*	*1.6 mg/L*

Notes:

[1]F means the sample was filtered. UF means the sampled was not filtered.

[2]NA means that there is no NM WQCC 3103 standard for this analyte.

[3]The NM WQCC 3103 Groundwater Standard is for NO_3-N.

[4]Dry means that there was insufficient water in the well for sampling.

From: Fullam, Jennifer, NMENV
To: Pruett, Jennifer, NMENV; Schoeppner, Jerry, NMENV
Cc: Kirby, Kimberly, NMENV
Subject: RE: Temporary Permission Request for CdV-R-15-3?
Date: Monday, October 21, 2013 11:11:08 AM

Jennifer,

In regards to the documents on the reading room, to my knowledge, it is not because of the federal shut-down. The website has never been "closed" but merely provides a notification stating that all documents relating to the consent order and individual permit (which is not the GWQB Discharge Permit) will not be posted. The reasoning behind this is not clear but I do not believe this has anything to do with the conditions of the GWQB Discharge Permit as drafted. Jon's email was informative in nature and did not appear to warrant a response since it does not relate to the DP. The Discharge Permit is still open for public comment and in draft form with proposed conditions requiring documents be posted to the reading room regardless of what is required under the consent order or individual permit.

In regards to extending the comment period due to the federal shut-down, I agree with your position. NMED has provided an ample amount of time for public comment and response by providing a 90-day comment period. In addition, although the federal government was shut down for a brief two-week period, the State of New Mexico and LANL remained open and continued services as usual. I can draft up something, for Jerry's signature, in response to CCNS's question. Should this be in e-mail or letter format (the request was submitted by CCNS by e-mail)? Thanks.

Jennifer T. Fullam
Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
505.827.2909
jennifer.fullam@state.nm.us

From: Pruett, Jennifer, NMENV
Sent: Monday, October 21, 2013 10:46 AM
To: Fullam, Jennifer, NMENV; Schoeppner, Jerry, NMENV
Cc: Kirby, Kimberly, NMENV
Subject: RE: Temporary Permission Request for CdV-R-15-3?

Also, did we ever respond to CCNS's request for additional time for public comment on 1132, due to the closure of the Reading Room? Was this closed because of the federal shut-down?

Jenn - will you please check whether this is open again? If it is, please write up a draft email response for Jerry to send out later in the week that says something like: while this was unavailable for a relatively short period of time, as GWQB provided an extra long comment period (90 days instead of 30 days), GWQB is not going to extend or change the end of the comment period due to the short federal shut-down.

Let me know if that makes sense to you. I think this email should come from Jerry, but as he will be out a lot this week, I'd appreciate your help putting together his response.

Thanks,
JJP

Jennifer J. Pruett
Manager, Pollution Prevention Section
Harold Runnels Bldg.
1190 St. Francis Dr.
P.O. Box 5469
Santa Fe, NM 87502-5469
505-827-0652

From: Fullam, Jennifer, NMENV
Sent: Monday, October 21, 2013 10:37 AM
To: Schoeppner, Jerry, NMENV
Cc: Pruett, Jennifer, NMENV
Subject: FW: Temporary Permission Request for CdV-R-15-3?

Jerry,

Have you had a chance to review the drafted response for this (sent to you via e-mail) and send it to Bob?

Jennifer T. Fullam
Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
505.827.2909
jennifer.fullam@state.nm.us

From: Beers, Bob [mailto:bbeers@lanl.gov]
Sent: Thursday, October 17, 2013 2:37 PM
To: Pruett, Jennifer, NMENV
Cc: Fullam, Jennifer, NMENV; Saladen, Michael T; Turner, Gene E
Subject: RE: Temporary Permission Request for CdV-R-15-3?

Hi Jennifer,

Any decision yet?

Thanks,

Bob Beers
Los Alamos National Security, LLC
505-231-0656

From: Pruett, Jennifer, NMENV [mailto:Jennifer.Pruett@state.nm.us]

Sent: Monday, September 30, 2013 11:11 AM
To: Beers, Bob
Cc: Fullam, Jennifer, NMENV; Saladen, Michael T; Turner, Gene E
Subject: Re: Temporary Permission Request for CdV-R-15-3?

We are working on this, Bob, and should have something to you in the next few days. We feel the approach of cooler weather, too!

Sent from my iPhone

On Sep 30, 2013, at 11:07 AM, "Beers, Bob" <bbeers@lanl.gov> wrote:

> Jennifer,
>
> I have not received guidance from your management regarding my inquiry (below) into Los Alamos National Laboratory's options for disposing of the 2850 gal of groundwater from monitoring well CdV-R-15-3.
>
> With winter approaching we are motivated to identify a disposal pathway before the containerized water freezes.
>
> Please let me know if you have questions or need additional information on this matter.
>
> Sincerely.
>
> Bob Beers
> Los Alamos National Security, LLC
> 505-667-7969

From: Beers, Bob
Sent: Tuesday, September 03, 2013 3:13 PM
To: Jennifer.Fullam@state.nm.us
Cc: Pruett, Jennifer, NMENV (Jennifer.Pruett@state.nm.us); Saladen, Michael T; Turner, Gene E
Subject: Temporary Permission Request for CdV-R-15-3?

Hi Jennifer,

Last week we spoke on the phone and I asked if DOE/LANS should submit a request for Temporary Permission to adjust the pH and then land apply approximately 2850 gal of groundwater produced during the rehabilitation of monitoring well CdV-R-15-3. As you may recall, the vast majority of the water produced during well rehab met all of the Decision Tree criteria for land application; unfortunately, the first volume of water produced (approximately 2850 gal) has elevated pH (9.5-10.1 su), presumably this volume was influenced by cementing operations. As we discussed, the Decision Tree does not allow for treatment. The likely option for DOE/LANS is through a request for Temporary Permission under DP-1793.

However, you indicated that you would confirm this option with your management.

Have you had an opportunity to do so?

Thank you for your support.

Sincerely,

Bob Beers
Environmental Compliance Programs Group
Los Alamos National Security, LLC
505-667-7969

Fullam Docs 030314/canfields/LANL/DP132 TA-50 RLWTF/Phone logs and Meeting Notes/
DP 1132 PL 102813 McCoy

New Mexico Environment Department
Ground Water Quality Bureau

Memorandum of Meeting or Phone Conversation

Memorandum of Meeting or Phone Conversation

☑ Telephone ☐ Meeting	**Time:** 357	**Date:** 10.28.13

Individuals Involved

Jennifer Fullam, NMED GWQB	☐ was called by	Name: Dave McCoy Affiliation: Citizen Action NM DP: 1132 Site Name: LANL RLWTF Phone Number: 505.262.1862

Subject: Information

Discussion:

McCoy left message for Fullam requesting information on the draft DP.

Conclusions:

Distribution:

DP Correspondence File

Initialed JF

09589

Fullam Docs 030714 / Case Ltrs / LANL / LANL emails

Fullam, Jennifer, NMENV

From: Pruett, Jennifer, NMENV
Sent: Tuesday, October 29, 2013 4:15 PM
To: Kieling, John, NMENV; Schoeppner, Jerry, NMENV; Fullam, Jennifer, NMENV; dave@radfreenm.org
Cc: Cobrain, Dave, NMENV
Subject: RE: Missing attachment for Draft LANL RLWTF

Good afternoon Mr. McCoy,

Jennifer Fullam is out of the office, so I am responding to your email sent yesterday. The monitoring well guidelines are readily available on the Ground Water Quality Bureau webpage, at the following link:

http://www.nmenv.state.nm.us/gwb/documents/MonitoringWellGuidelinesFINAL-March2011.pdf

Discharge Permit 1132 was published on or about September 13, 2013; GWQB extended the public comment period provided in 20.6.2.3108.K NMAC from the typical 30 days to 90 days for this particular permit. Plenty of time remains in the public comment period, so GWQB does not plan to extend it.

Thank you for your interest in DP-1132.

Sincerely,
JJP

Jennifer J. Pruett
Manager, Pollution Prevention Section
Harold Runnels Bldg.
1190 St. Francis Dr.
P.O. Box 5469
Santa Fe, NM 87502-5469
505-827-0652

From: Kieling, John, NMENV
Sent: Monday, October 28, 2013 8:14 PM
To: Schoeppner, Jerry, NMENV; Pruett, Jennifer, NMENV; Fullam, Jennifer, NMENV
Cc: Cobrain, Dave, NMENV
Subject: FW: Missing attachment for Draft LANL RLWTF

From: Dave McCoy [mailto:dave@radfreenm.org]
Sent: Monday, October 28, 2013 4:30 PM
To: Fullam, Jennifer, NMENV
Cc: Kieling, John, NMENV
Subject:: Missing attachment for Draft LANL RLWTF

Jennifer, John

Do you have a link where the following document can be reviewed? The Draft Permit p. 36 says its attached but it's not. I am also requesting a time extension in relation to the fact that the document was not attached to the Draft for review.

Ground water discharge Permit Monitoring Well Construction and Abandonment Conditions, Revision 1.1 March 2011

NEW MEXICO ENVIRONMENT DEPARTMENT
GROUND WATER QUALITY BUREAU
MONITORING WELL CONSTRUCTION AND ABANDONMENT GUIDELINES

Purpose: These guidelines identify minimum construction and abandonment details for installation of water table monitoring wells under ground water Discharge Permits issued by the NMED's Ground Water Quality Bureau (GWQB) and Abatement Plans approved by the GWQB. Proposed locations of monitoring wells required under Discharge Permits and Abatement Plans and requests to use alternate installation and/or construction methods for water table monitoring wells or other types of monitoring wells (e.g., deep monitoring wells for delineation of vertical extent of contaminants) must be submitted to the GWQB for approval prior to drilling and construction.

General Drilling Specifications:

1. All well drilling activities must be performed by an individual with a current and valid well driller license issued by the State of New Mexico in accordance with 19.27.4 NMAC. Use of drillers with environmental well drilling experience and expertise is highly recommended.
2. Drilling methods that allow for accurate determinations of water table locations must be employed. All drill bits, drill rods, and down-hole tools must be thoroughly cleaned immediately prior to the start of drilling. The borehole diameter must be drilled a minimum of 4 inches larger than the casing diameter to allow for the emplacement of sand and sealant.
3. After completion, the well should be allowed to stabilize for a minimum of 12 hours before development is initiated.
4. The well must be developed so that formation water flows freely through the screen and is not turbid, and all sediment and drilling disturbances are removed from the well.

Well Specifications (see attached monitoring well schematic):

5. Schedule 40 (or heavier) polyvinyl chloride (PVC) pipe, stainless steel pipe, carbon steel pipe, or pipe of an alternate appropriate material that has been approved for use by NMED must be used as casing. The casing must have an inside diameter not less than 2 inches. The casing material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. The casing material and thickness selected for use must have sufficient collapse strength to withstand the pressure exerted by grouts used as annular seals and thermal properties sufficient to withstand the heat generated by the hydration of cement-based grouts. Casing sections may be joined using welded, threaded, or mechanically locking joints; the method selected must provide sufficient joint strength for the specific well installation. The casing must extend from the top of the screen to at least one foot above ground surface. The top of the casing must be fitted with a removable cap, and the exposed casing must be protected by a locking steel well shroud. The shroud must be large enough in diameter to allow easy access for removal of the cap. Alternatively, monitoring wells may be completed below grade. In this case, the casing must extend from the top of the screen to 6 to 12 inches below the ground surface; the monitoring wells must be sealed with locking, expandable well plugs; a flush-mount, watertight well vault that is rated to withstand traffic loads must be emplaced around the wellhead; and the cover must be secured with at least one bolt. The vault cover must indicate that the wellhead of a monitoring well is contained within the vault.
6. A 20-foot section (maximum) of continuous-slot, machine slotted, or other manufactured PVC or stainless steel well screen or well screen of an alternate appropriate material that has been approved for use by NMED must be installed across the water table. Screens created by cutting slots into solid casing with saws or other tools must not be used. The screen material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. Screen sections may be joined using welded, threaded, or mechanically

locking joints; the method selected must provide sufficient joint strength for the specific well installation and must not introduce constituents that may reasonably be considered contaminants of interest at the facility. A cap must be attached to the bottom of the well screen; sumps (i.e., casing attached to the bottom of a well screen) should not be installed. The bottom of the screen must be installed no more than 15 feet below the water table; the top of the well screen must be positioned not less than 5 feet above the water table. The well screen slots must be appropriately sized for the formation materials and should be selected to retain 90 percent of the filter pack. A slot size of 0.010 inches is generally adequate for most installations.

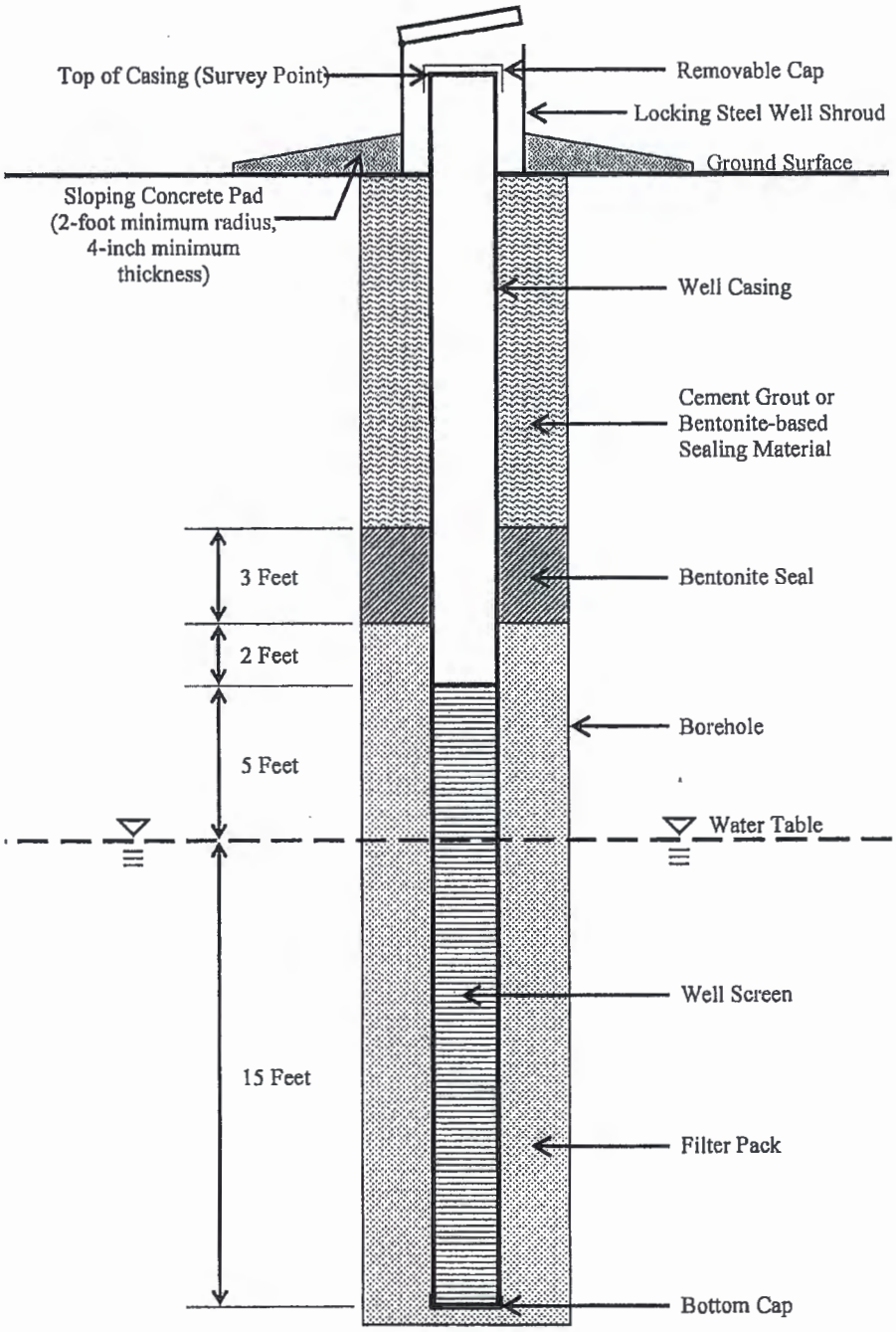
7. Casing and well screen must be centered in the borehole by placing centralizers near the top and bottom of the well screen.
8. A filter pack must be installed around the screen by filling the annular space from the bottom of the screen to 2 feet above the top of the screen with clean silica sand. The filter pack must be properly sized to prevent fine particles in the formation from entering the well; clean medium to coarse silica sand is generally adequate as filter pack material for 0.010-inch slotted well screen. For wells deeper than 30 feet, the sand must be emplaced by a tremmie pipe. The well should be surged or bailed to settle the filter pack and additional sand added, if necessary, before the bentonite seal is emplaced.
9. A bentonite seal must be constructed immediately above the filter pack by emplacing bentonite chips or pellets (3/8-inch in size or smaller) in a manner that prevents bridging of the chips/pellets in the annular space. The bentonite seal must be 3 feet in thickness and hydrated with clean water. Adequate time should be allowed for expansion of the bentonite seal before installation of the annular space seal.
10. The annular space above the bentonite seal must be sealed with cement grout or a bentonite-based sealing material acceptable to the State Engineer pursuant to 19.27.4 NMAC. A tremmie pipe must be used when placing sealing materials at depths greater than 20 feet below the ground surface. Annular space seals must extend from the top of the bentonite seal to the ground surface (for wells completed above grade) or to a level 3 to 6 inches below the top of casing (for wells completed below grade).
11. For monitoring wells finished above grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the shroud and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the wellhead. The installation of steel posts around the well shroud and wellhead is recommended for monitoring wells finished above grade to protect the wellhead from damage by vehicles or equipment. For monitoring wells finished below grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the well vault and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the well vault.

Abandonment:

12. Approval for abandonment of monitoring wells used for ground water monitoring in accordance with Discharge Permit and Abatement Plan requirements must be obtained from NMED prior to abandonment.
13. Well abandonment must be accomplished by removing the well casing and placing neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer for wells that encounter water pursuant to 19.27.4 NMAC from the bottom of the borehole to the ground surface using a tremmie pipe. If the casing cannot be removed, neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer must be placed in the well using a tremmie pipe from the bottom of the well to the ground surface.
14. After abandonment, written notification describing the well abandonment must be submitted to the NMED. Written notification of well abandonment must consist of a copy of the well plugging record submitted to the State Engineer in accordance with 19.27.4 NMAC, or alternate documentation containing the information to be provided in a well plugging record required by the State Engineer as specified in 19.27.4 NMAC.

Deviation from Monitoring Well Construction and Abandonment Requirements: Requests to construct water table monitoring wells or other types of monitoring wells for ground water monitoring under ground water Discharge Permits or Abatement Plans in a manner that deviates from the specified requirements must be submitted in writing to the GWQB. Each request must state the rationale for the proposed deviation from these requirements and provide detailed evidence supporting the request. The GWQB will approve or deny requests to deviate from these requirements in writing.

MONITORING WELL SCHEMATIC
(Not to Scale)



Fullam Docs 070714 / Caselands / LANL / OP 1132 TA-50 RLWTF / OP 1132 emails

Fullam, Jennifer, NMENV

From: Fullam, Jennifer, NMENV
Sent: Thursday, November 7, 2013 2:16 PM
To: Schoeppner, Jerry, NMENV; Pruett, Jennifer, NMENV
Subject: Discussion with San Felipe Pueblo re: LANL RLWTF

Jerry and Jennifer,

I just received a call from Pin'u Stout with San Felipe Pueblo Department of Natural Resources. She is requesting an informal discussion regarding the draft Discharge Permit for LANL's RLWTF. She is preparing some formal comments on the draft but would like to sit and discuss the Permit with NMED about it first. She and Michael Sandoval would like to meet with NMED on any of the following days:

Friday, November 15th,
Monday, November 18th
or Wednesday, November 20th

The proposed dates are within a narrow timeframe because the public notice period will end on December 13th and we would like to provide sufficient time for the Pueblo to assemble their comments after meeting with NMED and submit them within the public comment period, if possible. Please let me know what your schedules look like and if there are other NMED staff that should be present at the meeting. Thanks.

Jennifer T. Fullam
Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
505.827.2909
jennifer.fullam@state.nm.us

Fullam Docs 030714 / callbacks / LANL / DP 1132 TA-50 RLWTF / Phone logs and meeting notes / DP 1132 PL 110713 San Felipe

DP-1132 Blue File

New Mexico Environment Department
Ground Water Quality Bureau

Memorandum of Meeting or Phone Conversation

Memorandum of Meeting or Phone Conversation

☑ Telephone ☐ Meeting	Time: 127	Date: 11.07.13

Individuals Involved

Jennifer Fullam, NMED GWQB	☐ was called by	Name: Pin'u Stout
		Affiliation: San Felipe Pueblo
		DP: 1132
		Site Name: LANL RLWTF
		Phone Number: 505.771.6628

Subject: Meeting

Discussion:

Stout called Fullam to inform her that San Felipe Pueblo was planning on submitting comments on the draft Discharge Permit but would like to meet and have a discussion with NMED first. The meeting would include herself and Michael Sandoval. Stout was available on the 15th, 18th or 20th. Fullam will check staff availability and e-mail Stout potential meeting dates and times.

11.08.13 @ 952 Fullam left message for Stout proposing November 18th at 3:00 pm

11.08.13 @ 1010 Stout called Fullam and requested the meeting start around 2:30 pm due to travel and time restrictions. Fullam will accommodate Stout's request.

Conclusions:

Distribution:

DP Correspondence File

Initialed JF

: 09600

Fullam, Jennifer, NMENV

From: Fullam, Jennifer, NMENV
Sent: Wednesday, November 13, 2013 9:16 AM
To: 'Beers, Bob'
Subject: RE: DP-1132 Public Comment Period

Bob,

I have the public comment period starting on September 13, 2013 for 90 days and therefore ending on December 12, 2013.

Jennifer T. Fullam
Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
505.827.2909
jennifer.fullam@state.nm.us

From: Beers, Bob [mailto:bbeers@lanl.gov]
Sent: Tuesday, November 12, 2013 4:01 PM
To: Fullam, Jennifer, NMENV
Subject: DP-1132 Public Comment Period

Hi Jennifer,

Can you confirm for the date that the public comment period ends for DP-1132.

I believe it started on 9/13/13 and ends on 12/11/13 (90 days).

Is that correct?

Thanks,

Bob

Fullam, Jennifer, NMENV

From: Fullam, Jennifer, NMENV
Sent: Monday, November 18, 2013 4:01 PM
To: 'rhgilkeson@aol.com'
Subject: Public Records Request

Mr. Gilkeson,

The following links will take you to the NMED websites which have the forms for the Inspection of Public Records:

- General site containing documents pertaining to the inspection of public records http://www.nmenv.state.nm.us/OOTS/newsroom.html
- Form for inspection of public records http://www.nmenv.state.nm.us/OOTS/documents/public_information_request_form.pdf
- Policy for the inspection of public records http://www.nmenv.state.nm.us/OOTS/documents/public_information_request_policy.pdf
- Notice for inspection of public records policy http://www.nmenv.state.nm.us/OOTS/documents/Notice_for_Inspection_of_Public_Records_Policy.pdf

Please provide the completed form to Ms. Mascarenas (contact information is provided at the bottom of the form) and I will begin processing the records you have requested for your review. Thank you.

Jennifer T. Fullam
Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
505.827.2909
jennifer.fullam@state.nm.us

Fullam Docs 030714/case loads/LANL/DP1132 TA-50 RLWTF/070004 DP Regd 11-18-11 DP 1132 Blue Title

NEW MEXICO
ENVIRONMENT DEPARTMENT

Resource Protection Division

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1190 Saint Francis Drive (87505)
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www.nmenv.state.nm.us
James H. Davis, Ph.D.

SUSANNA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

November 18, 2011

Anthony R. Grieggs, Group Leader
Environmental Protection Division
Water Quality & RCRA (ENV-RCRA)
P.O. Box 1663, Mail Stop K490
Los Alamos, NM 87545

RE: Response to Notice of Intent to Discharge and Discharge Permit Required for Zero Liquid Discharge Tanks, AI 856: PRD20070004 and Updated Application Submittal Required for the Radioactive Liquid Waste Treatment Facility (RLWTF), DP-1132

Dear Mr. Grieggs:

The Ground Water Quality Bureau of the New Mexico Environment Department (NMED) received a Notice of Intent from Los Alamos National Laboratory (LANL) on November 8, 2007 for the facility referenced above. NMED responded in writing with a request for additional information which required LANL to submit 60% plans and specifications for the proposed structure, information pertaining to ground water which may be impacted should a release occur, operation and maintenance procedures for the tanks, information on the potential concentration of the wastestream due to evaporation, and seismic studies for the area in which the tanks are to be constructed. NMED received a response to the requested information from LANL on September 15, 2008 which provided most of the requested information and stated that plans and specifications would be submitted once available. NMED received the plans and specifications for the evaporative tanks on August 19, 2011 along with an addendum dated October 19, 2011. The notice describes LANL's intent to discharge up to 3.6 million gallons annually of treated effluent from the RLWTF to two evaporative concrete tanks equipped with synthetic liners and leak detection systems. The total operating volume of the tanks is approximately 754,036 gallons (100,800 cubic feet). The notice, along with the subsequent information submitted upon NMED's request, satisfies the requirements of Subsection A of 20.6.2.1201 New Mexico Administrative Code (NMAC) of the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC. The proposed discharge is located within the boundaries of Los Alamos National Laboratory at

35°51'37"N, 106°16'57"W, approximately 2.5 miles southeast of Los Alamos in Section 23, Township 19N, Range 06E, Los Alamos County.

NMED has reviewed the information provided in accordance with Subsection D of 20.6.2.1201 NMAC and because the proposed evaporative tanks contain an effluent or leachate which may move directly or indirectly into ground water, NMED has determined that **a Discharge Permit is required for the proposed discharge.** NMED considers the proposed evaporative tanks to be a component of the RLWTF, therefore they must be included in the Discharge Permit for this facility.

Any appeal of this determination that a Discharge Permit is required must be made to the New Mexico WQCC within 30 days of receipt of this letter, in accordance with Subsection B of 20.6.2.3112 NMAC. A copy of the WQCC Regulations, 20.6.2 NMAC, is available at http://www.nmcpr.state.nm.us/nmac/_title20/T20C006.htm.

Upon further review of the file for the RLWTF, NMED has noted the following:

- An application for a Discharge Permit was submitted to NMED on April 16, 1996 for the discharge of 41,770 gallons per day of treated low level radioactive wastewater from the RLWTF to a tributary of Mortandad Canyon (referred to as Effluent Canyon).
- The application identified potential upgrades to the system which were to enhance the treatment process and provide alternate discharge capabilities for the facility.
- The treated effluent from the RLWTF is currently authorized to be discharged to an outfall (Outfall 051) under a United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Permit (NM0028355) last issued on August 1, 2007, and subsequently modified on July 17, 2007, May 13, 2011, and October 11, 2011.
- Numerous Notices of Planned Changes have been submitted to EPA for treatment system upgrades and facility changes under the NPDES Permit for Outfall 051. Copies of these notices were submitted to NMED on the following dates: April 21, 1998, March 18, 1999, April 3, 2000, June 13, 2000, May 7, 2002, March 14, 2003, April 18, 2003, January 12, 2004, May 14, 2007, May 6, 2008, August 19, 2010, September 16, 2010, and February 23, 2011.
- In addition to the Notices of Planned Changes, numerous notices concerning minor modifications to the facility have been submitted to NMED as addendums to the original Discharge Permit application. NMED received copies of these submissions which were dated March 23, 1999, December 8, 2000, November 8, 2007, August 25, 2010, September 27, 2010, December 15, 2010, and March 22, 2011.
- NMED has engaged in numerous meetings, inspections and written correspondence regarding the RLWTF in order to compile accurate information on the facility in preparation for drafting a Discharge Permit that will accurately reflect the activities conducted at the RLWTF.
- In September 2003, a draft of Discharge Permit DP-1132 was sent to LANL which was subsequently Public Noticed on April 18, 2005, beginning a 30-day comment period.
- On April 27, 2005, in response to multiple requests from interested parties, a second public comment period was granted on the proposed Discharge Permit (extending the comment period for approximately 90 days, until August 4, 2005).

- NMED received comments and requests for a public hearing regarding the draft Discharge Permit from both interested parties and LANL.
- Through continued discussions with LANL, correspondence, site inspections and the above referenced Notice of Intent, it has become apparent that the facility has significantly modified treatment processes, discharge volumes and locations of the discharge when compared to the original application submitted to NMED on August 16, 1996.
- As it pertains to any future Discharge Permits to be issued by the NMED Ground Water Quality Bureau (GWQB), this *facility* has been determined to include the central influent collection lines leading to the RLWTF, all components which are part of the wastewater treatment process and all locations where the treated wastewater is disposed, including all surface discharges as well as non-surface discharges such as evaporative tanks (as described in the above referenced Notice of Intent). This determination by the NMED-GWQB is based on information provided in the original application for a Discharge Permit along with subsequent information provided to NMED by LANL.

Given the extensive and fractured exchange of information concerning this facility, along with changes at the RLWTF that have occurred during the lengthy permitting process and planned future changes, NMED views LANL's August 16, 1996 Discharge Permit application to be inconsistent with the current and planned discharge activities associated with the RLWTF. **Therefore, NMED requires that LANL submit a comprehensive and up-to-date Discharge Permit application for the RLWTF within 90 days of the date of this letter (by February 16, 2011).**

When submitted, the application (copy enclosed) should be completed in its entirety and specifically address the following:

- The estimated volumes, sources (technical area and building) and wastestream characteristics of all influent wastewater that LANL receives, or intends to receive, at the RLWTF.
- A description of the conveyance methods used to transport wastewater to the RLWTF for each source.
- A description of waste characterization and metering systems used to determine influent wastestream characteristics and volumes entering the RLWTF.
- A description of the review and amendment process for LANL's internal Waste Acceptance Criteria (WAC) for all incoming wastewater received at the RLWTF. This should include LANL's process for ensuring the WAC relates to the current treatment technologies and processes.
- A description of operational procedures for receiving wastes from each generator.
- A schematic of the treatment process in its entirety for each wastestream (from collection to final disposal).
- Descriptions, locations, construction materials and sizing for each component of the treatment processes for each type of wastestream being treated at the RLWTF.
- Descriptions, locations and designs for all secondary storage and auxillary emergency units intended to receive, treat or store wastewater received at the facility.
- Proposed processes for the operation, inspection and maintenance for the facility as it pertains to the collection lines, treatment units and effluent storage disposal units.
- Procedures and corrective actions for addressing acute failures at the facility.
- Procedures and corrective actions for addressing long-term maintenance issues at the facility.

- Record drawings for all components of the facility, if available.
- Construction plans and specifications for all components of the facility which are under construction or are proposed for construction.
- A proposed effluent monitoring plan, identifying analytes and sample locations/frequency. The proposal should consider discharge frequencies, incoming waste characteristics and the constituents listed under 20.6.2.3103 NMAC and Subsection WW of 20.6.2.7 NMAC.
- Proposed flow and metering systems used to determine effluent discharge volumes for each of the discharge locations.
- Proposed ground water monitoring locations for ground water sources most likely to be impacted by intentional and unintentional discharges from the RLWTF. The proposal should identify geohydrology of the potentially impacted areas, existing monitoring well locations and construction.
- Actions which LANL would implement should partial or full closure of the facility occur.
- A scaled facility plan showing the facility's components including influent collection lines, storage units, major treatment units and disposal units.
- All other information sought in NMED's application for Discharge Permit Sections A through C. Please note that for the purposes of public notification, the "discharge site" as it relates to this facility encompasses the central collection system lines, the treatment and storage facilities and all discharge locations for the treated effluent.

When submitting the comprehensive and up-to-date Discharge Permit application, you must complete and submit three copies along with the $100 filing fee.

If you have any questions, please contact either Jennifer Fullam at (505) 827-2909 or Clint Marshall, Acting Program Manager of the Ground Water Pollution Prevention Section, at (505) 827-0027.

Sincerely,

James H. Davis, Ph.D.
Director, Resource Protection Division

JD:JF

Enc: Applying for a Discharge Permit: General Information
Discharge Permit Application

cc: Robert Italiano, District Manager, NMED District II (w/o enclosures)
NMED Santa Fe Field Office (w/o enclosures)
DP Required File (w/o enclosures)
James Bearzi, NMED SWQB (w/o enclosures)
Richard Powell, NMED SWQB (w/o enclosures)
John Kieling, NMED HWB (w/o enclosures)
Steven Yanicak, NMED-DOE-Oversight Bureau (w/o enclosures)

Hai Shen, LASO-EO, Los Alamos National Laboratory, A316, Los Alamos, NM 87545 (w/o enclosures)

Gene Turner, LASO-EO, Los Alamos National Laboratory, A316, Los Alamos, NM 87545 (w/o enclosures)

Eric Trujillo, LASO-NSM, Los Alamos National Laboratory, A316, Los Alamos, NM 87545 (w/o enclosures)

Carl A. Beard, PADOPS, Los Alamos National Laboratory, A102, Los Alamos, NM 87545 (w/o enclosures)

J. Chris Cantwell, ADESHQ, Los Alamos National Laboratory, K491, Los Alamos, NM 87545 (w/o enclosures)

Randy Johnson, ENV-ES, Los Alamos National Laboratory, E500, Los Alamos, NM 87545 (w/o enclosures)

Michael Saladen ENV-RCRA, Los Alamos National Laboratory, K490, Los Alamos, NM 87545 (w/o enclosures)

Robert Mason, TA-55-DO, Los Alamos National Laboratory, E583, Los Alamos, NM 87545 (w/o enclosures)

Hugh McGovern, TA-55-RLW, Los Alamos National Laboratory, E518, Los Alamos, NM 87545 (w/o enclosures)

Pete Worland, TA-55-RLW, Los Alamos National Laboratory, E518, Los Alamos, NM 87545 (w/o enclosures)

Keith Orr, PMF-FUNCT, Los Alamos National Laboratory, M984, Los Alamos, NM 87545 (w/o enclosures)

Roy Maestas, CM-STRS, Los Alamos National Laboratory, P299, Los Alamos, NM 87545 (w/o enclosures)

Joe Brophy, PMF-FUNCT Los Alamos National Laboratory, P137, Los Alamos, NM 87545 (w/o enclosures)

Ed Artiglia, ES-PE, Los Alamos National Laboratory, P137, Los Alamos, NM 87545 (w/o enclosures)

Bob Beers, ENV-RCRA, Los Alamos National Laboratory, K490, Los Alamos NM, 87545 (w/ enclosures)

Fullam, Jennifer, NMENV

From: Fullam, Jennifer, NMENV
Sent: Wednesday, November 20, 2013 9:59 AM
To: rhgilkeson@aol.com
Subject: RE: IPRA Gikeson-for LANL wells MCO-3 MCO-7 and MCOI-6
Attachments: DP1132 GW Status Report 2010 MCO-3 MCOI-6 MCO-7.pdf

Mr. Gilkeson,

Attached you will find documentation pertaining to the well construction for MCO-3, MCOI-6 and MCO-7 as requested. As discussed with you by phone on November 18, 2013, NMED does not have well drilling logs for these wells. The information attached was obtained from a 2010 Progress Report titled *Groundwater Level Status Report for 2010 Los Alamos National Laboratory* (LA-14437-PR) submitted by LANL to NMED on September 16, 2011.

From: Rhgilkeson@aol.com [mailto:Rhgilkeson@aol.com]
Sent: Monday, November 18, 2013 4:42 PM
To: Mascarenas, Melissa, NMENV
Cc: rhgilkeson@aol.com
Subject: Well completion reocords for LANL wells MCO-3, MCO-7 and MCOI-6

NEW MEXICO ENVIRONMENT DEPARTMENT
INSPECTION OF PUBLIC RECORD REQUEST FORM
Please fill out the following information:
1. Date: 11-18-13
2. Requestor's Name: Robert H. Gilkeson
3. Requestor's Address: 7220 Central Ave. SE Apt 1043
Albuquerque, NM 87108
4. Phone No.: (505) 412-1930
5. Email: rhgilkeson@aol.com

6. Company Being Represented: Not Applicable
7. Address: Not Applicable

8. Document or File being requested to be reviewed or copied (please describe the records in sufficient detail to enable Department personnel to reasonably identify & locate the records: I request copies of the well completion records for wells MCO-3, MCO-7 and MCOI-6 that are used as monitoring wells in the proposed Discharge Permit for the LANL TA-50 RLWTF.

9. NMED Bureau where Document/File can be found (if known): Ground Water

Signature Robert H. Gilkeson

The cost for copying by NMED is as indicated on Attachment A. Please send this request to:
Melissa Y. Mascareñas
Inspection of Public Records Officer
1190 St. Francis Drive, Ste. N-4050

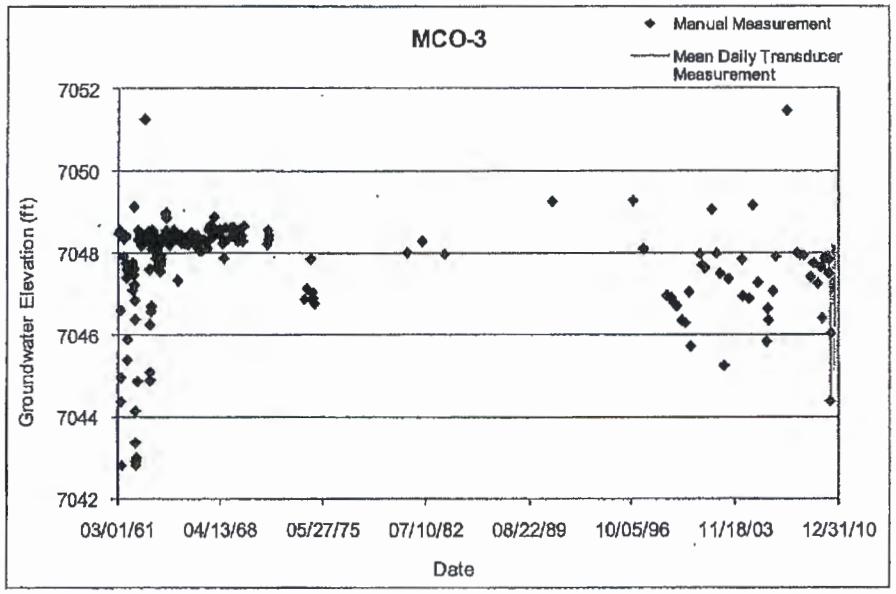
Santa Fe, New Mexico 87505
fax: (505) 827-1628 or
email: melissa.mascarenas@state.nm.us

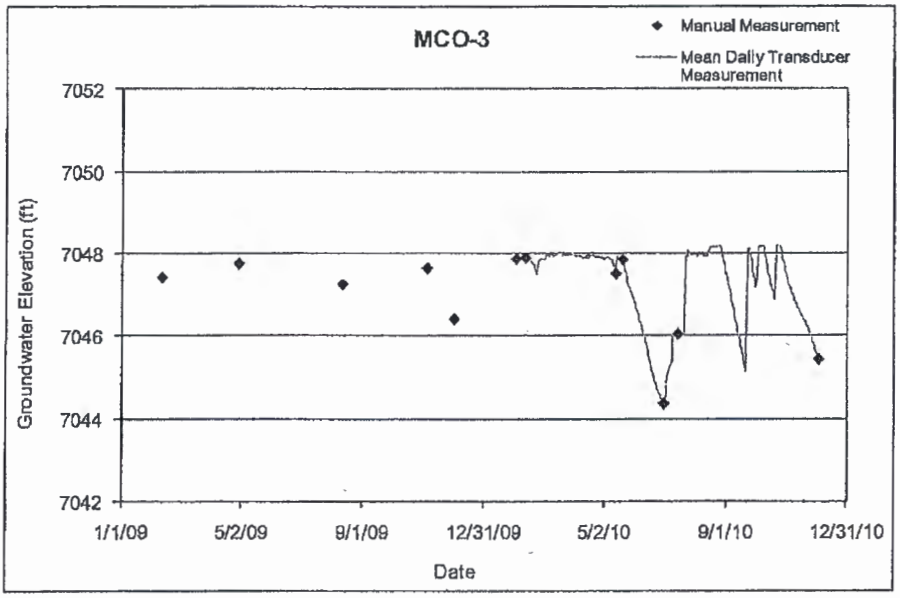
5.56 MCO-3

Location: Upper Mortandad Canyon, approximately 1250 ft downstream of TA-50 outfall and 8 ft east of MCA-5.
Period of Record: March 27, 1961, through December 3, 2010.
Remarks: There was no transducer installed in this well until February 11, 2010; continuous monitoring switched from MCA-5 to this well since MCO-3 is the well which is sampled.

MCO-3 Construction Information													
Zone	Screen Top Depth (ft)	Screen Bottom Depth (ft)	Screen Top Elev (ft)	Screen Bottom Elev (ft)	Screen Length (ft)	Pump Intake Depth (ft)	Pump Intake Elevation (ft)	Depth to Top of Sump (ft)	Top of Sump Elevation (ft)	Depth to Sump Bottom (ft)	Sump Length (ft)	Sump Volume (L)	Comment
1	2.0	12.0	7050.6	7040.6	10.0			12.0	7040.6	12.0	0.0	0.0	Alluvial groundwater

Note: Ground elevation is 7052.6 ft; all depths are from this elevation





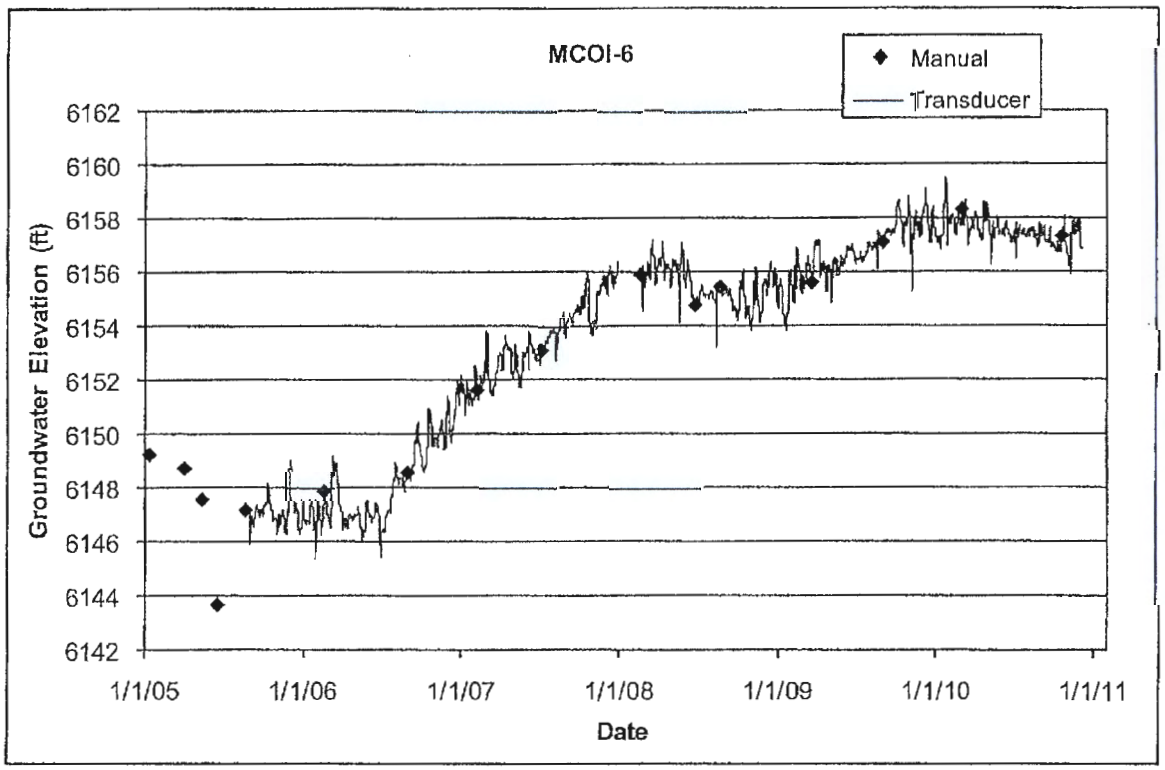
4.17 MCOI-6

Location: MCOI-6 is located in lower Mortandad Canyon about 160 ft northeast of MCOI-5.
Completion Type: Single completion in Cerros del Rio basalt.
Period of Record: Well completed in January 2005, transducer installed August 2005, data through 2010.
Remarks: The groundwater level is about 20 ft above the top of the screen and 17 to 18 ft higher than at MCOI-5. The intermediate groundwater has a delayed response to atmospheric pressure fluctuations.

MCOI-6 Construction Information

Screen	Screen Top Depth (ft)	Screen Bottom Depth (ft)	Screen Top Elev (ft)	Screen Bottom Elev (ft)	Screen Length (ft)	Pump Intake Depth (ft)	Pump Intake Elev (ft)	Top of Sump Depth (ft)	Top of Sump Elev (ft)	Sump Bottom Depth (ft)	Sump Length (ft)	Sump Vol (L)	Hydro Zone Code	Geo Unit Code
1	686.0	708.3	6125.1	6102.8	22.3	689.0	6122.1	708.3	6102.8	713.2	4.9	15.3	I	Tb4

Note: Brass cap elevation: 6811.10 ft; all measurements are from this elevation

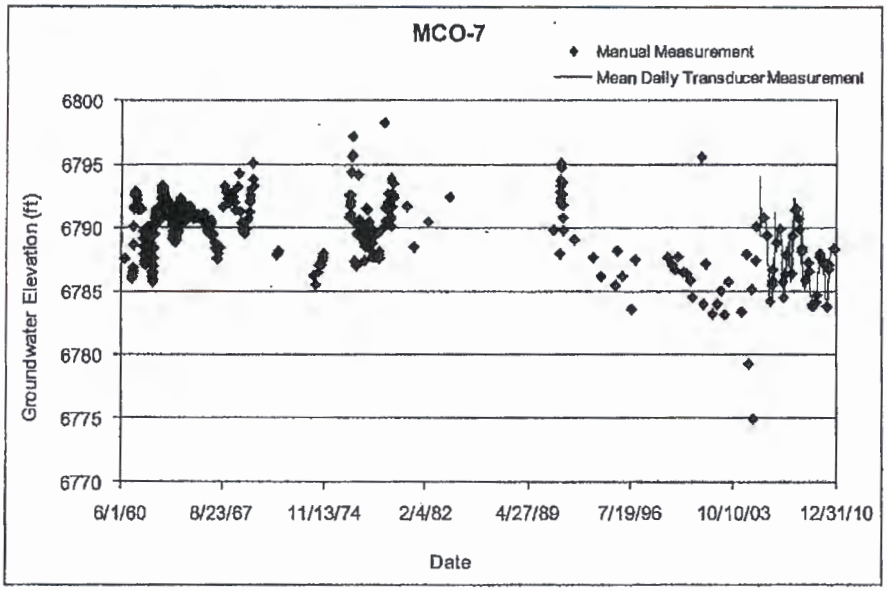


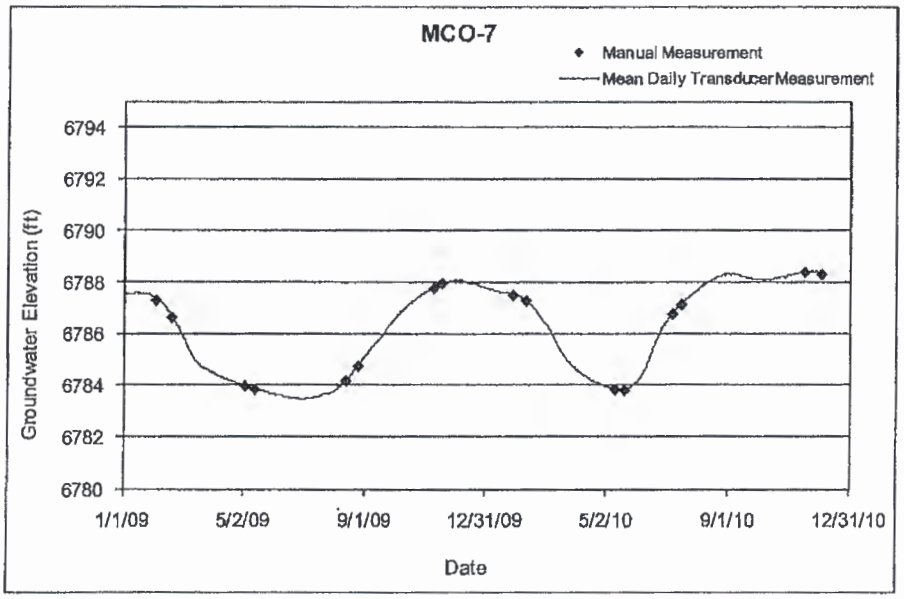
5.60 MCO-7

Location: Middle Mortandad Canyon, approximately 0.2 mi east of MCO-6.
Period of Record: October 1, 1960, through December 3, 2010.
Remarks: None.

MCO-7 Construction Information													
Zone	Screen Top Depth (ft)	Screen Bottom Depth (ft)	Screen Top Elev (ft)	Screen Bottom Elev (ft)	Screen Length (ft)	Pump Intake Depth (ft)	Pump Intake Elevation (ft)	Depth to Top of Sump (ft)	Top of Sump Elevation (ft)	Depth to Sump Bottom (ft)	Sump Length (ft)	Sump Volume (L)	Comment
1	39	69	6788.31	6758.31	30			69	6758.31	69	0	0	Alluvial groundwater

Note: Ground elevation is 6827.31 ft; all depths are from this elevation





NM ENVIRONMENT DEPARTMENT ROUTING SLIP
Ground Water Pollution Prevention Section

LETTER/MEMO TO: Mr. Turner and Ms. Dorries,

FACILITY NAME: DP-1132 (AI:856, PRD20130011)

FOR APPROVAL/SIGNATURE BY: Jerry Schoeppner

DRAFTED BY: Jennifer Fullam DATE: November 26, 2013

SUBJECT: Temporary Permission WMRM

DECISION NEEDED BY: _____ REASON: _____

REVIEW/APPROVAL:

		REVIEWER				DRAFTER
Name	Title	Initial	Received	Reviewed	Approved	Revised
Kim Kirby	Supervisor					
John Hall	Team Leader					
Jennifer Pruett	Program Manager					
Jerry Schoeppner	Bureau Chief					

SCOPING MEETING DATE:

COMMENTS BY DRAFTER OR REVIEWER(S):

Attached is the temporary permission for LANL's RLWTF WMRM tanks (new influent tanks proposed in the most recent application).

Following up from discussions with LANL during the draft Discharge Permit process, LANL has submitted a request for temporary permission to put the new influent tanks on-line. We had recommended that LANL refrain from requesting Temporary Permission until the draft Discharge Permit went out for public notice so as not to circumvent the regulatory process considering historical concerns that have been expressed regarding this facility.

To date, NMED has received one formal set of comments from Santa Ana Pueblo. San Felipe is scheduled to meet with NMED regarding concerns they have prior to formulating formal written comments. I have received calls from San Ildefonso Pueblo, Southwest Research and Information Center. I have fulfilled an IPRA for one individual and responded to LANL and CCNS on the public comment period closing date. No further comments or requests for a hearing have been received and the public comment period is scheduled to close on December 12, 2013.

continue on back as needed

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

Harold Runnels Building
1190 St. Francis Drive
PO Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-2918 Fax (505) 827-2965
www.nmenv.state.nm.us

SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

RYAN FLYNN
Secretary – Designate
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

December 27, 2013

Ms. Alison Dorries, LANS-EP-RS
Los Alamos National Security, LLC
P.O. Box 1663 MS K404
Los Alamos, NM 87545

Mr. Gene Turner, DOE/AIP/POC
U.S. Department of Energy
Los Alamos Site Office, MS A316
528 35th Street
Los Alamos, NM 87545

RE: Temporary Permission to Discharge, Waste Mitigation and Risk Management (WMRM) Influent Storage Tanks at Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility (RLWTF), DP-1132 (PRD20130011)

Dear Mr. Turner and Ms. Dorries:

The New Mexico Environment Department has reviewed your request, dated October 3, 2013, for temporary permission to discharge no more than 40,000 gallons per day of low-level radioactive liquid wastewater. Low-level radioactive liquid wastewater enters the facility through the influent collection system and is stored in the WMRM tanks for processing at the RLWTF. The WMRM tanks are located within Los Alamos National Laboratory, approximately 1.5 miles south of Los Alamos, New Mexico, in Section 22, Township 19N, Range 06E, Los Alamos County.

Temporary permission to discharge is hereby granted for a duration not to exceed 120 days from the date discharge commences, pursuant to Subsection B of 20.6.2.3106 NMAC of the New Mexico WQCC Regulations. This approval is contingent on your discharging and reporting as described in your October 3, 2013 request.

This approval does not relieve you of the responsibility to comply with any other applicable federal, state, and/or local laws and regulations, such as zoning requirements and nuisance ordinances. Also, this approval does not relieve you of liability should your operation result in actual pollution of surface or ground waters.

If you have any questions, please contact Jennifer Fullam of the Ground Water Pollution Prevention Section at 505-827-2909.

Sincerely,

Jerry Schoeppner, Chief
Ground Water Quality Bureau

JS:JF

cc: Robert Italiano, District Manager, NMED District II
NMED Santa Fe Field Office
James Hogan, NMED SWQB, via electronic transmission to james.hogan@state.nm.us
John Kieling, NMED HWB, via electronic transmission to john.kieling@state.nm.us
Dave Cobrain, NMED HWB, via electronic transmission to dave.cobrain@state.nm.us
Steven Yanicak, NMED-DOE-Oversight Bureau, via electronic transmission to steve.yanicak@state.nm.us
Hai Shen, LASO-EO, via electronic transmission to hai.shen@nnsa.doe.gov
Carl Beard, PADOPS, via electronic transmission to cbeard@lanl.gov
Michael T. Brandt, ADESH, via electronic transmission to mtbrandt@lanl.gov
Randal S. Johnson, DSESH-TA55, via electronic transmission to randyj@lanl.gov
Robert C. Mason, TA55-DO, via electronic transmission to rcmason@lanl.gov
William H. Schewttmann, IPM, via electronic transmission to bills@lanl.gov
Dianne W. Wilburn, TA55-DO, via electronic transmission to dianne@lanl.gov
John C. Del Signore, TA55 RLW, via electronic transmission to jcds@lanl.gov
Michael T. Saladen, ENV-RCRA, via electronic transmission to saladen@lanl.gov
Robert S. Beers, ENV-RCRA, Los Alamos National Laboratory, K490, Los Alamos, NM 87545

AI-856 DP-1132

PRD-20130011

Los Alamos
NATIONAL LABORATORY

Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
505-667-0666

National Nuclear Security Administration
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87545
(505) 667-5794/FAX (505) 667-5948

Date: OCT 0 3 2013
Symbol: ENV-DO-13-0166
LAUR: 13-26704

GROUND WATER
OCT 0 4 2013
BUREAU

Mr. Jerry Schoeppner, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2250
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Mr. Schoeppner:

SUBJECT: REQUEST FOR TEMPORARY PERMISSION TO PLACE NEW INFLUENT STORAGE TANKS INTO SERVICE AT LOS ALAMOS NATIONAL LABORATORY, DP-1132

Pursuant to Subsection B of 20.6.2.3106 New Mexico Administrative Code, and guidance provided by the New Mexico Environment Department Ground Water Quality Bureau (NMED GWQB), the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) request temporary permission to place two of the Waste Mitigation and Risk Management (WMRM) Facility's storage tanks at Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility (RLWTF) into service for primary influent storage. The $150.00 filing fee required by regulation is enclosed (Enclosure 1).

In February 2012, DOE/LANS submitted to the NMED GWQB a discharge permit application (DP-1132) for the Technical Area (TA)-50 RLWTF and the TA-52 Solar Evaporation Tank (SET) (ENV-DO-12-0005). Subsequently, in August 2012, DOE/LANS submitted to the NMED GWQB supplemental information for the above-referenced discharge permit application that proposed to replace seven aging vessels at the TA-50 RLWTF by making major process changes and by placing two storage tanks at the WMRM Facility into daily use for influent storage (Enclosure 2). Preparations by DOE/LANS—both construction and procedural— to place the two WMRM tanks into service for primary influent storage are nearly complete.

At a May 29, 2013, meeting NMED GWQB staff recommended to DOE/LANS the temporary permission pathway to operation because the NMED GWQB recognized that the need to use the two WMRM tanks for influent storage might precede the issuance of a final discharge permit. NMED GWQB staff recommended that DOE/LANS request temporary permission once a draft Discharge Permit had been released for public notice (PN2). Public notice (PN2) of the draft Discharge Permit for DP-1132 was published on the NMED's website on September 13, 2013. For the reasons described above, temporary permission is requested to allow the use of the two WMRM tanks for influent storage, pending the issuance of DP-1132.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding this quarterly report.

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
Department of Energy

AMD:GET:RSB/lm

Enclosures:

1. Check to the NMED in the amount of $150 for the temporary permission filing fee.
2. Supplemental Information for Discharge Permit Application DP-1132, Radioactive Liquid Waste Treatment Facility (RLWTF) and Zero Liquid Discharge (ZLD) Solar Evaporation Tanks

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, w/enc.
John E. Kieling, NMED/HWB, Santa Fe, NM, w/enc.
Steven M. Yanicak, NMED/DOE/OB, w/enc., (E-File)
Hai Shen, NA-OO-LA, w/enc., (E-File)
Gene E. Turner, NA-OO-LA, w/enc., (E-File)
Carl A. Beard, PADOPS, w/o enc., (E-File)
Michael T. Brandt, ADESH, w/o enc., (E-File)
Alison M. Dorries, ENV-DO, w/o enc., (E-File)
Randal S. Johnson, DSESH-TA55, w/enc., (E-File)
Robert C. Mason, TA55-DO, w/enc., (E-File)
William H. Schwettmann, IPM, w/o enc., (E-File)
Dianne W. Wilburn, TA55-DO, w/enc., (E-File)
John C. Del Signore, TA-55 RLW, w/enc., (E-File)
Michael T. Saladen, ENV-RCRA, w/o enc., (E-File)
Robert S. Beers, ENV-RCRA, w/enc., K490
LASOmailbox@nnsa.doe.gov, w/enc., (E-File)
locatesteam@lanl.gov, w/enc., (E-File)
ENV-RCRA Correspondence File, w/enc., K490

ENCLOSURE 1

Check to the NMED in the amount of $150.00 for the temporary permission filing fee

ENV-DO-13-0166

LAUR-13-26704

Date: OCT 0 3 2013

ENCLOSURE 2

Supplemental Information for Discharge Permit Application DP-1132, Radioactive Liquid Waste Treatment Facility (RLWTF) and Zero Liquid Discharge (ZLD) Solar Evaporation Tanks

ENV-DO-13-0166

LAUR-13-26704

Date: OCT 0 3 2013

Fullam Docs 030714/caseloads / LANL / DP1132 TA-50 RLWTF / DP1132 Comments Tewa Women and CCW 120613

Fullam, Jennifer, NMENV

From:	Jonathan Block <jblock@nmelc.org>
Sent:	Friday, December 06, 2013 4:02 PM
To:	Schoeppner, Jerry, NMENV; Fullam, Jennifer, NMENV
Cc:	Brian Shields; Joni Arends; Rhgilkeson@aol.com; Kathy Sanchez; J. G. Sanchez; Rachel Conn; Marian Naranjo
Subject:	CCW-TWU-3 INDIVIDUALS-TA-50 RLWTF PERMIT FIRST SET OF COMMENTS AND HEARING REQUEST
Attachments:	CCW-TWA-COMMENTERS & HRG REQ RLWTF PERMIT 20131206.pdf

Hello, Jennifer and Jerry:
Attached hereto please find in PDF the above referenced first set of comments and hearing request from Communities for Clean Water, TEWA Women United, Kathy WonPovi Sanchez, J. Gilbert Sanchez, and Robert Gilkeson, Independent Registered Geologist on the TA-50 Radioactive Liquid Waste Treatment Facility at LANL. There is an attached Exhibit 'A' to the comments and hearing request. It is a copy of a letter from Attorney Douglas Meiklejohn to William Olson, Ground Water Quality Bureau Chief, providing comments on behalf of Amigos Bravos (a member of CCW) on the same permit in 2005.

The organizations and individuals plan to file additional comments on or before the close of the comment period on December 12th.

Thank you for you consideration of these comments and hearing request.

Have a good weekend.

Jon

--
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Communities for Clean Water

A Northern New Mexico Network

December 6, 2013

Mr. Jerry Schoeppner, Bureau Chief
Ms. Jennifer Fullam, Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
P.O. Box 5469
Santa Fe, NM 87502-5469
Via email to: Jerry.Schoeppner@state.nm.us
Jennifer.Fullam@state.nm.us

Re: Comments and Hearing Request of the *Communities for Clean Water, Tewa Women United* and three individuals on the proposed permit DP-1132 for the Radioactive Liquid Waste Treatment Facility ("RLWTF") at Los Alamos National Laboratory

Dear Mr. Schoeppner and Ms. Fullam:

Following below are the first set of Comments and the Hearing Request of *Communities for Clean Water* ("CCW"), *Tewa Women United* ("TWU") and individuals *Kathy WanPovi Sanchez, J. Gilbert Sanchez* and *Robert H. Gilkeson, Independent Registered Geologist*, as referenced above. We will submit a second set of Comments before the close of the public comment period on December 12, 2013.

Our Comments and Hearing Request are introduced by a section entitled "Background Information" which provides a brief description of the history and composition of CCW, TWU, and the individual commenters, so that your agency and the Secretary-Designate understand the basis and existence of the substantial public interest in the RLWTF permit. In the event that final terms of the permit cannot be negotiated by the commenters, your agency and Los Alamos National Laboratory ("LANL"), there is substantial public interest sufficient to warrant a public hearing--and we specifically request that a public hearing be held.

Additionally, we have divided our comments into two other sections: general and specific permit comments. The general comments raise long-standing issues in relation to the issuance of this permit. The specific comments address what we view as necessary, substantive changes in the permit.

I. BACKGROUND INFORMATION

A. Organizations and Persons Commenting and Requesting A Hearing;

1. CCW, Tewa Women United and Kathy WanPovi Sanchez, J. Gilbert Sanchez and Robert H. Gilkeson.

CCW is a network of non-governmental organizations comprised of *Amigos Bravos, Concerned Citizens for Nuclear Safety* (CCNS), *Honor Our Pueblo Existence* (H.O.P.E.). *Tewa Women United* and individuals, Kathy WanPovi Sanchez, J. Gilbert Sanchez and Robert H. Gilkeson, Independent Registered Geologist, join CCW in submitting this first set of comments. Collectively, our members live downwind and downstream of LANL and are concerned about the discharge of up to 40,000 gallons per day of effluent from Technical Area 50 ("TA-50") into Mortandad Canyon and the evaporation of radioactive tritium and other pollutants into the atmosphere, the subject of the draft permit. The members of CCW and TWU, along with the individuals, represent a significant number of persons who are interested in the determinations on this permit.

CCW History. After the catastrophic Cerro Grande fire in 2000, Concerned Citizens for Nuclear Safety (CCNS) became alarmed about the transport of toxic materials off the LANL site into the Río Grande watershed. CCNS organized a conference that summer that drew over 450 participants. Amigos Bravos joined the effort in 2003, investigating stormwater discharges at LANL. The *Embudo Valley Environmental Monitoring Group*, which investigated downwind LANL impacts to their watershed, began collaborating in 2005. *Honor Our Pueblo Existence* (H.O.P.E.), a Pueblo Nation community-based organization, later joined the effort with a particular concern for the cultural impacts of LANL toxics. These groups formed the core that in early 2006 became *CCW*.

Starting in 2006, *CCW* pursued two independent, but related activities: (a) a campaign to prevent migration of LANL toxics to the Rio Grande watershed; and (b) an outreach campaign directed at impacted communities, the media, and public officials. CCW began questioning the adequacy of LANL's Environmental Management ("EM"). When it became clear that LANL's EM activities were inadequate and not likely to improve, members of CCW joined with other community-based organizations, including *TWU* and individuals, Kathy WanPovi Sanchez and J. Gilbert Sanchez, in March 2008 to file a Clean Water Act citizen complaint against United States Department of Energy ("DOE") and LANL for wide-ranging and chronic stormwater-related violations. Filing the lawsuit won *CCW* an invitation in late 2009 to participate in LANL's first Individual Stormwater Permit ("ISP"), issued by the Environmental Protection Agency ("EPA"). When the draft ISP failed to provide enough assurances, *CCW* filed an administrative appeal with the EPA, which led to another year of negotiations. In 2010, EPA approved what they have said is one of the strongest individual stormwater permits in the country.

With many of the stormwater issues resolved in the ISP, the litigation was settled in April 2011, after two years of negotiation resolved many of the remaining issues, especially providing for greater public input and financial support for technical experts to support that public input.

In order to protect public health, welfare, safety and the environment, the goals of *CCW* are to:

- Create a broad community-based movement.
- Protect precious water resources from contamination now and for the benefit of future generations.
- Hold local, state and federal regulators accountable to use their regulatory and enforcement powers and fulfill their public trust responsibilities.
- Hold LANL and those degrading the environment accountable for water contamination.
- Ensure the highest possible level of clean up at contaminated sites.

Tewa Women United ("TWU") History. TWU is a collective intertribal women's voice in the Tewa homelands of Northern New Mexico. The name Tewa Women United comes from the Tewa words *wi don gi mu* which translates to "we are one."

TWU was started in 1989 as a support group for women concerned with the traumatic effects of colonization leading to issues including alcoholism, suicide, terricide, environmental violence and domestic and sexual violence. In the safe space women created, we transformed and empowered one another through critical analysis and the embracing and re-affirming of our cultural identity.

In 2001 TWU transitioned from an informal, all volunteer group to a formal 501(c)3 non-profit organization.

Tewa Women United was incorporated for educational, social and benevolent purposes, specifically for the ending of all forms of violence against Native Women and girls, Mother Earth and to promote peace in New Mexico.

The Vision of TWU. Sovereignty is living the truth from the heart. TWU's vision is embodied in the Tewa words *wo watsi* the breath of our work. In other words, our path of life follows us into daily work.

The Mission of TWU. The mission of TWU is to provide safe spaces of Indigenous women to uncover the power, strength and skills they possess to become positive forces for social change in their families and communities.

Kathy Wanpovi Sanchez resides at the Pueblo de San Ildefonso. She is not representing the Pueblo de San Ildefonso in this matter. She is a fourth generation potter of the Julian and Maria Martinez family lineage. She has had direct contact with her great grandmother, Maria. The oral tradition wisdom and life narratives transmitted to her go back a very long, long time. What she refers to as sacred is where Los Alamos National Laboratory is located. It is her ancestral homeland. It is a sacred place that holds the present and ancestral energy of being.

J. Gilbert Sanchez resides at the Pueblo de San Ildefonso. He is a former Governor of the Pueblo. He created the Pueblo's Environmental Protection, Cultural Preservation and Land Management Offices. He served as Director of the Los Alamos Pueblos Project. In this matter, he does not represent the Pueblo de San Ildefonso. He sat on the State and Tribal Working Group at the Department of Energy Secretarial level for 12 years and on the Board of Scientific Counselors as a Community Representative for over 12 years.

Robert H. Gilkeson, Independent Registered Geologist, is a former contractor at LANL, specializing in the Environmental Remediation Programs and Groundwater Protection Programs. He was a research scientist at the University of Illinois for 17 years. Over the past decade, he has provided *pro bono* technical expertise to CCW, TWU and the individuals Kathy WanPovi Sanchez and J. Gilbert Sanchez about the seismic, groundwater protection and waste remediation issues at LANL.

B. The Permit History And Need For Additional Time And Documents.

1. The Permit First Drafted In the 1990s. NMED first released a draft permit for public comment in the mid-1990s. CCNS, through its staffer, Susan Diane, asked for a public hearing. There were delays, until 2005, when NMED released a draft permit for public comment. On August 4, 2005 Amigos Bravos, represented by the New Mexico Environmental Law Center, submitted comments and requested a public hearing. Letter to William C. Olson, NMED, from Attorney Douglas Meiklejohn (August 4, 2005), attached hereto as Exhibit 'A'.

For the third time, the public provides these public comments. We appreciate that NMED provided a 90-day public comment period given the amount of public interest in the RLWTF. We incorporate our previous comments by reference in order to demonstrate the longstanding significant public interest in this permit.

2. Requests for extension of time to submit comments and obtain necessary background documents have been denied. We made a request to NMED for an extension of time to submit these comments due to the October 2013 federal government shutdown, which was denied. Further, we have requested data and documents from the Permittees and the EPA, which responses have been incomplete. Additional effort was required to obtain the needed information in order to provided informed comments to NMED. On November 27, 2013 we filed Freedom of Information Act requests with the DOE and EPA in order to obtain data and additional information from both the DOE/LANL and EPA about tritium emissions from both evaporation units. If there are additional delays in obtaining the data and documents, we request the opportunity to provide additional comments following the completion of the comment period on December 12, 2013. We believe additional time should be provided.

II. GENERAL COMMENTS ON THE PERMIT.

A. Introduction: Acknowledging Our Government's Occupation and Pollution of Sacred Places. We begin by acknowledging the sacred place where the discharges are occurring. LANL is discharging into the ground and making emissions into the air in the Sacred Mountains of the Pueblo Peoples who were told by the U.S. Government that the Pajarito Plateau would be used for a short time and then it would be returned to the People. The Plateau has been used, and projected for use, by the U.S. Government for at least the next 50 years. One hundred and twenty years is not a short amount of time.

1. Section 43. Need for Closure and Post-Closure Plans for TA-50 Now – Not 180 Days Following the Issuance of the Permit. NMED must require the DOE and LANL (the "Permittees") to provide the closure and post-closure plans for the RLWTF as part of their application for groundwater discharge permit DP-1132. *See* 20.6.2.3107(A)(11) NMAC (closure plan required that will "prevent the exceedance [water quality] standards . . . in ground water or abate such contamination"). The draft permit allows for DOE and LANL to submit the closure plans 180 days following the issuance of the permit. This creates a situation that places both the public and NMED at a distinct disadvantage and creates a substantially increased cost of the permitting process at a time when state resources are scarce. Both the public and the Ground Water Quality Bureau need to see both the plans for operation and closure of the 50-year old facility now in order for the agency to craft an appropriate permit and the public to provide informed public comments. By bifurcating the permitting process from the closure process there will have to be two permit proceedings which will cost NMED and the public time, resources and money. By including the closure and post closure plans with the permit – as required -- both public and agency resources are appropriately conserved and a higher level of informed decision-making can be achieved. That is a benefit to NMED, and the public it serves. Moreover, requiring the closure plan before the time of

permit issuance will also conserve federal tax dollars, as LANL, a federally funded facility, will only have to undergo one ground water permitting process for the RLWTF.

DOE and LANL have already had more than ample time to prepare the closure and post-closure plan for this facility. A draft of discharge permit DP-1132 was issued in 1995 and on June 10, 2005. In response to the draft permits, public comments were submitted that raised the requirement for the inclusion of a closure and post-closure plan. Seventeen years and eight years of notice is more than a reasonable amount of time for LANL to fulfill the legal requirement that it provide its closure and post closure plans with its permit application for the RLWTF.

Please carefully consider this conservative approach to the permitting of TA-50 in which all sides save money and time. The Ground Water Quality Bureau should require DOE/LANL/LANS to submit the closure and post closure plans for agency review now and before issuance of a revised permit.

2. We note that the Outfall 051 discharge pipe is surrounded by the Los Alamos County drinking water wells. NMED states in the draft permit:

> The discharge from the Facility is within or into a place of withdrawal of ground water for present or reasonably foreseeable future use within the meaning of the [Water Quality Act], NMSA 1978, § 74-6-5.E.3, and the [Water Quality Control Commission] Regulations at 20.6.2.3103 NMAC. Section IV. Findings, p. 9.

Los Alamos County residents rely upon the regional aquifer for 100 percent of their drinking water. The ground water of TA-50 is a present and future source of drinking water: a place of withdrawal of ground water for present and reasonably foreseeable future use within the meaning of the Water Quality Act, *id.* at , § 74-6-5.E.3 and Water Quality Control Commission Regulations at 20.6.2.3103 NMAC. We have a special concern about protecting the present and future use of the drinking water supply as required by the New Mexico Water Quality Act (WQA) and regulations adopted pursuant to the WQA.

At issue are numerous radioactive and other hazardous contaminants that have been, and continue to be, discharged by LANL into Mortandad Canyon. These pollutants – including known carcinogens – are migrating into the regional aquifer. Besides the detrimental effects of such discharges on human and environment health, it is feared that some of these pollutants will enter the drinking water supply of Los Alamos and communities downstream of LANL.

3. **LANL has several reports going back to the 1970s of its studies on the need and efficacy of turning the RLWTF into a "zero discharge" facility.**[1] In its application, as well previous studies of the RLWTF, LANL points to the fact that its discharges from the facility are already extremely minimal. Given the data that LANL has provided, it is questionable as to whether this facility should receive an NPDES permit or should be permitted as a RCRA hazardous waste processing facility. NMED in consultation with Region 6 of the EPA should make a determination regarding the correct regulatory fit, given the fact that there are minimal discharges and the facility has the capacity to be a "zero discharge" facility according to the applicant. Were the facility equipped with an emergency storage tank capable of holding a day of maximum capacity discharge plus necessary "freeboard", it would be able to operate without discharging under an NPDES permit.

The draft permit states:

> The discharge may contain water contaminants with concentrations above the standards of 20.6.2.3103 NMAC and may contain toxic pollutants as defined in 20.6.2.7 WW NMAC. Section III, page 8.

We fully support NMED having reserved, in the permit, the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or that the standards of 20.6.2.3103 WW NMAC is present. *See id.* Additionally, the permit should reference and provide as an

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[1] Collins, K., Rife, J., Rae, S. and Hanson, S., "Los Alamos National Pollution Discharge Elimination System Permit Compliance and Outfall Reduction Strategy," LA-UR-07-8312 (December 20, 2007) ("Collins *et al.*"). See, for example, zero discharge project described at 3-6; description of declining output from facility at 7-16 to 7-17.

Moreover, this is not a new consideration for LANL. The Collins *et al.* report states that, "Zero liquid discharge of effluent was considered in 1977 with the proposed construction of 14 acres of evaporative ponds on Sigma Mesa." *Id.* at 7-17. Furthermore, a "1998 a report entitled *Elimination of Liquid Discharge to the Environment from the TA-50 Radioactive Liquid Waste Treatment Facility* (Moss et al., 1998) again recommended zero discharge of effluent from the TA-50 RLWTF. In 2003, a new working group was formed and completed a second report. These two reports provide the basis for the current Zero Liquid Discharge (ZLD) Project which is scheduled as a design/build project for FY08 or FY09." at 7-17. See also the Collins report recommendations which support the notion that the current facility should, by now, be a zero-discharge facility. Recommendations at 7-17 through 7-20; 8-3 to 8-4, and, at 8-4 to 8-5, see "Recommendations for FY08 Scope to Implement the NPDES Permit Compliance and Outfall Reduction Strategy."

Of course, were LANL to actually implement the recommendations of its scientists and technicians over the last thirty six (36) years, it would be seeking a RCRA permit for the hazardous waste treatment facility rather than relying upon discharging, as needed, its toxic, radioactive wastes into the human and natural environment.

appendix the information LANL provided to EPA concerning air emissions of tritium from the evaporation units. While we recognize that the permitting is being done under the Water Quality Act by the Ground Water Quality Bureau, LANL has long recognized that the use of the evaporation units triggers the need for air quality approvals from EPA and the state of New Mexico. [2]

III. COMMENTS ADDRESSED TO SPECIFIC PORTIONS OF THE PERMIT.

A. Specific Portions Of The Permit Need To Be Changed.

1. Section I. Acronyms, Definitions and Tables, at page 4. COMMENT: Reference to and the standard for Total Residual Chlorine (TRC) was removed **is not present in?** from the acronym list, definitions and Tables. TRC should have an effluent limit and be required for sampling, analysis and reporting under this permit.

2. Section II. Definitions, at page 5. COMMENT (1) The definition of 'calibration' should appear in the Definitions section of the permit; (2) "Practice of Engineering" does not appear in the definitions section--unless it is reinstated, the definition of 'Record Drawings' should include the statement that the official record of the actual as-built conditions of the completed construction "are certified and bear the seal and signature of a Professional Engineer licensed to practice engineering in the State of New Mexico."

3. Section II.BB. Definition of Total Polychlorinated Biphenyls (PCBs), at page 7. COMMENT: The EPA stormwater permit for LANL requires that the Permittees use Method 1668 Revision A, or the most current revisions of the Congener Method, for PCB analysis. *See* Part I.C, footnote (*4). This is also a requirement of the industrial surface water NPDES permits. For purposes of analytic consistency, NMED should require the use of Method 1668 Revision A for PCB analyses done under the draft RLWTF permit.

Additionally, the permit should be corrected to reference Method 1668C *Chlorinated*

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[2] *Id.* at 2-9 ("[E]missions from mechanical evaporators and evaporation ponds must be addressed when evaluating options for permit compliance and outfall reduction"); also at 5-1, LANL anticipated that NMED would impose requirements, under it ground water permitting of the evaporation facilities that are more comprehensive than the current permit requirements ("Evaporation basins or tanks may require Groundwater Discharge Permits that specify design items such as liner materials, lining requirements, monitoring, recordkeeping, operation and maintenance requirements, and performance standards") (emphasis added).

Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS in §IV.B.19.[3]

4. Section III. Introduction, at page 8. COMMENT: The first paragraph should include language that the permit is for operations at Los Alamos National Laboratory (LANL).

5. Section V.D. Authorization to Discharge, at page 10. COMMENT: (a) Influent Collection System conveyance lines should be double walled; (b) the type of gas used in the Mechanical Evaporator System should be disclosed in the permit; (c) the Solar Evaporative Tank System should not be a "unsealed subgrade concrete structure" rather is should be sealed, especially considering that the leak detection is a single rather than a double leak detection system.

6. Section VI.A.3(g) Submittal of Plans and Specifications, at page 13. COMMENT: The same concern regarding DOE Standard 1020-2012 applies here. The Standard requires that all facilities meet seismic qualification. Given that DOE requirement and that the terminus of the Guaje Mountain Fault is in the area of TA-50/TA-55, the permit should require that the RLWTF be in compliance with all federal regulations, including DOE seismic qualification under Standard 1020-2102.

7. Section VI.A.3(j). Submittal of Plans and Specifications, at page 13. COMMENT: This provision, at either j or k, should include requiring installation of a camera as part of the detecting the failure of either primary or secondary containment or the presence of a release.

8. Section VI.A.6. Signs, at page 14. COMMENT: *Honor Our Pueblo Existence* requested the provision of warning signs in Tewa in the NMED Hazardous Waste Permit for LANL. *See §2.5.1 of the Hazardous Water Permit.* In this permit, LANL and NMED should be required to contact Santa Clara Pueblo, as well as the other three Accord Pueblos, about what type of signs each Pueblo requires and put those requirements in the permit.

9. Section VI.A.8. Water Tightness Testing, at page 15. COMMENT: There is no human health and safety benefit in allowing an infiltration or infiltration rate of up to 50 gallons per mile per consecutive 24-hour period. No regulation allows such an excess amount of leakage and there is no lawful justification for doing so. The permit should be changed to disallow this level of leakage. Moreover, it is inconsistent with the permit requirements at Section 30, Water-Tightness, which require leak testing in every

[3] Collins *et al.*, "Los Alamos National Pollution Discharge Elimination System Permit Compliance and Outfall Reduction Strategy," *id.*, acknowledged the need to use (and recommended) this methodology. *See* 7-20, 7-22.

piping segment rather than a calculation of the average rate of leakage. A maximum for leakage should be specified "as low as reasonably achievable" (ALARA) with some threshold that will be protective of human health.

10. Section VI.A.9. Settled Solids, at page 16. COMMENT: This section should specify where the settled solids will be measured. It is unclear whether measurements will be taken at the Solar Evaporative Tank (SET) System and/or the Mechanical Evaporator System (MES). The permit should explain the depth of the SETs in "Section V. Authorization to Discharge," at page 9.

11. Section VI.A.10.b. Facility Inspections, at page 17. COMMENT: The term for inspection (weekly, monthly) of "visual portions of all synthetic liners used to store or dispose of liquids or semi-liquids" should be stated in the permit. Moreover, as the terms of inspection are stated for other portions of the facility, it is inconsistent for the permit to fail to specify terms of inspection for all portions of the facility.

12. Table 1. Effluent Quality Limits for Discharges to Outfall 051, at page 19: COMMENT: Effluent limits for perchlorate are nearly three times as high as in the draft 2005 permit and nearly twice the current California standard. The limitations for perchlorate should be about one tenth of those in Table 1. Moreover, in 2006, LANL published a graph in a briefing paper written by the Nuclear Waste and Infrastructure Services Division, Radioactive Liquid Waste Group, "Radioactive Liquid Waste Treatment Facility, Los Alamos National Laboratory, TA-50" (May 17, 2006). The graph shows that, excepting a single spike in a three-month period, perchlorate, close to the end of 2004, had been reduced to near zero. Surely, in 2013, LANL should be able to reduce its perchlorate discharge to at least the California standard, if not to zero.

13. Table 1. Effluent Quality Limits for Discharges to Outfall 051, at page 19. COMMENT: The 2005 draft permit had a permit limit of .00077 mg/L for mercury. The current draft has a limit of .0022 mg/L for mercury. If anything the limit today should be more, not less stringent and protective of occupational and public health and safety than it was eight (8) years ago.

14. Table 1. Effluent Quality Limits for Discharges to Outfall 051, at page 19. COMMENT: The 2005 draft had a zinc effluent limit of 4.37 mg/L. Again, the current revised draft permit has a less protective, less stringent limit set at 10 mg/L. The current limitation should be more protective of occupational and public health and safety than that proposed eight (8) years ago. The limits set in the revised draft permit should be at least as protective as they were before, absent some scientific justification for setting less protective and stringent limits.

15. Table 1. Effluent Quality Limits for Discharges to Outfall 051, at page 20. COMMENT: The limit for "Radioactivity" is higher than parties to the draft

permit wanted in 2005. It is currently set at 30 pCi/L. That limit should be 15 pCi/L. Given the technological advances in remediation technologies since the 2005 draft permit, it is reasonable and achievable--and properly protective of public health and safety--to limit tritium emissions to 15 pCi/L in this permit as part of the radioactivity limits in this permit. The briefing paper cited above also contains a graph showing that LANL, between January 2004 and September 2004 had reduced the amount of radioactive material discharged to the environment to near zero. Surely, in 2013, it is not unreasonable for LANL to accept a limit of 15 pCi/L for Radioactivity.

16. Tables 1 and 2. Effluent Quality Limits for Discharges to Outfall 051 and Effluent Quality Limits for Discharges to the MES and SET, at pages 19-21.
COMMENT: In the 2005 draft permit there was a tritium limit of 20 nCi/L. There is no tritium limit in this current draft permit, despite the fact that Los Alamos National Security, LLC, ("LANS") stated that it was intending to achieve "zero discharge" for tritium. Again, both the goal of "zero discharge" and, in the event that goal is not achieved, a tritium limit of 20 nCi/L should be inserted into the permit in order to be adequately protective of occupational and public health and safety. Tritium evaporation capabilities at LANL have, theoretically, been enhanced as part of the plan to achieve a "zero discharge" RLWTF. For this purpose, LANL now has both a "synthetically lined Solar Evaporative Tank system (SET)" and the Mechanical Evaporator System (MES) at TA-52. Given the additional facility for tritium evaporation, there should be limits in this permit that are consistent with LANL's supplemental treatment equipment for tritium. There should also be a deadline in the permit for the Permittees to achieve "zero discharge" given that LANL has been working on this since the 1970s.[4]

17. Section VI.A.13. Effluent Limits: Outfall 051, at page 20.
COMMENT: There is no justification for the permit providing that "constituents that are subject to effective and enforceable limitations under NPDES Permit NM0028355 for discharges to Outfall 051, that are lower than the effluent limits under this Discharge Permit are exempt." The permit should be consistent with state and federal law in the level of protection of water quality and human health and safety. This requires using language in the permit that specifies the more protective standard (be it state or federal) as the one applying to any and all discharges.

18. Section VI.A.17. Installation of Flow Meters, at page 22.
COMMENT: Considering the public has been waiting for almost two decades for this permit and that LANL has been working on making the existing facility a zero discharge facility since 1977, CCNS requests that the Permittees be required to install the flow meters within 30 days of the effective date of the GWDP. It is outrageous to provide six additional months after the effectiveness date of the permit for the implementation of

[4] *Supra* note 1 (discussing the history of LANL studies recommending that the RLWTF be a "zero discharge" facility and indicating the capacity to achieve that objective).

flow metering within the RLWTF.

19. Section VI.A.18. Calibration of Flow Meters, at page 23. COMMENT: The calibration of flow meters should also be done within 30 days of the effective date of the permit as flow meter calibration is not very difficult to perform. Additionally, there is no engineering justification for a calibration rate of plus or minus 10% of actual flow when the standard is plus or minus 5%.

20. Section VI.B. 24.b. Waste Tracking, at page 26. COMMENT: Regardless of whatever lag time there may be between approval and conveyance of waste to TA-50, it is important to know when the waste stream is conveyed as well as when it was approved. The permit should be changed to clearly state when the waste stream is conveyed as well as when it was approved.

21. Section VI.B.25. Effluent Sampling, at page 26. COMMENT: The permit should require sampling for PCBs at Outfall 051, the MES and SET in the monthly and quarterly sampling events. *See* 20.6.2.3103 (A)(15) and 20.6.2.7.WW (39), NMAC (requirements for monitoring and limitations on PCBs in discharges). The type of discharge expected from the MES and SET should be specified so the reason for a quarterly sampling requirement is readily apparent. In addition, there should be a specification of the flow path for such discharges.

22. Section VI.C.29. Containment, at page 30. COMMENT: The language in the paragraph at the end of this section with respect to "long-term actions" to maintain the integrity of the secondary containment raises concerns. The nature, extent and limitations on what constitutes appropriate actions should be specified in the permit. The permit should require any proposal be noticed to the public for comment as well as the opportunity to request a public meeting; and that any proposal be posted promptly on LANL's Electronic Public Reading Room--not at the end of the process as the permit appears to allow.

23. Section VI.C.32. Damage to Structural Integrity, at page 33. COMMENT: This section should include a requirement for the Permittees to provide NMED with an oral 24-hour notice about any significant damage to the structural integrity of any unit or system.

24. Section VI.D.41. Cessation of Operation of Specific Units, at page 40. COMMENT: The permit needs to include the workplan for stabilization of five units that are required to be closed within 60 days of the effective date of the permit.

25. Section VI.D.42. Stabilization of Individual Units and Systems, at page 40. COMMENT: This section should include the pipes that have been used to move waste from TA-50 to the TA-53 evaporation tanks or similar structures.

We plan to submit, as noted above, additional comments supplementing the above as part of our Comments and Request for Public Hearing on the RLWTF permit.

We thank you for your careful consideration of these comments and our request for a hearing on this permit.

Respectfully submitted:

Jon Block, Staff Attorney,
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Counsel for Communities for Clean Water, Tewa Women, Kathy WanPovi Sanchez, J. Gilbert Sanchez and Robert H. Gilkeson

NEW MEXICO
ENVIRONMENTAL LAW CENTER

COPY

AUG 04 2005

August 4, 2005

William C. Olson
Bureau Chief
Ground Water Bureau
New Mexico Environment Department
1190 St Francis Drive
Santa Fe, New Mexico

Hand delivered

Re: Application of the U.S. Department of Energy and the University of California for renewal of discharge permit DP-1132 for the Radioactive Liquid Waste Treatment Facility at Los Alamos National Laboratory

Dear Bill:

I write as counsel for Amigos Bravos to request a public hearing and to comment on the draft discharge permit DP-1132 issued by the Ground Water Bureau of the New Mexico Environment Department on April 11, 2005 and re-issued on June 10, 2005.

Introduction

The Ground Water Bureau ("the Bureau") of the New Mexico Environment Department ("NMED") indicated in its April 11, 2005 notice of issuance, and its June 10, 2005 notice of re-issuance, of the draft of discharge permit DP-1132 that it proposes to issue DP-1132 to the U.S. Department of Energy ("DOE") and the University of California ("the University") for the Los Alamos National Laboratory Radioactive Liquid Waste Treatment Facility at Technical Area 50 ("the Facility") within the Los Alamos National Laboratory ("LANL"). The June tenth re-issuance notice stated that public comments and requests for a public hearing must be submitted on or before August 4, 2005.

This request for a public hearing and these comments are submitted by Amigos Bravos, a non-profit community based organization that is concerned about the impacts of the Facility on ground and surface water in New Mexico. Amigos Bravos appreciates the effort by the Bureau to address the discharges from the Facility. Amigos Bravos also appreciates this opportunity to be involved in the Bureau's consideration of the issues presented by those discharges. This request for a public hearing and these comments are submitted pursuant to the New Mexico Water Quality Act and the New Mexico Water Quality Control Commission Regulations.

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Request for public hearing

Amigos Bravos' request for a public hearing should be granted for two reasons. First, there is significant public interest in this proposed discharge permit. Second, there are significant issues that must be addressed before the discharge permit is issued in final form.

The New Mexico Water Quality Act and its implementing regulations provide for public hearings.

The New Mexico Water Quality Act, NMSA 1978 §§ 74-6-1 *et seq* ("the Act") provides that the Water Quality Control Commission ("WQCC") shall adopt regulations providing for notice to the public of applications for permits under the Act. NMSA 1978 §74-6-5 F. That section also provides that no ruling on an application for a permit shall be made without opportunity for a public hearing at which all interested persons have the chance to present their views and arguments, and to cross examine witnesses provided by other parties. *Id.*

The Water Quality Control Commission Regulations ("the Regulations") adopted to implement those provisions indicate that the NMED shall conduct a public hearing or meeting if the Secretary determines that there is significant public interest. NMAC §20.6.2.4108.D. There is significant public interest in the proposed discharge permit that is the subject of this proceeding.

This request is made by the board of directors, the staff, and the members of Amigos Bravos, a community based non-profit organization. The mission of Amigos Bravos includes an emphasis on protection of the Rio Grande watershed, and Amigos Bravos has a particular interest in this proceeding. Moreover, Amigos Bravos' extensive membership includes many members who live down stream and down gradient from LANL and who are therefore at risk from contamination discharged by the Facility that is the subject of proposed discharge permit DP-1132.

Amigos Bravos' mission and strategic plan call for addressing contamination from LANL.

The mission of Amigos Bravos includes several specific goals. These are: 1) to return New Mexico's rivers and the Rio Grande watershed to drinkable quality wherever possible, and to contact quality everywhere else; 2) to see that natural flows are maintained and where those flows have been disrupted by human intervention, to see that they are

regulated to protect and reclaim the river ecosystem by approximating natural flows; and 3) to preserve and restore the native riparian and riverine biodiversity. Amigos Bravos supports the environmentally sound, sustainable traditional ways of life of indigenous cultures and holds that environmental justice and social justice go hand in hand.

Amigos Bravos' Board of Directors adopted the Amigos Bravos Strategic Plan in July 2003. That Strategic Plan identifies the use of state and federal regulatory processes to stop ground and surface pollution migrating from LANL facilities as a key component of Amigos Bravos' work, particularly the organization's work to protect and restore water quality and quantity in White Rock Canyon.

Amigos Bravos believes that state ground water discharge permits provide the public with a unique opportunity to work with the State, and the polluting facility, to develop the best possible protection for ground water in both the short term and after closeout of the facility. By preventing additional pollution from being released, and by requiring clean up of historic releases, the public's right to clean water will be protected. The proposed issuance of discharge permit DP-1132 to LANL provides Amigos Bravos with an opportunity to serve New Mexico's citizens by protecting the state's future drinking water resources while furthering its mission.

Amigos Bravos' extensive membership includes a substantial number of people who may be affected by contamination from the Facility.

Amigos Bravos' membership of more than 1,600 people reflects the geography of its constituency, with about 80 percent residing in-state. Within New Mexico, a substantial number of the members live in Los Alamos, Santa Fe, and Albuquerque. Because contaminants discharged by the Facility may reach ground water, the Amigos Bravos members who live in Los Alamos are at risk from contamination discharged by that Facility. Since discharges from that Facility also have the potential to reach the Rio Grande, Amigos Bravos members in Santa Fe and Albuquerque are at risk from contamination released by that Facility. There are therefore a substantial number of Amigos Bravos members who may be affected by discharges governed by proposed discharge permit DP-1132.

On the basis of the interests of Amigos Bravos' membership alone, there is significant public interest in the proposed discharge plan DP-1132. Moreover, Amigos Bravos is not the only organization that is requesting a public hearing concerning proposed discharge plan DP-1132. A similar request is being made by Concerned Citizens for Nuclear Safety, a non-profit organization based in Santa Fe that has a long standing interest in the operations of the LANL, and whose request is backed by that group's Board of Directors, Staff, and membership.

There is therefore significant public interest in the draft DP-1132, and the NMED Secretary should grant this and other requests for a public hearing

Comments on the draft DP-1132

These comments are divided into the following categories: comments on the impacts of discharges from the Facility; questions about the need to discharge from the Facility and the alternatives to discharging from the Facility; comments on effluent limits; information that is needed in order to evaluate the impacts of the discharges from the Facility; comments concerning the wastes that are taken into and processed in the Facility; joint and several liability among the permittees for obligations under the permit; comments and questions about the treatment and disposal of non-liquid wastes generated at the facility; comments on the monitoring measures called for by the draft discharge permit; comments concerning the provision of monitoring and other data to members of the public; comments on the proposed closure plan for the Facility; comments on the need for a financial assurance for the discharge permit; comments on the relationship of DP-1132 to the Compliance Order on Consent entered into between the NMED, the DOE, and the University on March 1, 2005 ("the Compliance Order"), and comments on the retention of records by the permittees.

These comments are not meant to address all issues that exist or may arise with respect to the proposed discharge permit. Amigos Bravos reserves the right to raise other issues in other contexts, including negotiations and a public hearing, concerning the proposed permit.

Discharges from the Facility have the potential to impact ground water and down gradient surface water.

The potential for contaminants from Technical Area 50, where the Facility is located, to reach the Rio Grande was documented by George Rice in *New Mexico's Right to Know: The Potential for Groundwater Contaminants from Los Alamos National Laboratory to Reach the Rio Grande*, Prepared for Concerned Citizens for Nuclear Safety, Second Technical Report, July 2004 ("the Rice Report"). As that report indicates, there are pathways by which the contaminants released from this and other LANL facilities, can travel through ground and surface water between LANL and the Rio Grande. Rice Report, 34-35.

The discharge permit should require that LANL evaluate alternatives to discharges from the Facility.

The Regulations provide that the NMED may require information that may be necessary to demonstrate that a discharge will not result in an exceedence of standards at any place where water may be withdrawn now or in the reasonably foreseeable future. NMAC §20.6.2.3106.C(7). Because contaminants discharged from the Facility may cause such an exceedence of standards in ground or surface water that is down gradient and down stream from the Facility, the proposed discharge plan should require LANL to evaluate whether discharges from the Facility are necessary.

Elimination or minimization of discharges from the Facility could be accomplished through advanced treatment technologies which could render any potential discharges free of contaminants and available for re-use by LANL. Even if an evaluation demonstrates that discharges are necessary, the discharge permit should mandate that LANL recycle water treated in the Facility to the maximum extent possible.

The discharge permit's effluent limits should be revised.

The effluent limit for gross alpha particle activity in the draft discharge permit is 30 pCi/L (draft discharge permit, Introduction), but that is twice the U.S. Environmental Protection Agency's drinking water standard of 15 pCi/L. The discharge permit's limit should be reduced to be consistent with that drinking water standard. In addition, the effluent limit for perchlorate is 4ug/L (*Id.*) even though LANL claims that the Facility has reduced perchlorate concentrations to less than 1 ug/L. The discharge permit should reflect the lower concentration that LANL has stated is being achieved. The discharge permit also should set limits on discharges of volatile organic compounds and semi-volatile organic compounds.

The Bureau needs more information before it can properly evaluate discharges from the Facility.

The Bureau does not have adequate information about the impact of past discharges from the Facility on surface and ground water in Mortandad Canyon and further down gradient to be able to determine accurately the effects that discharges from the Facility will have. Studies are needed to determine where discharges from the Facility travel and what their effect is on the existing contamination in the ground water and soil. For these and other reasons, DP-1132 should include flexibility that allows for appropriate modification of the permit as information becomes available, particularly through the investigations called for by the Compliance Order. Any modifications that are proposed should be considered in a process that includes public involvement. *See* NMAC §20.6.2.3108.A.

The Bureau also lacks necessary information about the wastes being treated at the Facility. For example, the Bureau should know whether it would be possible to separate waste that includes radionuclides from waste that does not prior to shipment or transfer of the waste to the Facility. The Bureau also should know whether waste containing radionuclides can be separated from waste that does not contain radionuclides prior to discharge of the waste from the Facility. In addition, the Bureau needs to know the chemistry of each of the effluent streams to be treated. This should include information on total and dissolved concentrations of all constituents regulated by the WQCC. It also should include information on the chemistry of waters that receive discharges from the Facility. If waters at other LANL technical areas receive discharges from the Facility, the Bureau should know the chemistry of those waters as well as their depth.

DP-1132 should set forth requirements concerning the wastes that are transported to the Facility and processed there.

It is appropriate to include in the draft permit the provision that restricts the facilities that may pump liquid waste to TA-50 through the Radioactive Liquid Waste Collection System (RLWCS) via double encased pipe or transport liquid waste to TA-50 by truck. The permit also should specify that any modification of this provision should require approval by the Bureau after a process involving input from the public.

The discharge permit should specify joint and several liability among the permittees.

The proposed discharge permit is addressed to DOE and the University, but it does not indicate which of those entities is responsible for what actions under the permit. In order to make clear that each of the permittees is responsible for everything called for by the permit, it should specify that the two parties are jointly and severally liable for all of the actions to be performed under the permit.

The discharge plan should address the nature, treatment, and disposal of non-liquid wastes that are generated at Facility.

In order to insure that non-liquid wastes that are generated at the Facility do not cause exceedences of standards elsewhere, the discharge permit should specify the treatment process at Technical Area 53 for evaporator distillate and reverse osmosis permeate that do not meet the criteria for discharge to Mortandad Canyon. The permit also should specify whether further treatment is required if these wastes do not meet the criteria for discharge at Technical Area 53, and should indicate where these wastes are treated and disposed.

In addition, the discharge permit should address solids removed from the primary clarifier and TUF unit, which are referred to in Operational Plan Condition No. 3, as well as the management of solids generated by treatment and proposed to be disposed of at Technical Area 54. The discharge permit also should cover containment of these wastes, whether there is a contingency plan for them, and what, if any, risk their storage and disposal pose to ground or surface water. The same considerations should be addressed for evaporator bottoms that are used in connection with Operation Plan Condition No. 3.

The discharge permit also should address these issues for the other wastes described in Operational Plan Condition No. 3. The discharge permit should include management plans and treatment for sludges, scale and other solids generated by treatment processes at Technical Area 50, such as clarifier underflow, filtration wastes, reverse osmosis concentrates, pipe scale, etc. These wastes are likely to include radionuclides, metals and organics removed from treated waste streams, and the discharge permit should provide for their management and disposal so that they do not cause ground water contamination.

The discharge plan should include additional provisions relating to monitoring and reporting.

The draft discharge permit's provisions on Monitoring, Reporting, and Other Requirements mandate monitoring of effluent quality for each effluent batch (Monitoring, Reporting, and Other Requirements, ¶13), but indicates that results must be reported only on a quarterly basis. The discharge permit should be changed to require that any exceedences that are found should be reported immediately.

The Monitoring, Reporting, and Other Requirements portion of the draft discharge permit also calls for monitoring at several specified wells. Monitoring, Reporting, and Other Requirements, ¶14. Two of those monitoring wells, MCOBT-4.4 and TW-8 are being replaced, however, and the discharge permit should require monitoring at the replacement wells. In addition, several new monitoring wells have been installed in Mortendad Canyon. The permit should require monitoring at those wells also.

The discharge plan should provide for making monitoring and other data available to members of the public in real time.

Several provisions of the draft discharge permit require monitoring and reporting to the NMED. *See*, e.g., Monitoring, Reporting, and Other Requirements ¶¶9-14 and Contingency Plans ¶¶15-19. The discharge permit should mandate that the results of those and other monitoring and sampling procedures be made available to the members of the public at the time that they are submitted to the NMED. Such results can be made available

by electronic mail to members of the public who have requested ongoing information, for other members of the public, results could be posted on a web site.

The discharge plan should provide a more specific closure plan.

The Regulations specifically provide for requirement of closure plans as part of discharge permits, and list several specific items that should be addressed in those plans (NMAC §20.6.2.3107.A(11)). Despite that, the proposed discharge permit's closure plan provides little in the way of details about closure and post-closure activities. Existing contamination in Mortandad Canyon has not been characterized adequately to develop a detailed closure plan that addresses remediation of existing ground water contamination and contaminated soils that could lead to further ground water contamination. For that reason, the discharge permit should include a closure plan that provides for alternative contingency plans to address contamination that is found.

Those alternative contingency plans should take into account that existing ground water contamination has the potential to affect ground water used for drinking water. Those plans also should take into account ground water management, including ground water pumping, treatment and discharge of treated water will most likely be necessary to protect state resources and public health. Because existing soils contamination has the potential to cause additional ground water contamination, those plans also should address remediation of soils, including excavation, treatment and/or location in a suitable repository.

Finally, a cost estimate should be provided based on the tasks included in the closure plan, and a corresponding financial assurance should be required in order to ensure that funds are available for the State of New Mexico to carry out those plans in the event that the permittees fail to carry out the necessary actions.

DP-1132 should require the posting of a financial assurance by LANL.

Because of the need for a closure plan, and because the discharges from the Facility may result in the need for remediation, DP-1132 should require the posting of a financial assurance to cover necessary costs in the event that the permittees are not able to pay for them. The Regulations specifically provide for requiring financial assurances (NMAC §20.6.2.3107.A(11)), and the potential costs involved in reclaiming and remediating contamination caused by the Facility are such that such a requirement is appropriate here. In accordance with financial assurance mechanisms requirements in other contexts, the financial assurance should be in the form of a trust account, a letter of credit, or an insurance policy, and must be payable to the State of New Mexico.

The Bureau should connect DP-1132 to the Compliance Order.

The Compliance Order is a comprehensive document calling for investigation of contamination at and around LANL facilities, including this Facility and Mortendad Canyon. Specifically, the Compliance Order calls for LANL to enhance its monitoring program in Mortandad Canyon and to provide NMED with a number of documents and reports regarding ground water in the canyon system. These data and reports may contain new information requiring action in order to protect ground water.

Therefore, in order for DP-1132 to control appropriately the discharge of water contaminants from LANL operations to ground and surface water, the Bureau should tie DP-1132 to the Compliance Order. In other words, the Bureau should include in DP-1132 provisions for taking action based on the results of the investigations mandated by the Compliance Order. DP-1132 also should provide for public involvement in decisions to be made on the basis of Compliance Order investigations results.

The discharge permit should call for the indefinite retention of records generated pursuant to the permit.

The draft discharge permit indicates that records generated pursuant to the permit shall be retained for a period of at least five years. Closure Plan ¶25. Because of the longevity of the contaminants that are in the wastes handled by the Facility, that period is not sufficient. The discharge permit should require that those records be retained indefinitely.

Conclusion

The draft discharge permit should be revised to include the additional requirements discussed above. It also should include provisions to insure that members of the public are kept informed about operations at the Facility.

We would appreciate your confirming that you have received this request for a public hearing and these comments. We also would appreciate hearing from you when the Secretary has determined whether a public hearing will be conducted.

Thank you for your cooperation.

Yours truly,

Douglas Meiklejohn
Attorney

Copies to:

Brian Shields
Executive Director
Amigos Bravos

Joni Arends
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Communities for Clean Water

A Northern New Mexico Network

December 6, 2013

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Re: Comments and Hearing Request of the *Communities for Clean Water*, *Tewa Women United* and three individuals on the proposed permit DP-1132 for the Radioactive Liquid Waste Treatment Facility ("RLWTF") at Los Alamos National Laboratory

Dear Mr. Schoeppner and Ms. Fullam:

Following below are the first set of Comments and the Hearing Request of *Communities for Clean Water* ("CCW"), *Tewa Women United* ("TWU") and individuals *Kathy WanPovi Sanchez, J. Gilbert Sanchez* and *Robert H. Gilkeson, Independent Registered Geologist*, as referenced above. We will submit a second set of Comments before the close of the public comment period on December 12, 2013.

Our Comments and Hearing Request are introduced by a section entitled "Background Information" which provides a brief description of the history and composition of CCW, TWU, and the individual commenters, so that your agency and the Secretary-Designate understand the basis and existence of the substantial public interest in the RLWTF permit. In the event that final terms of the permit cannot be negotiated by the commenters, your agency and Los Alamos National Laboratory ("LANL"), there is substantial public interest sufficient to warrant a public hearing--and we specifically request that a public hearing be held.

Additionally, we have divided our comments into two other sections: general and specific permit comments. The general comments raise long-standing issues in relation to the issuance of this permit. The specific comments address what we view as necessary, substantive changes in the permit.

I. BACKGROUND INFORMATION

A. Organizations and Persons Commenting and Requesting A Hearing;

1. CCW, Tewa Women United and Kathy WanPovi Sanchez, J. Gilbert Sanchez and Robert H. Gilkeson.

CCW is a network of non-governmental organizations comprised of *Amigos Bravos, Concerned Citizens for Nuclear Safety* (CCNS), *Honor Our Pueblo Existence* (H.O.P.E.). *Tewa Women United* and individuals, Kathy WanPovi Sanchez, J. Gilbert Sanchez and Robert H. Gilkeson, Independent Registered Geologist, join CCW in submitting this first set of comments. Collectively, our members live downwind and downstream of LANL and are concerned about the discharge of up to 40,000 gallons per day of effluent from Technical Area 50 ("TA-50") into Mortandad Canyon and the evaporation of radioactive tritium and other pollutants into the atmosphere, the subject of the draft permit. The members of CCW and TWU, along with the individuals, represent a significant number of persons who are interested in the determinations on this permit.

CCW History. After the catastrophic Cerro Grande fire in 2000, Concerned Citizens for Nuclear Safety (CCNS) became alarmed about the transport of toxic materials off the LANL site into the Río Grande watershed. CCNS organized a conference that summer that drew over 450 participants. Amigos Bravos joined the effort in 2003, investigating stormwater discharges at LANL. The *Embudo Valley Environmental Monitoring Group*, which investigated downwind LANL impacts to their watershed, began collaborating in 2005. *Honor Our Pueblo Existence* (H.O.P.E.), a Pueblo Nation community-based organization, later joined the effort with a particular concern for the cultural impacts of LANL toxics. These groups formed the core that in early 2006 became *CCW*.

Starting in 2006, *CCW* pursued two independent, but related activities: (a) a campaign to prevent migration of LANL toxics to the Rio Grande watershed; and (b) an outreach campaign directed at impacted communities, the media, and public officials. CCW began questioning the adequacy of LANL's Environmental Management ("EM"). When it became clear that LANL's EM activities were inadequate and not likely to improve, members of CCW joined with other community-based organizations, including *TWU* and individuals, Kathy WanPovi Sanchez and J. Gilbert Sanchez, in March 2008 to file a Clean Water Act citizen complaint against United States Department of Energy ("DOE") and LANL for wide-ranging and chronic stormwater-related violations. Filing the lawsuit won *CCW* an invitation in late 2009 to participate in LANL's first Individual Stormwater Permit ("ISP"), issued by the Environmental Protection Agency ("EPA"). When the draft ISP failed to provide enough assurances, *CCW* filed an administrative appeal with the EPA, which led to another year of negotiations. In 2010, EPA approved what they have said is one of the strongest individual stormwater permits in the country.

With many of the stormwater issues resolved in the ISP, the litigation was settled in April 2011, after two years of negotiation resolved many of the remaining issues, especially providing for greater public input and financial support for technical experts to support that public input.

In order to protect public health, welfare, safety and the environment, the goals of *CCW* are to:

- Create a broad community-based movement.
- Protect precious water resources from contamination now and for the benefit of future generations.
- Hold local, state and federal regulators accountable to use their regulatory and enforcement powers and fulfill their public trust responsibilities.
- Hold LANL and those degrading the environment accountable for water contamination.
- Ensure the highest possible level of clean up at contaminated sites.

Tewa Women United ("TWU") History. TWU is a collective intertribal women's voice in the Tewa homelands of Northern New Mexico. The name Tewa Women United comes from the Tewa words *wi don gi mu* which translates to "we are one."

TWU was started in 1989 as a support group for women concerned with the traumatic effects of colonization leading to issues including alcoholism, suicide, terricide, environmental violence and domestic and sexual violence. In the safe space women created, we transformed and empowered one another through critical analysis and the embracing and re-affirming of our cultural identity.

In 2001 TWU transitioned from an informal, all volunteer group to a formal 501(c)3 non-profit organization.

Tewa Women United was incorporated for educational, social and benevolent purposes, specifically for the ending of all forms of violence against Native Women and girls, Mother Earth and to promote peace in New Mexico.

The Vision of TWU. Sovereignty is living the truth from the heart. TWU's vision is embodied in the Tewa words *wo watsi* the breath of our work. In other words, our path of life follows us into daily work.

The Mission of TWU. The mission of TWU is to provide safe spaces of Indigenous women to uncover the power, strength and skills they possess to become positive forces for social change in their families and communities.

Kathy Wanpovi Sanchez resides at the Pueblo de San Ildefonso. She is not representing the Pueblo de San Ildefonso in this matter. She is a fourth generation potter of the Julian and Maria Martinez family lineage. She has had direct contact with her great grandmother, Maria. The oral tradition wisdom and life narratives transmitted to her go back a very long, long time. What she refers to as sacred is where Los Alamos National Laboratory is located. It is her ancestral homeland. It is a sacred place that holds the present and ancestral energy of being.

J. Gilbert Sanchez resides at the Pueblo de San Ildefonso. He is a former Governor of the Pueblo. He created the Pueblo's Environmental Protection, Cultural Preservation and Land Management Offices. He served as Director of the Los Alamos Pueblos Project. In this matter, he does not represent the Pueblo de San Ildefonso. He sat on the State and Tribal Working Group at the Department of Energy Secretarial level for 12 years and on the Board of Scientific Counselors as a Community Representative for over 12 years.

Robert H. Gilkeson, Independent Registered Geologist, is a former contractor at LANL, specializing in the Environmental Remediation Programs and Groundwater Protection Programs. He was a research scientist at the University of Illinois for 17 years. Over the past decade, he has provided *pro bono* technical expertise to CCW, TWU and the individuals Kathy WanPovi Sanchez and J. Gilbert Sanchez about the seismic, groundwater protection and waste remediation issues at LANL.

B. The Permit History And Need For Additional Time And Documents.

1. The Permit First Drafted In the 1990s. NMED first released a draft permit for public comment in the mid-1990s. CCNS, through its staffer, Susan Diane, asked for a public hearing. There were delays, until 2005, when NMED released a draft permit for public comment. On August 4, 2005 Amigos Bravos, represented by the New Mexico Environmental Law Center, submitted comments and requested a public hearing. Letter to William C. Olson, NMED, from Attorney Douglas Meiklejohn (August 4, 2005), attached hereto as Exhibit 'A'.

For the third time, the public provides these public comments. We appreciate that NMED provided a 90-day public comment period given the amount of public interest in the RLWTF. We incorporate our previous comments by reference in order to demonstrate the longstanding significant public interest in this permit.

2. Requests for extension of time to submit comments and obtain necessary background documents have been denied. We made a request to NMED for an extension of time to submit these comments due to the October 2013 federal government shutdown, which was denied. Further, we have requested data and documents from the Permittees and the EPA, which responses have been incomplete. Additional effort was required to obtain the needed information in order to provided informed comments to NMED. On November 27, 2013 we filed Freedom of Information Act requests with the DOE and EPA in order to obtain data and additional information from both the DOE/LANL and EPA about tritium emissions from both evaporation units. If there are additional delays in obtaining the data and documents, we request the opportunity to provide additional comments following the completion of the comment period on December 12, 2013. We believe additional time should be provided.

II. GENERAL COMMENTS ON THE PERMIT.

A. Introduction: Acknowledging Our Government's Occupation and Pollution of Sacred Places. We begin by acknowledging the sacred place where the discharges are occurring. LANL is discharging into the ground and making emissions into the air in the Sacred Mountains of the Pueblo Peoples who were told by the U.S. Government that the Pajarito Plateau would be used for a short time and then it would be returned to the People. The Plateau has been used, and projected for use, by the U.S. Government for at least the next 50 years. One hundred and twenty years is not a short amount of time.

1. Section 43. Need for Closure and Post-Closure Plans for TA-50 Now – Not 180 Days Following the Issuance of the Permit. NMED must require the DOE and LANL (the "Permittees") to provide the closure and post-closure plans for the RLWTF as part of their application for groundwater discharge permit DP-1132. *See* 20.6.2.3107(A)(11) NMAC (closure plan required that will "prevent the exceedance [water quality] standards . . . in ground water or abate such contamination"). The draft permit allows for DOE and LANL to submit the closure plans 180 days following the issuance of the permit. This creates a situation that places both the public and NMED at a distinct disadvantage and creates a substantially increased cost of the permitting process at a time when state resources are scarce. Both the public and the Ground Water Quality Bureau need to see both the plans for operation and closure of the 50-year old facility now in order for the agency to craft an appropriate permit and the public to provide informed public comments. By bifurcating the permitting process from the closure process there will have to be two permit proceedings which will cost NMED and the public time, resources and money. By including the closure and post closure plans with the permit – as required – both public and agency resources are appropriately conserved and a higher level of informed decision-making can be achieved. That is a benefit to NMED, and the public it serves. Moreover, requiring the closure plan before the time of

permit issuance will also conserve federal tax dollars, as LANL, a federally funded facility, will only have to undergo one ground water permitting process for the RLWTF.

DOE and LANL have already had more than ample time to prepare the closure and post-closure plan for this facility. A draft of discharge permit DP-1132 was issued in 1995 and on June 10, 2005. In response to the draft permits, public comments were submitted that raised the requirement for the inclusion of a closure and post-closure plan. Seventeen years and eight years of notice is more than a reasonable amount of time for LANL to fulfill the legal requirement that it provide its closure and post closure plans with its permit application for the RLWTF.

Please carefully consider this conservative approach to the permitting of TA-50 in which all sides save money and time. The Ground Water Quality Bureau should require DOE/LANL/LANS to submit the closure and post closure plans for agency review now and before issuance of a revised permit.

2. We note that the Outfall 051 discharge pipe is surrounded by the Los Alamos County drinking water wells. NMED states in the draft permit:

> The discharge from the Facility is within or into a place of withdrawal of ground water for present or reasonably foreseeable future use within the meaning of the [Water Quality Act], NMSA 1978, § 74-6-5.E.3, and the [Water Quality Control Commission] Regulations at 20.6.2.3103 NMAC. Section IV. Findings, p. 9.

Los Alamos County residents rely upon the regional aquifer for 100 percent of their drinking water. The ground water of TA-50 is a present and future source of drinking water: a place of withdrawal of ground water for present and reasonably foreseeable future use within the meaning of the Water Quality Act, *id.* at , § 74-6-5.E.3 and Water Quality Control Commission Regulations at 20.6.2.3103 NMAC. We have a special concern about protecting the present and future use of the drinking water supply as required by the New Mexico Water Quality Act (WQA) and regulations adopted pursuant to the WQA.

At issue are numerous radioactive and other hazardous contaminants that have been, and continue to be, discharged by LANL into Mortandad Canyon. These pollutants – including known carcinogens – are migrating into the regional aquifer. Besides the detrimental effects of such discharges on human and environment health, it is feared that some of these pollutants will enter the drinking water supply of Los Alamos and communities downstream of LANL.

3. **LANL has several reports going back to the 1970s of its studies on the need and efficacy of turning the RLWTF into a "zero discharge" facility.**[1] In its application, as well previous studies of the RLWTF, LANL points to the fact that its discharges from the facility are already extremely minimal. Given the data that LANL has provided, it is questionable as to whether this facility should receive an NPDES permit or should be permitted as a RCRA hazardous waste processing facility. NMED in consultation with Region 6 of the EPA should make a determination regarding the correct regulatory fit, given the fact that there are minimal discharges and the facility has the capacity to be a "zero discharge" facility according to the applicant. Were the facility equipped with an emergency storage tank capable of holding a day of maximum capacity discharge plus necessary "freeboard", it would be able to operate without discharging under an NPDES permit.

The draft permit states:

> The discharge may contain water contaminants with concentrations above the standards of 20.6.2.3103 NMAC and may contain toxic pollutants as defined in 20.6.2.7 WW NMAC. Section III, page 8.

We fully support NMED having reserved, in the permit, the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or that the standards of 20.6.2.3103 WW NMAC is present. *See id.* Additionally, the permit should reference and provide as an

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[1] Collins, K., Rife, J., Rae, S. and Hanson, S., "Los Alamos National Pollution Discharge Elimination System Permit Compliance and Outfall Reduction Strategy," LA-UR-07-8312 (December 20, 2007) ("Collins *et al.*"). See, for example, zero discharge project described at 3-6; description of declining output from facility at 7-16 to 7-17.

Moreover, this is not a new consideration for LANL. The Collins *et al.* report states that, "Zero liquid discharge of effluent was considered in 1977 with the proposed construction of 14 acres of evaporative ponds on Sigma Mesa." *Id.* at 7-17. Furthermore, a "1998 a report entitled *Elimination of Liquid Discharge to the Environment from the TA-50 Radioactive Liquid Waste Treatment Facility* (Moss et al., 1998) again recommended zero discharge of effluent from the TA-50 RLWTF. In 2003, a new working group was formed and completed a second report. These two reports provide the basis for the current Zero Liquid Discharge (ZLD) Project which is scheduled as a design/build project for FY08 or FY09." at 7-17. See also the Collins report recommendations which support the notion that the current facility should, by now, be a zero-discharge facility. Recommendations at 7-17 through 7-20; 8-3 to 8-4, and, at 8-4 to 8-5, see "Recommendations for FY08 Scope to Implement the NPDES Permit Compliance and Outfall Reduction Strategy."

Of course, were LANL to actually implement the recommendations of its scientists and technicians over the last thirty six (36) years, it would be seeking a RCRA permit for the hazardous waste treatment facility rather than relying upon discharging, as needed, its toxic, radioactive wastes into the human and natural environment.

appendix the information LANL provided to EPA concerning air emissions of tritium from the evaporation units. While we recognize that the permitting is being done under the Water Quality Act by the Ground Water Quality Bureau, LANL has long recognized that the use of the evaporation units triggers the need for air quality approvals from EPA and the state of New Mexico. [2]

III. COMMENTS ADDRESSED TO SPECIFIC PORTIONS OF THE PERMIT.

A. Specific Portions Of The Permit Need To Be Changed.

1. Section I. Acronyms, Definitions and Tables, at page 4. COMMENT: Reference to and the standard for Total Residual Chlorine (TRC) was removed **is not present in?** from the acronym list, definitions and Tables. TRC should have an effluent limit and be required for sampling, analysis and reporting under this permit.

2. Section II. Definitions, at page 5. COMMENT (1) The definition of 'calibration' should appear in the Definitions section of the permit; (2) "Practice of Engineering" does not appear in the definitions section--unless it is reinstated, the definition of 'Record Drawings' should include the statement that the official record of the actual as-built conditions of the completed construction "are certified and bear the seal and signature of a Professional Engineer licensed to practice engineering in the State of New Mexico."

3. Section II.BB. Definition of Total Polychlorinated Biphenyls (PCBs), at page 7. COMMENT: The EPA stormwater permit for LANL requires that the Permittees use Method 1668 Revision A, or the most current revisions of the Congener Method, for PCB analysis. *See* Part I.C, footnote (*4). This is also a requirement of the industrial surface water NPDES permits. For purposes of analytic consistency, NMED should require the use of Method 1668 Revision A for PCB analyses done under the draft RLWTF permit.

Additionally, the permit should be corrected to reference Method 1668C *Chlorinated*

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[2] *Id.* at 2-9 ("[E]missions from mechanical evaporators and evaporation ponds must be addressed when evaluating options for permit compliance and outfall reduction"); also at 5-1, LANL anticipated that NMED would impose requirements, under it ground water permitting of the evaporation facilities that are more comprehensive than the current permit requirements ("Evaporation basins or tanks may require Groundwater Discharge Permits that specify design items such as liner materials, lining requirements, monitoring, recordkeeping, operation and maintenance requirements, and performance standards") (emphasis added).

Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS in §IV.B.19.[3]

4. Section III. Introduction, at page 8. COMMENT: The first paragraph should include language that the permit is for operations at Los Alamos National Laboratory (LANL).

5. Section V.D. Authorization to Discharge, at page 10. COMMENT: (a) Influent Collection System conveyance lines should be double walled; (b) the type of gas used in the Mechanical Evaporator System should be disclosed in the permit; (c) the Solar Evaporative Tank System should not be a "unsealed subgrade concrete structure" rather is should be sealed, especially considering that the leak detection is a single rather than a double leak detection system.

6. Section VI.A.3(g) Submittal of Plans and Specifications, at page 13. COMMENT: The same concern regarding DOE Standard 1020-2012 applies here. The Standard requires that all facilities meet seismic qualification. Given that DOE requirement and that the terminus of the Guaje Mountain Fault is in the area of TA-50/TA-55, the permit should require that the RLWTF be in compliance with all federal regulations, including DOE seismic qualification under Standard 1020-2102.

7. Section VI.A.3(j). Submittal of Plans and Specifications, at page 13. COMMENT: This provision, at either j or k, should include requiring installation of a camera as part of the detecting the failure of either primary or secondary containment or the presence of a release.

8. Section VI.A.6. Signs, at page 14. COMMENT: *Honor Our Pueblo Existence* requested the provision of warning signs in Tewa in the NMED Hazardous Waste Permit for LANL. *See §2.5.1 of the Hazardous Water Permit.* In this permit, LANL and NMED should be required to contact Santa Clara Pueblo, as well as the other three Accord Pueblos, about what type of signs each Pueblo requires and put those requirements in the permit.

9. Section VI.A.8. Water Tightness Testing, at page 15. COMMENT: There is no human health and safety benefit in allowing an infiltration or infiltration rate of up to 50 gallons per mile per consecutive 24-hour period. No regulation allows such an excess amount of leakage and there is no lawful justification for doing so. The permit should be changed to disallow this level of leakage. Moreover, it is inconsistent with the permit requirements at Section 30, Water-Tightness, which require leak testing in every

[3] Collins *et al.*, "Los Alamos National Pollution Discharge Elimination System Permit Compliance and Outfall Reduction Strategy," *id.*, acknowledged the need to use (and recommended) this methodology. *See* 7-20, 7-22.

piping segment rather than a calculation of the average rate of leakage. A maximum for leakage should be specified "as low as reasonably achievable" (ALARA) with some threshold that will be protective of human health.

10. Section VI.A.9. Settled Solids, at page 16. COMMENT: This section should specify where the settled solids will be measured. It is unclear whether measurements will be taken at the Solar Evaporative Tank (SET) System and/or the Mechanical Evaporator System (MES). The permit should explain the depth of the SETs in "Section V. Authorization to Discharge," at page 9.

11. Section VI.A.10.b. Facility Inspections, at page 17. COMMENT: The term for inspection (weekly, monthly) of "visual portions of all synthetic liners used to store or dispose of liquids or semi-liquids" should be stated in the permit. Moreover, as the terms of inspection are stated for other portions of the facility, it is inconsistent for the permit to fail to specify terms of inspection for all portions of the facility.

12. Table 1. Effluent Quality Limits for Discharges to Outfall 051, at page 19: COMMENT: Effluent limits for perchlorate are nearly three times as high as in the draft 2005 permit and nearly twice the current California standard. The limitations for perchlorate should be about one tenth of those in Table 1. Moreover, in 2006, LANL published a graph in a briefing paper written by the Nuclear Waste and Infrastructure Services Division, Radioactive Liquid Waste Group, "Radioactive Liquid Waste Treatment Facility, Los Alamos National Laboratory, TA-50" (May 17, 2006). The graph shows that, excepting a single spike in a three-month period, perchlorate, close to the end of 2004, had been reduced to near zero. Surely, in 2013, LANL should be able to reduce its perchlorate discharge to at least the California standard, if not to zero.

13. Table 1. Effluent Quality Limits for Discharges to Outfall 051, at page 19. COMMENT: The 2005 draft permit had a permit limit of .00077 mg/L for mercury. The current draft has a limit of .0022 mg/L for mercury. If anything the limit today should be more, not less stringent and protective of occupational and public health and safety than it was eight (8) years ago.

14. Table 1. Effluent Quality Limits for Discharges to Outfall 051, at page 19. COMMENT: The 2005 draft had a zinc effluent limit of 4.37 mg/L. Again, the current revised draft permit has a less protective, less stringent limit set at 10 mg/L. The current limitation should be more protective of occupational and public health and safety than that proposed eight (8) years ago. The limits set in the revised draft permit should be at least as protective as they were before, absent some scientific justification for setting less protective and stringent limits.

15. Table 1. Effluent Quality Limits for Discharges to Outfall 051, at page 20. COMMENT: The limit for "Radioactivity" is higher than parties to the draft

permit wanted in 2005. It is currently set at ~~30 pCi/L~~. That limit should be 15 pCi/L. Given the technological advances in remediation technologies since the 2005 draft permit, it is reasonable and achievable--and properly protective of public health and safety--to limit tritium emissions to 15 pCi/L in this permit as part of the radioactivity limits in this permit. The briefing paper cited above also contains a graph showing that LANL, between January 2004 and September 2004 had reduced the amount of radioactive material discharged to the environment to near zero. Surely, in 2013, it is not unreasonable for LANL to accept a limit of 15 pCi/L for Radioactivity.

16. Tables 1 and 2. Effluent Quality Limits for Discharges to Outfall 051 and Effluent Quality Limits for Discharges to the MES and SET, at pages 19-21.
COMMENT: In the 2005 draft permit there was a tritium limit of 20 nCi/L. There is no tritium limit in this current draft permit, despite the fact that Los Alamos National Security, LLC, ("LANS") stated that it was intending to achieve "zero discharge" for tritium. Again, both the goal of "zero discharge" and, in the event that goal is not achieved, a tritium limit of 20 nCi/L should be inserted into the permit in order to be adequately protective of occupational and public health and safety. Tritium evaporation capabilities at LANL have, theoretically, been enhanced as part of the plan to achieve a "zero discharge" RLWTF. For this purpose, LANL now has both a "synthetically lined Solar Evaporative Tank system (SET)" and the Mechanical Evaporator System (MES) at TA-52. Given the additional facility for tritium evaporation, there should be limits in this permit that are consistent with LANL's supplemental treatment equipment for tritium. There should also be a deadline in the permit for the Permittees to achieve "zero discharge" given that LANL has been working on this since the 1970s.[4]

17. Section VI.A.13. Effluent Limits: Outfall 051, at page 20.
COMMENT: There is no justification for the permit providing that "constituents that are subject to effective and enforceable limitations under NPDES Permit NM0028355 for discharges to Outfall 051, that are lower than the effluent limits under this Discharge Permit are exempt." The permit should be consistent with state and federal law in the level of protection of water quality and human health and safety. This requires using language in the permit that specifies the more protective standard (be it state or federal) as the one applying to any and all discharges.

18. Section VI.A.17. Installation of Flow Meters, at page 22.
COMMENT: Considering the public has been waiting for almost two decades for this permit and that LANL has been working on making the existing facility a zero discharge facility since 1977, CCNS requests that the Permittees be required to install the flow meters within 30 days of the effective date of the GWDP. It is outrageous to provide six additional months after the effectiveness date of the permit for the implementation of

[4] *Supra* note 1 (discussing the history of LANL studies recommending that the RLWTF be a "zero discharge" facility and indicating the capacity to achieve that objective).

flow metering within the RLWTF.

19. Section VI.A.18. Calibration of Flow Meters, at page 23. COMMENT: The calibration of flow meters should also be done within 30 days of the effective date of the permit as flow meter calibration is not very difficult to perform. Additionally, there is no engineering justification for a calibration rate of plus or minus 10% of actual flow when the standard is plus or minus 5%.

20. Section VI.B. 24.b. Waste Tracking, at page 26. COMMENT: Regardless of whatever lag time there may be between approval and conveyance of waste to TA-50, it is important to know when the waste stream is conveyed as well as when it was approved. The permit should be changed to clearly state when the waste stream is conveyed as well as when it was approved.

21. Section VI.B.25. Effluent Sampling, at page 26. COMMENT: The permit should require sampling for PCBs at Outfall 051, the MES and SET in the monthly and quarterly sampling events. *See* 20.6.2.3103 (A)(15) and 20.6.2.7.WW (39), NMAC (requirements for monitoring and limitations on PCBs in discharges). The type of discharge expected from the MES and SET should be specified so the reason for a quarterly sampling requirement is readily apparent. In addition, there should be a specification of the flow path for such discharges.

22. Section VI.C.29. Containment, at page 30. COMMENT: The language in the paragraph at the end of this section with respect to "long-term actions" to maintain the integrity of the secondary containment raises concerns. The nature, extent and limitations on what constitutes appropriate actions should be specified in the permit. The permit should require any proposal be noticed to the public for comment as well as the opportunity to request a public meeting; and that any proposal be posted promptly on LANL's Electronic Public Reading Room--not at the end of the process as the permit appears to allow.

23. Section VI.C.32. Damage to Structural Integrity, at page 33. COMMENT: This section should include a requirement for the Permittees to provide NMED with an oral 24-hour notice about any significant damage to the structural integrity of any unit or system.

24. Section VI.D.41. Cessation of Operation of Specific Units, at page 40. COMMENT: The permit needs to include the workplan for stabilization of five units that are required to be closed within 60 days of the effective date of the permit.

25. Section VI.D.42. Stabilization of Individual Units and Systems, at page 40. COMMENT: This section should include the pipes that have been used to move waste from TA-50 to the TA-53 evaporation tanks or similar structures.

We plan to submit, as noted above, additional comments supplementing the above as part of our Comments and Request for Public Hearing on the RLWTF permit.

We thank you for your careful consideration of these comments and our request for a hearing on this permit.

Respectfully submitted:

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NEW MEXICO
ENVIRONMENTAL LAW CENTER

Copy

AUG 04 2005

August 4, 2005

William C. Olson
Bureau Chief
Ground Water Bureau
New Mexico Environment Department
1190 St Francis Drive
Santa Fe, New Mexico

Hand delivered

Re: Application of the U.S. Department of Energy and the University of California for renewal of discharge permit DP-1132 for the Radioactive Liquid Waste Treatment Facility at Los Alamos National Laboratory

Dear Bill:

I write as counsel for Amigos Bravos to request a public hearing and to comment on the draft discharge permit DP-1132 issued by the Ground Water Bureau of the New Mexico Environment Department on April 11, 2005 and re-issued on June 10, 2005.

Introduction

The Ground Water Bureau ("the Bureau") of the New Mexico Environment Department ("NMED") indicated in its April 11, 2005 notice of issuance, and its June 10, 2005 notice of re-issuance, of the draft of discharge permit DP-1132 that it proposes to issue DP-1132 to the U.S. Department of Energy ("DOE") and the University of California ("the University") for the Los Alamos National Laboratory Radioactive Liquid Waste Treatment Facility at Technical Area 50 ("the Facility") within the Los Alamos National Laboratory ("LANL"). The June tenth re-issuance notice stated that public comments and requests for a public hearing must be submitted on or before August 4, 2005.

This request for a public hearing and these comments are submitted by Amigos Bravos, a non-profit community based organization that is concerned about the impacts of the Facility on ground and surface water in New Mexico. Amigos Bravos appreciates the effort by the Bureau to address the discharges from the Facility. Amigos Bravos also appreciates this opportunity to be involved in the Bureau's consideration of the issues presented by those discharges. This request for a public hearing and these comments are submitted pursuant to the New Mexico Water Quality Act and the New Mexico Water Quality Control Commission Regulations.

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Request for public hearing

Amigos Bravos' request for a public hearing should be granted for two reasons. First, there is significant public interest in this proposed discharge permit. Second, there are significant issues that must be addressed before the discharge permit is issued in final form.

The New Mexico Water Quality Act and its implementing regulations provide for public hearings.

The New Mexico Water Quality Act, NMSA 1978 §§ 74-6-1 *et seq* ("the Act") provides that the Water Quality Control Commission ("WQCC") shall adopt regulations providing for notice to the public of applications for permits under the Act. NMSA 1978 §74-6-5 F That section also provides that no ruling on an application for a permit shall be made without opportunity for a public hearing at which all interested persons have the chance to present their views and arguments, and to cross examine witnesses provided by other parties *Id.*

The Water Quality Control Commission Regulations ("the Regulations") adopted to implement these provisions indicate that the NMED shall conduct a public hearing or meeting if the Secretary determines that there is significant public interest. NMAC §20.6.2.4108 D. There is significant public interest in the proposed discharge permit that is the subject of this proceeding.

This request is made by the board of directors, the staff, and the members of Amigos Bravos, a community based non-profit organization. The mission of Amigos Bravos includes an emphasis on protection of the Rio Grande watershed, and Amigos Bravos has a particular interest in this proceeding. Moreover, Amigos Bravos' extensive membership includes many members who live down stream and down gradient from LANL and who are therefore at risk from contamination discharged by the Facility that is the subject of proposed discharge permit DP-1132.

Amigos Bravos' mission and strategic plan call for addressing contamination from LANL.

The mission of Amigos Bravos includes several specific goals. These are: 1) to return New Mexico's rivers and the Rio Grande watershed to drinkable quality wherever possible, and to contact quality everywhere else; 2) to see that natural flows are maintained and where those flows have been disrupted by human intervention, to see that they are

regulated to protect and reclaim the river ecosystem by approximating natural flows; and 3) to preserve and restore the native riparian and riverine biodiversity. Amigos Bravos supports the environmentally sound, sustainable traditional ways of life of indigenous cultures and holds that environmental justice and social justice go hand in hand.

Amigos Bravos' Board of Directors adopted the Amigos Bravos Strategic Plan in July 2003. That Strategic Plan identifies the use of state and federal regulatory processes to stop ground and surface pollution migrating from LANL facilities as a key component of Amigos Bravos' work, particularly the organization's work to protect and restore water quality and quantity in White Rock Canyon.

Amigos Bravos believes that state ground water discharge permits provide the public with a unique opportunity to work with the State, and the polluting facility, to develop the best possible protection for ground water in both the short term and after closeout of the facility. By preventing additional pollution from being released, and by requiring clean up of historic releases, the public's right to clean water will be protected. The proposed issuance of discharge permit DP-1132 to LANL provides Amigos Bravos with an opportunity to serve New Mexico's citizens by protecting the state's future drinking water resources while furthering its mission.

Amigos Bravos' extensive membership includes a substantial number of people who may be affected by contamination from the Facility.

Amigos Bravos' membership of more than 1,600 people reflects the geography of its constituency, with about 80 percent residing in-state. Within New Mexico, a substantial number of the members live in Los Alamos, Santa Fe, and Albuquerque. Because contaminants discharged by the Facility may reach ground water, the Amigos Bravos members who live in Los Alamos are at risk from contamination discharged by that Facility. Since discharges from that Facility also have the potential to reach the Rio Grande, Amigos Bravos members in Santa Fe and Albuquerque are at risk from contamination released by that Facility. There are therefore a substantial number of Amigos Bravos members who may be affected by discharges governed by proposed discharge permit DP-1132.

On the basis of the interests of Amigos Bravos' membership alone, there is significant public interest in the proposed discharge plan DP-1132. Moreover, Amigos Bravos is not the only organization that is requesting a public hearing concerning proposed discharge plan DP-1132. A similar request is being made by Concerned Citizens for Nuclear Safety, a non-profit organization based in Santa Fe that has a long standing interest in the operations of the LANL, and whose request is backed by that group's Board of Directors, Staff, and membership.

There is therefore significant public interest in the draft DP-1132, and the NMED Secretary should grant this and other requests for a public hearing.

Comments on the draft DP-1132.

These comments are divided into the following categories: comments on the impacts of discharges from the Facility, questions about the need to discharge from the Facility and the alternatives to discharging from the Facility, comments on effluent limits, information that is needed in order to evaluate the impacts of the discharges from the Facility, comments concerning the wastes that are taken into and processed in the Facility, joint and several liability among the permittees for obligations under the permit, comments and questions about the treatment and disposal of non-liquid wastes generated at the facility, comments on the monitoring measures called for by the draft discharge permit, comments concerning the provision of monitoring and other data to members of the public, comments on the proposed closure plan for the Facility, comments on the need for a financial assurance for the discharge permit, comments on the relationship of DP-1132 to the Compliance Order on Consent entered into between the NMED, the DOE, and the University on March 1, 2005 ("the Compliance Order"), and comments on the retention of records by the permittees.

These comments are not meant to address all issues that exist or may arise with respect to the proposed discharge permit. Amigos Bravos reserves the right to raise other issues in other contexts, including negotiations and a public hearing, concerning the proposed permit.

Discharges from the Facility have the potential to impact aground water and down gradient surface water.

The potential for contaminants from Technical Area 50, where the Facility is located, to reach the Rio Grande was documented by George Rice in *New Mexico's Right to Know: The Potential for Groundwater Contaminants from Los Alamos National Laboratory to Reach the Rio Grande*, Prepared for Concerned Citizens for Nuclear Safety, Second Technical Report, July 2004 ("the Rice Report"). As that report indicates, there are pathways by which the contaminants released from this and other LANL facilities, can travel through ground and surface water between LANL and the Rio Grande. Rice Report, 34-35

The discharge permit should require that LANL evaluate alternatives to discharges from the Facility.

The Regulations provide that the NMED may require information that may be necessary to demonstrate that a discharge will not result in an exceedence of standards at any place where water may be withdrawn now or in the reasonably foreseeable future. NMAC §20.6.2.3106.C(7). Because contaminants discharged from the Facility may cause such an exceedence of standards in ground or surface water that is down gradient and down stream from the Facility, the proposed discharge plan should require LANL to evaluate whether discharges from the Facility are necessary.

Elimination or minimization of discharges from the Facility could be accomplished through advanced treatment technologies which could render any potential discharges free of contaminants and available for re-use by LANL. Even if an evaluation demonstrates that discharges are necessary, the discharge permit should mandate that LANL recycle water treated in the Facility to the maximum extent possible.

The discharge permit's effluent limits should be revised.

The effluent limit for gross alpha particle activity in the draft discharge permit is 30 pCi/L (draft discharge permit, Introduction), but that is twice the U.S. Environmental Protection Agency's drinking water standard of 15 pCi/L. The discharge permit's limit should be reduced to be consistent with that drinking water standard. In addition, the effluent limit for perchlorate is 4ug/L (*Id.*) even though LANL claims that the Facility has reduced perchlorate concentrations to less than 1 ug/L. The discharge permit should reflect the lower concentration that LANL has stated is being achieved. The discharge permit also should set limits on discharges of volatile organic compounds and semi-volatile organic compounds.

The Bureau needs more information before it can properly evaluate discharges from the Facility.

The Bureau does not have adequate information about the impact of past discharges from the Facility on surface and ground water in Mortandad Canyon and further down gradient to be able to determine accurately the effects that discharges from the Facility will have. Studies are needed to determine where discharges from the Facility travel and what their effect is on the existing contamination in the ground water and soil. For these and other reasons, DP-1132 should include flexibility that allows for appropriate modification of the permit as information becomes available, particularly through the investigations called for by the Compliance Order. Any modifications that are proposed should be considered in a process that includes public involvement. *See* NMAC §20.6.2.3108.A.

The Bureau also lacks necessary information about the wastes being treated at the Facility. For example, the Bureau should know whether it would be possible to separate waste that includes radionuclides from waste that does not prior to shipment or transfer of the waste to the Facility. The Bureau also should know whether waste containing radionuclides can be separated from waste that does not contain radionuclides prior to discharge of the waste from the Facility. In addition, the Bureau needs to know the chemistry of each of the effluent streams to be treated. This should include information on total and dissolved concentrations of all constituents regulated by the WQCC. It also should include information on the chemistry of waters that receive discharges from the Facility. If waters at other LANL technical areas receive discharges from the Facility, the Bureau should know the chemistry of those waters as well as their depth.

DP-1132 should set forth requirements concerning the wastes that are transported to the Facility and processed there.

It is appropriate to include in the draft permit the provision that restricts the facilities that may pump liquid waste to TA-50 through the Radioactive Liquid Waste Collection System (RLWCS) via double encased pipe or transport liquid waste to TA-50 by truck. The permit also should specify that any modification of this provision should require approval by the Bureau after a process involving input from the public.

The discharge permit should specify joint and several liability among the permittees.

The proposed discharge permit is addressed to DOE and the University, but it does not indicate which of those entities is responsible for what actions under the permit. In order to make clear that each of the permittees is responsible for everything called for by the permit, it should specify that the two parties are jointly and severally liable for all of the actions to be performed under the permit.

The discharge plan should address the nature, treatment, and disposal of non-liquid wastes that are generated at Facility.

In order to insure that non-liquid wastes that are generated at the Facility do not cause exceedences of standards elsewhere, the discharge permit should specify the treatment process at Technical Area 53 for evaporator distillate and reverse osmosis permeate that do not meet the criteria for discharge to Mortandad Canyon. The permit also should specify whether further treatment is required if these wastes do not meet the criteria for discharge at Technical Area 53, and should indicate where these wastes are treated and disposed.

In addition, the discharge permit should address solids removed from the primary clarifier and TUF unit, which are referred to in Operational Plan Condition No. 3, as well as the management of solids generated by treatment and proposed to be disposed of at Technical Area 54. The discharge permit also should cover containment of these wastes, whether there is a contingency plan for them, and what, if any, risk their storage and disposal pose to ground or surface water. The same considerations should be addressed for evaporator bottoms that are used in connection with Operation Plan Condition No. 3.

The discharge permit also should address these issues for the other wastes described in Operational Plan Condition No. 3. The discharge permit should include management plans and treatment for sludges, scale and other solids generated by treatment processes at Technical Area 50, such as clarifier underflow, filtration wastes, reverse osmosis concentrates, pipe scale, etc. These wastes are likely to include radionuclides, metals and organics removed from treated waste streams, and the discharge permit should provide for their management and disposal so that they do not cause ground water contamination.

The discharge plan should includs additional provisions relating to monitoring and reporting.

The draft discharge permit's provisions on Monitoring, Reporting, and Other Requirements mandate monitoring of effluent quality for each effluent batch (Monitoring, Reporting, and Other Requirements, ¶13), but indicates that results must be reported only on a quarterly basis. The discharge permit should be changed to require that any exceedences that are found should be reported immediately.

The Monitoring, Reporting, and Other Requirements portion of the draft discharge permit also calls for monitoring at several specified wells. Monitoring, Reporting, and Other Requirements, ¶14. Two of those monitoring wells, MCOBT-4.4 and TW-8 are being replaced, however, and the discharge permit should require monitoring at the replacement wells. In addition, several new monitoring wells have been installed in Mortendad Canyon. The permit should require monitoring at those wells also.

The discharge plan should provide for making monitoring and other data available to members of the public in real time.

Several provisions of the draft discharge permit require monitoring and reporting to the NMED. *See*, e.g., Monitoring, Reporting, and Other Requirements ¶¶9-14 and Contingency Plans ¶¶15-19. The discharge permit should mandate that the results of those and other monitoring and sampling procedures be made available to the members of the public at the time that they are submitted to the NMED. Such results can be made available

by electronic mail to members of the public who have requested ongoing information; for other members of the public, results could be posted on a web site.

The discharge plan should provide a more specific closure plan.

The Regulations specifically provide for requirement of closure plans as part of discharge permits, and list several specific items that should be addressed in those plans (NMAC §20.6.2.3107.A(11)). Despite that, the proposed discharge permit's closure plan provides little in the way of details about closure and post-closure activities. Existing contamination in Mortandad Canyon has not been characterized adequately to develop a detailed closure plan that addresses remediation of existing ground water contamination and contaminated soils that could lead to further ground water contamination. For that reason, the discharge permit should include a closure plan that provides for alternative contingency plans to address contamination that is found.

Those alternative contingency plans should take into account that existing ground water contamination has the potential to affect ground water used for drinking water. Those plans also should take into account ground water management, including ground water pumping, treatment and discharge of treated water will most likely be necessary to protect state resources and public health. Because existing soils contamination has the potential to cause additional ground water contamination, those plans also should address remediation of soils, including excavation, treatment and/or location in a suitable repository.

Finally, a cost estimate should be provided based on the tasks included in the closure plan, and a corresponding financial assurance should be required in order to ensure that funds are available for the State of New Mexico to carry out those plans in the event that the permittees fail to carry out the necessary actions.

DP-1132 should require the posting of a financial assurance by LANL.

Because of the need for a closure plan, and because the discharges from the Facility may result in the need for remediation, DP-1132 should require the posting of a financial assurance to cover necessary costs in the event that the permittees are not able to pay for them. The Regulations specifically provide for requiring financial assurances (NMAC §20.6.2.3107.A(11)), and the potential costs involved in reclaiming and remediating contamination caused by the Facility are such that such a requirement is appropriate here. In accordance with financial assurance mechanisms requirements in other contexts, the financial assurance should be in the form of a trust account, a letter of credit, or an insurance policy, and must be payable to the State of New Mexico.

The Bureau should connect DP-1132 to the Compliance Order.

The Compliance Order is a comprehensive document calling for investigation of contamination at and around LANL facilities, including this Facility and Mortandad Canyon. Specifically, the Compliance Order calls for LANL to enhance its monitoring program in Mortandad Canyon and to provide NMED with a number of documents and reports regarding ground water in the canyon system. These data and reports may contain new information requiring action in order to protect ground water.

Therefore, in order for DP-1132 to control appropriately the discharge of water contaminants from LANL operations to ground and surface water, the Bureau should tie DP-1132 to the Compliance Order. In other words, the Bureau should include in DP-1132 provisions for taking action based on the results of the investigations mandated by the Compliance Order. DP-1132 also should provide for public involvement in decisions to be made on the basis of Compliance Order investigations results.

The discharge permit should call for the indefinite retention of records generated pursuant to the permit.

The draft discharge permit indicates that records generated pursuant to the permit shall be retained for a period of at least five years. Closure Plan ¶25. Because of the longevity of the contaminants that are in the wastes handled by the Facility, that period is not sufficient. The discharge permit should require that those records be retained indefinitely.

Conclusion

The draft discharge permit should be revised to include the additional requirements discussed above. It also should include provisions to insure that members of the public are kept informed about operations at the Facility.

We would appreciate your confirming that you have received this request for a public hearing and these comments. We also would appreciate hearing from you when the Secretary has determined whether a public hearing will be conducted.

Thank you for your cooperation.

Yours truly,

Douglas Meiklejohn
Attorney

Copies to:

Brian Shields
Executive Director
Amigos Bravos

Joni Arends
Executive Director
Concerned Citizens for Nuclear Safety

Fullam, Jennifer, NMENV

From: Scott Kovac <scott@nukewatch.org>
Sent: Thursday, December 12, 2013 4:30 PM
To: Flynn, Ryan, NMENV; Fullam, Jennifer, NMENV
Cc: Jay Coghlan
Subject: Nuclear Watch NM Comments on Draft Discharge Permit DP-1132
Attachments: RLWTF comments Dec 2013.docx

Jennifer Fullam,

We respectfully submit the attached comments for the Draft Discharge Permit, DP-1132, Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility at Technical Area 50, dated September 13, 2013.

Please acknowledge the receipt and readability.

Thank you,
Scott

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Scott Kovac
Operations and Research Director
Nuclear Watch New Mexico
903 W. Alameda #325
Santa Fe, NM, 87501
505.989.7342 office & fax
www.nukewatch.org
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Pullen, Steve, NMENV

From:	Jon Block <jblock@nmelc.org>
Sent:	Thursday, December 12, 2013 4:37 PM
To:	Schoeppner, Jerry, NMENV; Fullam, Jennifer, NMENV; 'Shields, Brian'; Rachel Conn; Kathy Sanchez; J. G. Sanchez; Mariann2@windstream.net; 'mariannaranjo@icloud.com'; Robert H. Gilkeson; Joni Arends
Subject:	2d Set of Comments and Hrg. Reg. from CCW, TWU and Individuals on DP 1132 for the RLWTF at LANL
Attachments:	CCW et al 2d Comments & Hrg Req DP-1132 20131212.pdf

Hello, Jerry and Jennifer:
As promised, here is the above referenced continuation of
the group and individual comments you received on 12/6/2103.

Again, thank you for your work on this matter.

Best,

Jon

--
J.M. Block, Staff Attorney
New Mexico Environmental Law Center
1405 Luisa Street, Ste. 5
Santa Fe, NM 87505
(505) 989-9022

nuclear watch new mexico

December 12, 2013

Secretary - Designate Ryan Flynn
New Mexico Environment Department
P. O. Box 5469
Santa Fe, NM 87502-5469

Jennifer Fullam
Ground Water Quality Bureau
PO Box 5469,
Santa Fe, NM 87502-5469
(505) 827-2900 (phone)

Via email to: ryan.flynn@state.nm.us and jennifer.fullam@state.nm.us

Re: Draft Discharge Permit, DP-1132, Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility at Technical Area 50

Secretary-Designate Flynn and Jennifer Fullam:

We respectfully submit these comments for the Draft Discharge Permit, DP-1132, Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility at Technical Area 50, dated September 13, 2013.

Nuclear Watch New Mexico seeks to promote safety and environmental protection at nuclear facilities; mission diversification away from nuclear weapons programs; greater accountability and cleanup in the nation-wide nuclear weapons complex; and consistent U.S. leadership toward a world free of nuclear weapons.

First, we question exactly what building this permit covers. Exactly what is discharged is dependent on the number and type of buildings that are actually built. Over the years, the Radioactive Liquid Waste Treatment Facility (RLWTF) has been designed as one building and as two separate buildings. Is there a separate Low Level Waste (LLW) Facility and separate Transuranic Liquid Waste (TLW) Facility? Is an existing facility being renovated? What is the timing of the construction of these two buildings? Do the discharges from each building combine somewhere? This Permit must not be released until the final building designs are released. If it is two buildings, does the 40,000 gal per day discharge apply to both as a total? How

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much is permitted per building per day?

A review is required that the facility is up-to-date with the legal requirement for public review of major federal proposals under the National Environmental Policy Act (NEPA). It has been over 5 years since the last NEPA review of this ever-changing project. NEPA review commonly results in the implementation of actions designed to mitigate potentially harmful environmental effects.

This Permit must not be released until all concerns of the Defense Nuclear Facilities Safety Board are met.

Clarification on what is going where is required. The Permittees are authorized to discharge up to 40,000 gallons per day (gpd) of treated wastewater, in accordance with the Conditions set forth in Section VI of this Discharge Permit. Discharges shall be to either the Mechanical Evaporator System (MES), the synthetically lined Solar Evaporative Tank system (SET), or through an outfall (identified as Outfall 051) also regulated by a National Pollutant Discharge Elimination System (NPDES) permit. What is the logic behind what waste goes where and when? Who decides where the waste goes any particular time? Will 40,000 gpd ever actually be discharged to the outfall? A per gallon per day limit on discharges to the outfall must be imposed.

For many years, the public has been lead to believe that the Lab was heading towards zero discharge from this facility. A full explanation of why this has changed is needed. We request that the outfall be eliminated from the permit. If waste is still allowed to be released through this outfall, public notification must be required each time treated waste is released to Mortandad Canyon.

Mortandad Canyon is severely contaminated, particularly the perched aquifers that are protected by law for all New Mexicans. As a condition of this permit please require that some remediation of Mortandad Canyon be implemented.

Please require the Department of Energy (DOE) and Los Alamos National Laboratory (LANL) to provide the closure and post-closure plans for the Radioactive Liquid Waste Treatment Facility as part of their application for the groundwater discharge permit DP-1132. The draft permit now out for public comment and review allows DOE and LANL to submit the closure plans in 180 days after the issuance of the permit. This places both the public and your agency at a distinct disadvantage. It also substantially increases the cost of the permitting process at a time when state resources are scarce.

It is unclear to us that the wells in section 28., ***GROUND WATER MONITORING***, are suitable to monitor outfall 051. For instance, the screen of R-60 is at 1330 feet below ground surface. How can a screen at that depth detect anything released from Outfall 051?

Treated effluent samples for Outfall 051 must be taken for each discharge, not just monthly. Nothing that the Lab does is standard. The types of wastes treated on any given day may be wildly different from the day before.

> 25. **EFFLUENT SAMPLING** -The Permittees shall sample and analyze effluent waste streams discharged to Outfall 051, the SET, and the MES.
> Treated effluent samples shall be collected once per calendar month for any month in which a discharge occurs to Outfall 051. The Permittees shall collect a grab sample of treated effluent which shall be analyzed for all water contaminants listed in 20.6.2.3103 NMAC, TKN and all toxic pollutants as defined in 20.6.2.7.WW NMAC.

For these reasons and others, we request a public hearing.

These comments and questions respectfully submitted,

Jay Coghlan
Executive Director

Scott Kovac
Operations and Research Director

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Communities for Clean Water

A Northern New Mexico Network

December 12, 2013

Mr. Jerry Schoeppner, Bureau Chief
Ms. Jennifer Fullam, Environmental Scientist
Ground Water Quality Bureau
New Mexico Environment Department
P.O. Box 5469
Santa Fe, NM 87502-5469
Via email to: Jerry.Schoeppner@state.nm.us and Jennifer.Fullam@state.nm.us

Re: Second Set of Comments and Hearing Request of the *Communities for Clean Water*, *Tewa Women United* and three individuals on the proposed permit DP-1132

Dear Mr. Schoeppner and Ms. Fullam:

Below are the Second set of Comments and the Hearing Request of *Communities for Clean Water* ("CCW"), *Tewa Women United* ("TWU") and individuals *Kathy WanPovi Sanchez, J. Gilbert Sanchez* and *Robert H. Gilkeson*, *Independent Registered Geologist*, as referenced above. We incorporate herein by reference the hearing request in our first set of comments and the materials set forth in attached Appendices A - H. The second set of comments are page numbered to follow the first set of comments.

We thank you in advance for your careful attention to these comments and look forward to an opportunity to attempt to resolve the issues raised by the First and Second Set of Comments in a cooperative manner with your agency and the permit applicant.

Respectfully submitted:

_____

Jon Block, Staff Attorney,
New Mexico Environmental Law Center
1405 Luisa Street, Ste. 5
Santa Fe, New Mexico 87505
Phone: (505) 989-9022, Ext. 22
Fax: (505) 989-3769
E-mail: jblock@nmelc.org
Counsel for Communities for Clean Water, Tewa Women, Kathy WanPovi Sanchez, J. Gilbert Sanchez and Robert H. Gilkeson

IV. INTRODUCTION TO SECOND SET OF COMMENTS

A. Acknowledging Our Government's Occupation and Pollution of Sacred Places.

In the support of the statements made in the first set of comments, dated December 6, 2013, we cite the following Declarations of Indigenous Women. The Declarations state the threats and harms from dangerous industries such as is the Los Alamos National Laboratory nuclear, chemical and biological weapons complex. Recommendations are made and references to actions being taken to restore justice and well-being to Indigenous communities. The Declarations are attached to these comments in Appendices B through F. The information therein documents the environmental justice aspects of this permit.

1. *Las Mujeres Hablan: The Women Speak - Women's Declaration for New Mexico 2010*

> 9. Be it further resolved that we will support the work of **Las Mujeres Hablan.** (New Mexico Acequia Association (NMAA); Honor Our Pueblo Existence (HOPE), Tewa Women United (TWU); Concerned Citizens for Nuclear Safety (CCNS); Embudo Valley Environmental Monitoring Group (EVEMG); New Mexico Conference of Churches (NMCC); Community Service Organization (CSO) Del Norte
>
> **Mission**: To address past, present and future issues arising from the nuclear industry's releases of toxic chemicals and radioactive materials that cause contamination to our land, air, and water; demand clean-up of these sites; question the continued manufacturing of nuclear weapons; and restore justice to the Peoples who have been impacted by this industry. And, address other activities that violate and cause harm to our environment and well-being within the Sacred Mountains of New Mexico and other places in the world,

2. *Indigenous Women and Environmental Violence,* A Rights-based approach addressing impacts of Environmental Contamination on Indigenous Women, Girls and Future Generations. Submitted to the United Nations Permanent Forum on Indigenous Issues Expert Group Meeting *Combating Violence Against Indigenous Women and Girls,* January 18 – 20, 2012, United Nations Headquarters, New York, by Andrea Carmen, International Indian Treaty Council and Indigenous Women's Environmental and Reproductive Health Initiative, and Viola Waghiyi, Native Village of Savoonga, St. Lawrence Island, Alaska and Alaska Community Action on Toxics – Theme 2: *Contextualizing Violence.*

> *From a traditional perspective, the health of our Peoples cannot be separated from the health of our environment, the practice of our spirituality and the expression of our inherent right to self-determination, upon which the mental, physical and social health of our commu*nities is based.

--- IITC Oral Intervention presented by Faith Gemmill, Gwich'in Nation Alaska
United Nations Working Group on Indigenous Populations, Geneva July 31, 1996

3. *Report of the International Indigenous Women's Environmental and Reproductive Health Symposium,* April 27th – 29th, 2012, Chickaloon Native Village, Alaska. Co-hosted by the International Indian Treaty Council (IITC) and Indigenous Women's Initiative for Environmental and Reproductive Health, Alaska Community Action on Toxics (ACAT), Chickaloon Native Village and International Indigenous Women's Forum (FIMI). Submitted to the 11th Session of the United Nations Permanent Forum on Indigenous Issues as a Conference Room Paper by the International Indian Treaty Council, Indigenous Non-governmental Organization in General Consultative Status to the United Nations Economic and Social Council. May 5th, 2012. Kathy WanPovi Sanchez of Tewa Women United and Marian Naranjo of Honor Our Pueblo Existence participated in the Symposium and signed the Report.

Based on these shared understandings, we adopt by consensus this ***2nd DECLARATION for the Health, Survival and Defense of OUR LANDS, OUR RIGHTS and our FUTURE GENERATIONS and make the following recommendations:***

That Indigenous Peoples, Nations and Communities:

1) Identify and document the disproportionate impacts of environmental toxins on Indigenous women and children as "environmental violence" for which States and corporations can be held accountable.

2) Provide community capacity-building and training linking reproductive and environmental health and human rights.

3) Maintain, support, strengthen and assert traditional systems of law, community organization, decision-making, leadership and representation.

4. *Sovereignty: Long Live Mother Earth – Women's Declaration 2012: Year of Indigenous Women,* by Las Mujeres Hablan: The Women Speak, which include Honor Our Pueblo Existence, Tewa Women United, and Concerned Citizens for Nuclear Safety.

29. Be it further resolved that we will work in solidarity with each other in our struggles to defend the air, land, and water from contamination, exploitation, and militarization,

30. Be it further resolved that we honor, respect, and recognize the dignity of women and their families throughout the world and here at home who are subjected to exposure to toxins through their work, their food, or their proximity to pollution and that we resolve to speak and act in solidarity with them in efforts to defend the health of their families and communities,

31. Be it further resolved that we will continue to play an important role in reshaping our communities to achieve a vision of safe, healthy, and joyful lives for our families and communities with good, healthy and locally grown food, good livelihoods that honor the dignity of every human person, and a meaningful and spiritual relationship with Mother Earth.

5. *References to Indigenous Women in the ALTA Outcome Document,* Compiled and submitted to the World Conference of Indigenous Women, October 28 – 30, 2013, Lima Peru, by Andrea Carmen (North America Region) and Mililani Trask (Pacific Region).

Recommend that States uphold and respect the right of self determination and the free, prior and informed consent of Indigenous Peoples who do not want mining and other forms of resource extraction, "development" and technologies deemed as degrading to their human, cultural, **reproductive** and ecosystem health. Where mining and other forms of resource extraction are already occurring, States shall develop mechanisms with the full and effective participation of Indigenous Peoples to develop a comprehensive strategy for ecologically sustainable and equitable development to end and prevent uncontrolled and unsustainable industrial contamination and degradation with plans for clean-up, remediation and restoration. Such as strategy shall incorporate strengthening the capacity of Indigenous youth in relation to sustainable development practices based on Indigenous knowledge and the relationship with the land as well as the protection and promotion of the important role of traditional knowledge holders including Indigenous Elders and **women**; ***(Theme 1: Indigenous Peoples' lands, territories, resources, oceans and waters, Paragraph 6)***

V. SUPPLEMENT TO SECTION II, GENERAL COMMENTS ON THE PERMIT.

A. Second Set of General Comments on DP-1132.

Appendix A to these comments provides the analysis and comment of Independent Registered Geologist Robert H. Gilkeson on the ground water monitoring issues related to the permit. Appendices B through F contain documents related to the environmental justice issues involved in this permit. Appendix G to these comments demonstrates that we have been denied ready access to documents necessary to fully and effectively analyze the potential human health impacts of the Radioactive Liquid Waste Treatment Facility operations sanctioned by the permit. Appendix H to these comments provides documentation of the lengthy history of the attempt to regulate this facility and obtain public hearings of the permit.

1. Commenters - Section II.A.4. **DOE-IG Report.** We are concerned about the issues raised in the September, 2013 U.S. DOE, Office of Inspector General, Office of Audits and Inspections report entitled, *The Radioactive Liquid Waste Treatment Facility Replacement Project at Los Alamos National Laboratory,* OAS-L-13-15.[1] We

[1] See http://energy.gov/ig/downloads/audit-report-oas-l-13-15

incorporate this report herein by reference. It is ironic that, according to the DOE report, LANL wasted $100,000,000 on planning a new facility, yet, now that the permit is pending LANL ignores studies it has done since the 1970s which conclude that the existing facility can be converted to have "zero discharge". It confounds reason that LANL spent that much money and never built a facility. We contend that this is further evidence that LANL should be forced to seek a Resource Conservation and Recovery Act (RCRA) permit for this facility as a hazardous waste treatment facility—and go to zero discharge within one year of issuance of the permit.

2. Commenters - Section II.A.5. **Effluent Quality Limits for Discharges to the MES and SET**. The waste treatment processes under this draft permit presents a regulatory intersection of DOE self-regulation, an NMED draft ground water discharge permit, and EPA regulation of the radionuclide air emissions from LANL. *See generally,* 40 CFR 61, Subpart H. We have been in communication with LANL and EPA staff since November 1, 2013 in order to obtain documents about the evaporation of inorganic chemicals, nitrogen compounds and radioactivity from the Solar Evaporative Tank System (SET) and Mechanical Evaporator System (MES). Because of the incomplete responses, on November 27, 2013 we have had to file Freedom of Information Act (FOIA) requests with both DOE/LANL and EPA. *See generally* Appendix G, Copies of FOIA requests and responses.

We have learned that the MES may be designated by LANL as TA-50-257. It is a non-monitored emission source under 40 CFR 61, Subpart H. *See* 2011 LANL Radionuclide Air Emissions Report, LA-14458 at 21. The annual report to EPA, however, does not mention the SET and how its emissions are being monitored. *See id.,* and 2012 LANL Radionuclide Air Emissions Report, LA-14469. Given the extremely large volumes of evaporated liquid from these two evaporation units and the potential inorganic chemical and radioactive constituents of the liquid—see DP-1132 at 20-21--there is a serious issue concerning the apparent lack of monitoring to demonstrate that the established effluent limits on the evaporators is appropriate for the protection of public health and ground water quality. We reserve the right to supplement these comments once we have secured all the information requested under FOIA. *See generally,* Appendix G.

VI. SUPPLEMENTAL COMMENTS ON SPECIFIC PORTIONS OF THE PERMIT.

A. Supplementing previous comments on specific permit conditions as follows:

1. Section IV.B.25. Effluent Sampling at 26. COMMENT: The Permittees should be required to post their submittal to NMED when no discharge occurs for any calendar month.

2. Section VI.E.51. Modifications and Amendments at 46. COMMENT: The Permittees should be required to post any proposed modifications and amendments to the discharge to the Electronic Public Reading Room. *See* Section VII below.

3. **Sections VI.B. 26, 27, 28 and other portions of the permit dealing with ground water monitoring issues.** COMMENT: Ground water monitoring issues are extensively addressed in Appendix A to these supplemental comments. Appendix A was prepared by Independent Registered Geologist Robert H. Gilkeson. We incorporate herein by reference the observations and conclusions in Appendix A and note generally that Mr. Gilkeson's analysis and comments make clear that a rewrite of the water quality monitoring program is necessary to address the appropriate location and construction of new monitoring wells. This must include replacement of the existing antiquated monitoring and characterization wells, and augmentation of a number of new wells to protect the regional aquifer and to monitor potential seepage and discharges from the tritium evaporation tanks

4. **Section VI.B.26. Soil Moisture Monitoring System for the SET at 27.** COMMENT: In addition to comments on this issue incorporated from Appendix A, there should be a requirement to establish a baseline for the probe and an action level and the soil moisture detection action level and requests an opportunity to discuss this concern with NMED. Also, the permit should only provide LANL thirty (30) days to repair a failure of the moisture monitoring boreholes and neutron probes.

VII. EXPANDED PUBLIC PARTICIPATION AND NOTIFICATION.

A. We appreciate that NMED required the Permittees to post submittals to NMED and NMED's response to LANL's Electronic Public Reading Room (EPRR). In some sections of the draft permit, however, the Permittees are required to post their submittal and NMED response at the same time. *See* Section IV.A.3. In other sections, the Permittees are required to post their submittal promptly and subsequently, to post the NMED response. *See* Section VI.C.30. In order to be transparent, we request that the Permittee's submittal be posted when submitted to NMED. Upon receipt of NMED's response, we request a requirement that the Permittees post – in a timely manner - the NMED response to the EPPR. We note below the sections requiring this change:

1. **Section VI.A. Operational Plan**
   3) Submittal of Plans and Specifications
   12) Freeboard

2. **Section IV.B. Monitoring and Reporting**
   26) Soil Moisture Monitoring System for the SET
   28) Ground Water Monitoring

3. **Section IV.C. Contingency Plans**
   29) Containment
   31) Settled Solids Removal
   32) Damage to Structural Integrity
   33) Freeboard Exceedance
   34) Effluent Exceedance
   35) Soil Moisture Detection System Exceedance
   36) Monitoring Well Location
   37) Monitoring Well Construction
   38) Ground Water Exceedance
   39) Spill or Unauthorized Release
   40) Failures in Discharge Plan/Discharge Permit

4. **Section VI.D. Closure**
   42) Stabilization of Individual Units and Systems
   43) Final Closure Plan
   44) Final Closure
   45) Post-Closure Ground Water Monitoring
   46) Termination

5. **Section VI.E. General Terms and Conditions**
   51) Modifications and Amendments
   56) Right to Appeal
   57) Transfer of Ownership

Appendix A
To CCW, TWU and Individual Public Comments and Hearing Request - DP-1132

Deficiencies in Ground Water Protection in the Draft Ground Water DP-1132 Permit, by Independent Registered Geologist Robert H. Gilkeson

The five groundwater monitoring wells in the draft discharge permit for the LANL TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF) are not reliable to detect:

1. groundwater contamination from past, present or future leaks below the RLWTF, which began operations in 1963;
2. groundwater contamination from waste water discharged from the 051 outfall located 1,100 feet to the north of the RLWTF (Outfall 051 began discharges in 1963); or
3. groundwater contamination from leaks below the Solar Evaporative Tank System (SET) at Technical Area 52 located a considerable distance to the east of the RLWTF.

The factors necessitating replacement of the wells are described below. The New Mexico Environment Department (NMED) is required to order the Permittees (the Department of Energy (DOE) and Los Alamos National Security, LLC (LANS)) to replace the wells. Significantly, the five groundwater monitoring wells in the draft discharge permit do not comply with the NMED well construction requirements. *See generally*, NMED GWQB, *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1* (March 2011).

The five groundwater monitoring wells are listed on page 29 in the Draft Discharge Permit for the TA-50 RLWTF as follows:

a. **MCO-3-** previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.

b. **MCO-7-** previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.

c. **MCOI-6-** previously constructed and located in the intermediate aquifer presumed to be hydrologically downgradient of Outfall 051.

d. **R-46-** previously constructed and located in the regional aquifer, downgradient of the RLWTF.

e. **R-60-** previously constructed and located in the regional aquifer, downgradient of the RLWTF.

Figure 1 on the top of page 3 displays the locations of the five monitoring wells. Figure 1 shows the location of the LANL RLWTF in TA-50 approximately 400 feet north of the center of the LANL waste disposal dump known as Material Disposal Area (MDA) C. Figure 1 also shows the location of Outfall 051 approximately 1,400 feet north of the RLWTF. Outfall 051 discharges to Effluent Canyon; a tributary to Mortandad Canyon. Discharges to Outfall 051 began in 1963 coincident with the start of the treatment of radioactive liquid wastes at the RLWTF (see Figure 2).

Figure 1 is a contour map of groundwater flow at the water table of the regional aquifer below and away from MDA C, the RLWTF, and Outfall 051. The elevation of the water table of the regional aquifer is displayed on Figure 1 by the blue contour lines. The direction of groundwater flow at the water table is perpendicular to the contour lines along a trend from higher to lower elevations. From west to east on Figure 1, the bold blue contour lines show the elevation of the water table declines by 100 feet from 5950 feet above mean sea level (ft amsl) to 5850 ft amsl.

However, Figure 1 does not provide accurate knowledge of the direction of groundwater flow away from MDA C, the RLWTF, or Outfall 051. For example, the uncertainty in the direction of groundwater travel in the regional aquifer east of MDA C is displayed by the pair of red arrows on Figure 1. They show that the actual direction of groundwater travel at the water table may be to the northeast or to the southeast. The great uncertainty in the direction of groundwater travel in the vicinity of MDA C, the RLWTF and Outfall 051 is due to the lack of an adequate number of monitoring wells installed at the water table in the regional aquifer.

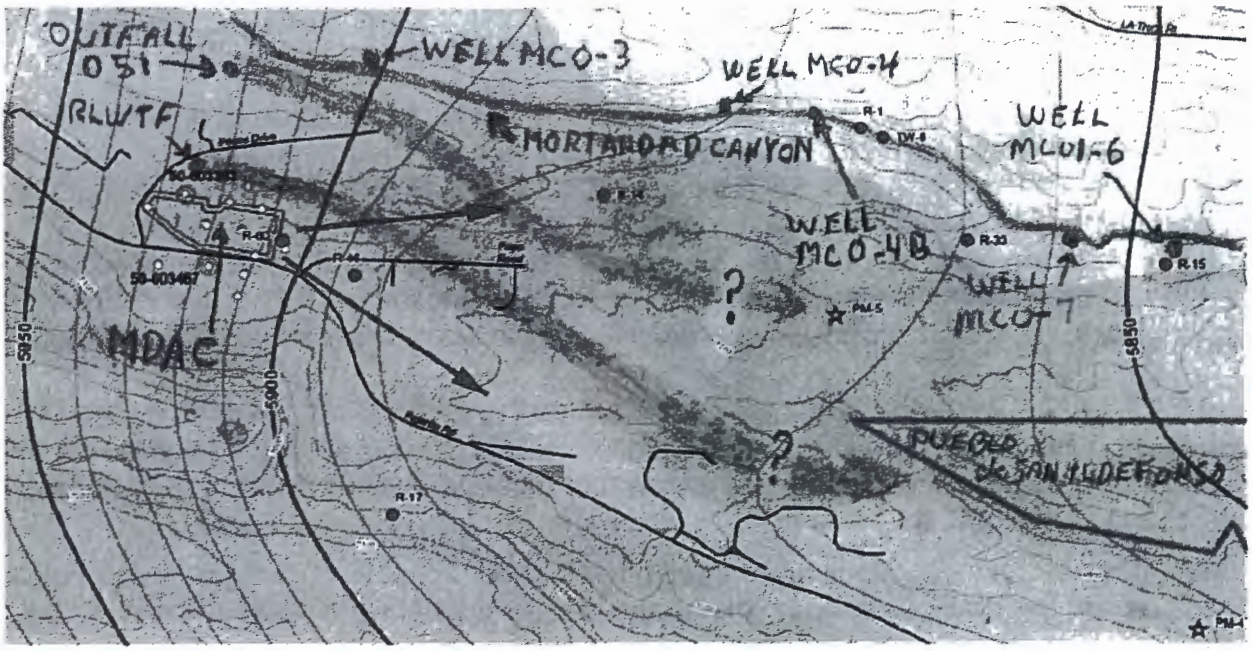
Indeed, the LANL September 2012 report titled *Corrective Measures Evaluation Report for Material Disposal Area C, Solid Waste Management Unit 50-009 at Technical Area 50* (LA-UR-12-24944) on page F-2 described the need for monitoring wells in the vicinity of the RLWTF and Outfall 051 as follows:

> Groundwater flow directions and magnitudes that control contaminant transport in the aquifer are generally dictated by the shape of the regional water table. However, the groundwater flow directions in the regional aquifer beneath MDA C are uncertain because of the low density of existing wells in the vicinity of MDA C; more specifically, the water-level data for defining regional flow directions west and north of MDA C are limited.

NMED is required to order the Permittees to install the necessary number of additional monitoring wells for accurate knowledge of the direction and speed of groundwater travel at the water table for MDA C, RLWTF, and Outfall 051. *See generally*, NMED GWQB, *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1* (March 2011).

Regional aquifer monitoring wells R-46 and R-60 do not monitor groundwater contamination from the TA-50 RLWTF or from Outfall 051. The draft discharge permit has made a serious mistake to describe wells R-46 and R-60 as hydraulically downgradient from the RLWTF. The information on Figure 1 is irrefutable evidence that wells R-46 and R-60 are **NOT** hydraulically downgradient of the TA-50 RLWTF or Outfall 051. The two gray groundwater flow lines on Figure 1 show that there are no LANL monitoring wells installed in the regional aquifer at appropriate locations to detect contaminated groundwater from the LANL RLWTF or from outfall 051.

Figure 1. Locations of the existing regional monitoring wells near MDA C, including the elevation of the regional water table representative of September 2010. Reproduced with additional annotations from *Corrective Measures Evaluation Report for Material Disposal Area C, Solid Waste Management Unit 50-009 at Technical Area 50* (LA-UR-12-24944, September 2012) at Figure F-1.0-1.



Scale 0---------1,000 Feet North is toward the top of the page

– The red arrows east of MDA C represent the large uncertainty in the direction of groundwater flow at the water table of the regional aquifer east of MDA C, RLWTF, and Outfall 051.

– The blue contour lines on Figure 1 are the elevation of the water table of the regional aquifer. The water table declines by more than 100 feet from west to east. The blue contour lines are based on the network of R-wells installed in the regional aquifer. The spacing of the blue contour lines is close below MDA C, the RLWTF, and Outfall 051 with a wide spacing of the contour lines in the region to the east. The close spacing identifies a high hydraulic gradient present in the immediate vicinity of MDA C, the RLWTF and Outfall 051.

– Accurate knowledge of the hydraulic gradient is necessary to calculate an accurate speed of groundwater travel in the regional aquifer. The high hydraulic gradient requires installation of a minimum of two monitoring wells at the water table of the regional aquifer immediately east of the RLWTF and immediately east of Outfall 051. This is demonstrated on Figure 1 by the location of well R-60 close to the eastern side of MDA C and well R-46 located 800 feet east of well R-60.

— Figure 1 shows that Outfall 051 is located close to the confluence of Effluent Canyon with Mortandad Canyon.

– On Figure 1, the upper gray flow line shows the direction of groundwater flow at the water table of the regional aquifer below and away from Outfall 051 is toward Los Alamos County Drinking Water Well PM-5. The very large amount of waste water discharged from Outfall 051 displayed in Figure 2 for the years 1963 to 2000 may have caused groundwater

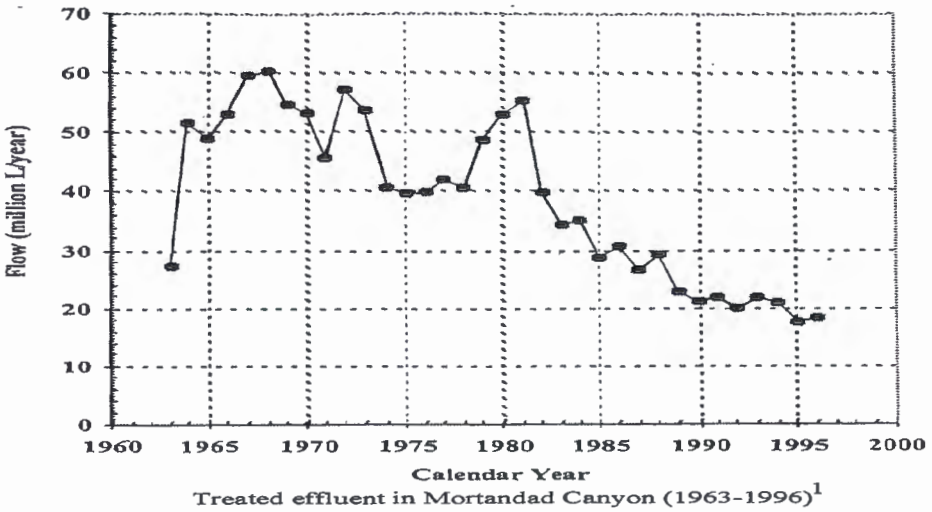
contamination in the regional aquifer. The requirement to install a minimum of two monitoring wells in the regional aquifer close to the east side of Outfall 051 was described earlier.

--The distance from Outfall 051 to well Los Alamos County Drinking Water Well PM-5 is approximately 6,100 feet. There is a requirement to install two monitoring wells in the regional aquifer close to the west side of well PM-5. One well installed at the water table of the regional aquifer and the second well installed at the depth of the top of the well screen in well PM-5. The two monitoring wells will provide important information on the hydraulic interaction of pumping well PM-5 on the elevation of the water table of the regional aquifer in the vicinity of well PM-5. The two wells will also serve as sentry wells for the detection of contaminated groundwater. LANL has already installed two sentry wells, R-35a and R-35b, close to Los Alamos County Drinking Water Well PM-3 in order to provide early knowledge of the migration of the large chromium plume to well PM-3. The request duplicates LANL efforts to provide an early warning for the Los Alamos County drinking water wells.

– On Figure 1, the lower gray flow line shows the direction of groundwater flow at the water table of the regional aquifer below and away from the RLWTF toward the property of the Pueblo de San Ildefonso.[1] The distance from the RLWTF to the Pueblo property line is approximately 6,800 feet. The requirement to install two monitoring wells in the regional aquifer close to the eastern side of the RLWTF because of the high hydraulic gradient was described earlier. In addition, there is a minimum requirement to install two monitoring wells at the water table in the regional aquifer close to the boundary of the Pueblo de San Ildefonso. The two wells are necessary because of the great uncertainty in the actual direction of groundwater flow below and away from the RLWTF.

-Outfall 051 discharged large volumes of liquid wastes from the LANL RLWTF into Effluent Canyon for more than 50 years beginning in 1963. Treated RLWTF effluent volumes were as much as 60 million liters per year. *See* Figure 2 below.[2]

FIGURE 2



Treated effluent in Mortandad Canyon (1963-1996)[1]

[1] References herein to Pueblo de San Ildefonso are solely for the purpose of describing the direction of ground water flow from the LANL property.

[2] D. Moss et al., *Elimination of Liquid Discharge to the Environment from the TA-50 Radioactive Liquid Waste Treatment Facility,* LA-13452-MS, UC-902 (1998) at Figure 1, "Treated RLWTF Effluent to Mortandad Canyon (1963 – 1996)."

In summary: Figure 1 shows that there are no monitoring wells at appropriate locations to detect groundwater contamination in:

1. the shallow alluvial aquifer close to and downgradient from Outfall 051;
2. in perched aquifers close to and downgradient of Outfall 051;
3. at the water table in the regional aquifer close to and downgradient from Outfall 051; and
4. at the water table in the regional aquifer close to the western side of Los Alamos County Well PM-5.

The immediate installation of monitoring wells to address the above four omissions is a requirement in Section VI.C.36 and 37 for the draft discharge permit for the TA-50 RLWTF.

Further, Figure 1 also shows that there are no monitoring wells at appropriate locations to detect groundwater contamination in:

1. perched zones below the RLWTF;
2. at the water table in the regional aquifer below and downgradient of the RLWTF;
3. at the water table of the regional aquifer on the property of the Pueblo de San Ildefonso; and
4. at the water table in the regional aquifer close to the western side of Los Alamos County Well PM-4.

The immediate installation of monitoring wells to address the above four omissions is a requirement as described above for the draft discharge permit for the TA-50 RLWTF.

The NMED Ground Water Quality Bureau (GWQB) made a serious mistake by identifying wells R-46 and R-60 as ***"previously constructed and located in the regional aquifer, downgradient of the RLWTF."*** There is substantial information on record in LANL reports that the two wells are NOT hydraulically downgradient of the RLWTF.

In fact, Section VI.C.36 in the draft RLWTF Discharge Permit describes the replacement process to be followed when information shows a monitoring well is not located hydrologically downgradient of the discharge location it is intended to monitor as follows:

> 36. **MONITORING WELL LOCATION** - In the event that ground water flow information obtained pursuant to this Discharge Permit indicates that a monitoring well is not located hydrologically downgradient of the discharge location it is intended to monitor, NMED may require the Permittees to install a replacement well or wells. Within 30 days following receipt of such notification from NMED, the Permittees shall submit to NMED for approval a well installation work plan, describing each proposed well location, drilling methods and well specifications, and proposing a schedule for construction. Upon NMED approval, the Permittees shall construct the replacement well or wells according to the approved work plan and schedule. The Permittees'

Proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

Section VI.C.36 requires the NMED GWQB to take action now, before a public hearing on the draft permit, to require the Permittees to install the required monitoring wells in the regional aquifer hydraulically downgradient of the RLWTF, Outfall 051 and also the Solar Evaporator Tank System (SET). The requirement for monitoring wells in the regional aquifer at the SET is described below.

Monitoring wells in the regional aquifer are required at the location of the SET. The draft RLWTF discharge permit includes discharge of large volumes of waste water to the "unsealed subgrade concrete structure with a single double-lined synthetic liner, and a leak detection system within the synthetic liner" for solar evaporation. *See* Section V.D. The soil moisture monitoring tubes do not provide adequate monitoring of leakage from the unsealed concrete tanks. **Protection of precious groundwater resources require installation of a minimum of three monitoring wells at the water table of the regional aquifer at locations close to the SET.** *See* Section VI.B.26.

Monitoring Wells MCO-3, MCO-7 and MCOI-6 require replacement. The NMED GWQB report, *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1 (*March 2011), requires that the monitoring wells MCO-3, MCO-7 and MCOI-6 in Mortandad Canyon be plugged, abandoned, and replaced with new monitoring wells. The locations of the three wells are displayed on Figure 1. These wells must be replaced before a public hearing on the draft discharge permit.

Alluvial Aquifer Monitoring Wells MCO-3 and MCO-7. The details on drilling and installation of wells MCO-3 and MCO-7 are provided in Purtymun, W.D., *Geologic and Hydrologic Records of Observation Wells, Test Holes, Test Wells Supply Wells, Springs, and Surface Water Stations in the Los Alamos Area,* LA-12883-MS (1995) ("Purtymun report").

The Purtymun report states, in pertinent part:

> The earlier holes [from 1960 to 1973] were augered using a 4.5-in.-diam bit. For casing, 2-in.-diam and 3-in.-diam plastic pipe was used. These wells were not gravel packed. The casing was placed in the hole, and the annulus between the casing and the hole wall was sealed with cuttings from the hole. . . The screen section of the plastic pipe was perforated with a 1/4-in. drill bit. At the surface the hole was sealed with cement and a security cap installed. Geologic logs and construction data are shown in Table VI-B.

Id. at 69. A table in the report set forth as follows:

Observation Well MCO-3

Geologic Log	Thickness (ft)	Depth (ft)
Alluvium		
Sand and gravel in a matrix of silt and clay		

Tuff (weathered in place)
Silt and clay with some lenses of sand and gravel 11 18

Construction
12 ft of 3-in.-diam plastic pipe, lower 10 ft perforated.

Observation Well MCO-7

Geologic Log	Thickness (ft)	Depth (ft)
Alluvium		
Sand and gravel in a silt and clay matrix		
Tuff (weathered in place)		
Silt and clay with lenses of sand and gravel	22	77

Construction
69 ft of 3-in.-diam plastic pipe, lower 30 ft perforated.

Id. at Table VI.B.

Well MCO-3: The information provided in the Purtymun report shows that well MCO-3 was installed in 1967 in a borehole with diameter of 4.5 inches to a total depth of 12 feet. The well screen was formed by perforating the 3 inch plastic casing with a ¼-inch drill bit over the 10 foot interval from 2 feet to 12 feet below ground surface.

Well MCO-7: The information provided in the Purtymun report shows that well MCO-7 was installed in 1960 in a borehole with diameter of 4.5 inches to a total depth of 69 feet. The well screen was formed by perforating the 3 inch plastic casing with a ¼-inch drill bit over the 30 foot interval from 39 feet to 69 feet below ground surface.

There are many factors that show the construction of wells MCO-3 and MCO-7 are not in compliance with the well construction specifications in the NMED GWQB *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1.* Examples are as follows:

Specification 2. The borehole diameter must be drilled a minimum of 4 inches larger than the casing diameter to allow for the emplacement of sand and sealant.

– For wells MCO-3 and MCO-7, the borehole diameter was only 1.5 inches larger than the casing diameter. The required annular space was not provided for the emplacement of sand and sealant.

Specification 6. A 20-foot section of continuous slot, machine slotted, or other manufactured PVC or stainless steel well screen or well screen of an alternate appropriate material that has been approved for use by NMED must be installed across the water table. Screens created by cutting slots into solid casing with saws or other tools must not be used. The screen material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. . . The well screen slots must be appropriately sized for the formation materials and should be selected to retain 90 percent of the filter pack. A slot size of 0.010 inches is generally adequate for most installations.

– For wells MCO-3 and MCO-7, we are not aware of a document from NMED for approval of the alternate plastic pipe that was used for the well casing and well screen.

– For wells MCO-3 and MCO-7, the screens were created by drilling slots in the solid plastic casing, a screen construction practice that is not allowed by Specification 6.

– For wells MCO-3 and MCO-7, there is no documentation that the chemistry of the plastic casing was compatible with the chemistry of the groundwater and appropriate for the contaminants of interest at the RLWTF.

– The slot size of 0.25 inches from the drill bit was much too large to retain the clay rich drill cuttings that were used as the filter pack in wells MCO-3 and MCO-7.

Specification 7. Casing and well screen must be centered in the borehole by placing centralizers near the top and bottom of the well screen.

– Centralizers were not installed near the top and bottom of the slotted plastic casing in wells MCO-3 and MCO-7. No measures were taken to center the "well screen" in the borehole.

Specification 8. A filter pack must be installed around the screen by filling the annular space from the bottom of the screen to 2 feet above the top of the screen with clean silica sand.

– For wells MCO-3 and MCO-7 a filter pack of clean silica sand was not installed in the annular space surrounding the field fabricated well screens. Instead, the well screens were surrounded by the drill cuttings produced from the boreholes.

Specification 9. A bentonite seal must be constructed immediately above the filter pack by emplacing bentonite chips or pellets (3/8-inch size or smaller) in a manner that prevents bridging of the chips/pellets in the annular space. The bentonite seal must be 3 feet in thickness and hydrated with clean water. Adequate time should be allowed for expansion of the bentonite seal before the installation of the annular space seal.

– The required bentonite seal was not installed above the screened intervals in wells MCO-3 and MCO-7. Instead, the interval immediately above the well screens was filled with the borehole cuttings.

Specification 10. The annular space above the bentonite seal must be sealed with cement grout or a bentonite-based sealing material acceptable to the State Engineer pursuant to 19.27.4 NMAC. A tremie pipe must be used when placing sealing materials at depths greater than 20 feet below the ground surface. Annular space seals must extend from the top of the bentonite seal to the ground surface.

– For wells MCO-3 and MCO-7, the annular space above the well screens was not sealed with a cement grout or a bentonite-based sealing material. Instead, the

annular space was filled with the borehole cuttings. A tremie pipe was not used to place sealing materials at well MCO-7 which has a total dept of 69 feet.

Specification 11. For monitoring wells finished above grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the shroud and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the wellhead.

– For wells MCO-3 and MCO-7, the Purtymun report also states, "At the surface the hole was sealed with cement and a security cap installed." There is no information provided on the radius or thickness of the cement seal or that the cement seal was sloped to direct rainfall and runoff away from the wellhead.

In summary, there is substantial evidence that establishes the requirement to plug and abandon wells MCO-3 and MCO-7 because they do not meet the basic NMED GWQB requirements. Specifically, there is not a seal to prevent rainfall, snowmelt, or stormwater from entering the unsealed annular space. Further, the clay-rich drill cuttings used as filter pack around the field site fabricated screens have properties to prevent collection of reliable and representative groundwater samples for contaminants of concern.

The NMED GWQB must require the Permittees to install new monitoring wells at locations close to the locations of wells MCO-3 and MCO-7 before any public hearing on the draft discharge permit.

Two new monitoring wells installed at the locations of wells MCO-3 and MCO-7 are not sufficient to monitor groundwater contamination in the shallow alluvium along Mortandad Canyon from the large volume of treated waste water discharged from Outfall 051.

First, new monitoring wells are required to be installed because the distance from Outfall 051 to Well MCO-3 is too great, at approximately 1,100 feet. NMED is required to order the Permittees to install a monitoring well in the shallow alluvium in Effluent Canyon north of Outfall 051 near the confluence with Mortandad Canyon before the public hearing on the discharge permit.

Second, the distance from well MCO-3 to MCO-7 is too great at approximately 7,700 feet. There is a large zone of highly contaminated alluvial sediments in the Mortandad Canyon stream section between MCO-3 and MCO-7 that is not monitored. The discharge of large volumes of treated waste water from Outfall 051 will remobilize the contamination that is presently bound up on the alluvial sediments in this zone.

On Figure 1, wells MCO-4 and MCO-4B are within the large zone of highly contaminated sediments. Groundwater samples are not collected by the Permittees from the two wells because of low water levels. The wells must be replaced. *See* Section VI.C.37.

The highly contaminated alluvial sediments at well MCO-4 are documented by the contaminated groundwater samples collected from well MCO-4 as described in the LANL *Hydrogeologic Workplan*, LA-UR-01-6511 (1998) as follows:

[a]lluvial well MCO-4 which contains elevated concentrations or activities of NO3 [nitrate], tritium, strontium-90, cesium-137, plutonium-238, plutonium-239, 240 and americium-241.

Id. at 4-92. The highly contaminated alluvial sediments at well MCO-4B are documented in the LANL report, *Demonstration of a Multi-Layered Permeable Reactive Barrier in Mortandad Canyon at Los Alamos National Laboratory* (LA-UR-03-7320), as follows:

Table 3-1. Summary of Groundwater Data for Mortandad Canyon

Constituent	Concentration	Action Level	Comment
^{90}Sr	80 pCi/L	8 pCi/L	DCG
^{238}Pu	1.182 pCi/L	1.6 pCi/L	DCG
$^{239,240}Pu$	0.61 pCi/L	1.2 pCi/L	DCG
^{241}Am	1.53 pCi/L	1.2 pCi/L	DCG
Nitrate (N)	5.7 mg/L	10 mg/L	MCL
Perchlorate	120-250 ppb	4 µg/L	Proposed EPA MCL

Data from monitoring well MCO-4B upgradient from the multiple PRB (LANL, 2002). DCG is derived concentration guideline from DOE. MCL = maximum contaminant level.

Id. at Table 3-1. Indeed, Section VI.C.37 in the draft RLWTF Discharge Permit requires that Permittees install new monitoring wells as described above in the alluvial aquifer:

37. MONITORING WELL CONSTRUCTION-In the event that information available to NMED indicates that a well is not constructed in a manner consistent with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Guidelines, Revision* 1.1, March 2011; contains insufficient water to effectively monitor ground water quality; or is not completed in a manner that is protective of ground water quality, NMED may require the Permittees to install a replacement well or wells. Within 90 days following receipt of such notification from NMED, the Permittees shall submit to NMED for approval a well installation Work plan, describing each proposed well location, drilling methods, well specifications, and proposed schedule for construction. Upon NMED approval, the Permittees shall construct the replacement well or wells according to the approved work plan and schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lan1.gov/oppie/service (or as updated).

In summary, the RLWTF draft discharge permit requires that Permittees:

1. plug and abandon wells MCO-3 and MCO-7 with installation of new replacement wells;
2. install a new monitoring well in Effluent Canyon at an appropriate location north of Outfall 051 close to the confluence with Mortandad Canyon; and
3. install a minimum of two alluvial monitoring wells at the locations of wells MCO-4 and MCO-4B that are not sampled at the present time because of low water levels.

Section VI.C.37 requires the NMED GWQB to take action now to require LANL and DOE to install the required monitoring wells in the alluvial sediments in Effluent Canyon and in Mortandad Canyon before any public hearing.

Perched Zone Monitoring Well MCOI-6 requires replacement. Well MCOI-6 is not reliable to detect groundwater contamination because of:

1. the deep placement of the top of the well screen below the water table of the perched zone of saturation; and
2. the drilling method allowed organic drilling fluids to flow into the strata surrounding the well screen.

The deep placement of the well screen in well MCOI-6. The NMED GWQB report, *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1* (March 2011), requires well screens in monitoring wells to be installed across the water table. The requirement is in Specification 6 as follows:

> **Specification 6.** A 20-foot section (maximum) of continuous-slot, machine slotted, or other manufactured PVC or stainless steel well screen or well screen of an alternate appropriate material that has been approved for use by NMED must be installed across the water table.

However, the water level data in the LANL Intellus data base shows that the water level in the perched zone at the location of well MCOI-6 was 27.5 feet above the top of the screen for the most recent water level measurement reported on August 22, 2013. For the previous 12 month period, the water levels varied from 27.1 feet to 29.4 feet above the top of the well screen. The deep placement of the well screen does not provide groundwater samples that are representative of contaminated groundwater at top of the perched zone of saturation.

Characterization well MCOI-6 was installed as an activity of the LANL Hydrogeologic Work Plan with well drilling and well installation performed over the period from January 3 to January 13, 2005. The LANL characterization well MCOI-6 was drilled with methods that allowed a large volume of organic water-based drilling fluids to flow into the strata surrounding the depth interval where the well screen was installed. The organic drilling fluids form a new chemistry in the sampling zone with strong properties to conceal accurate knowledge of many LANL contaminants in the groundwater samples collected from the impacted wells.

The National Academy of Sciences issued a report entitled "Plans and Practices of Groundwater Protection at Los Alamos National Laboratory" in 2007 that described the requirement to replace many and possibly all of the LANL characterization wells.[3] The NAS report states in pertinent part:

> Many if not all of the wells drilled into the regional aquifer [and into perched zones of saturation] under the LANL Hydrogeologic Workplan appear to be compromised in

[3] See http://www.nap.edu/catalog.php?record_id=11883

their ability to produce water samples that are representative of ambient groundwater for the purpose of monitoring.

Id. at 49. Further on in the NAS report we find the following recommendation:

> ***Recommendation:*** *LANL should design and install new monitoring wells with the following attributes:*
>
> • *A borehole drilled through the monitoring zone without the introduction of drilling muds or additives (i.e., use air or water).*

Id. at 60.

In November 2010, the NMED Hazardous Waste Bureau (HWB) issued *General Response to Comment on the LANL Renewal RCRA Permit.* [4] In that report, the NMED HWB agreed with the conclusions in the NAS 2007 Report about the greater than 40 LANL characterization wells installed for the LANL Hydrogeologic Work Plan. The NMED described the LANL characterization wells as not meeting the requirement to be monitoring wells for the NMED 2005 Consent Order or the NMED 2010 Renewal of the Federal Resource Conservation and Recovery Act (RCRA) Permit for LANL.

For example, in the NMED 2010 General Response to Comment it states in pertinent part:

> The Department agrees with many of the conclusions in the referenced National Academy of Sciences (NAS) Report; however the report is based on conditions at the time that the NAS conducted the evaluation. Since that time, the Permittees have installed, replaced and rehabilitated numerous wells completed in the intermediate perched aquifers and the regional aquifer at the Facility. The NAS report does not account for the additional groundwater characterization and actions taken to address deficient wells.
>
> The NAS report references wells that were installed as part of LANL's groundwater characterization efforts that were conducted in accordance with their Hydrogeologic Work Plan (1998). These [characterization] wells were not installed for contaminant detection or groundwater monitoring. Therefore, these wells have limited relevance to groundwater protection goals set forth by the March 1, 2005 Consent Order [Emphasis supplied].

Id. at 31. There was no effort to rehabilitate characterization well MCOI-6. Further, the attempt to rehabilitate many of the LANL characterization wells was categorically unsuc-cessful and a great misspending of financial resources that should have been used to replace the wells. The NMED GWQB has a duty to require the Permittees to plug and abandoned characterization well MCOI-6 and replaced with a new monitoring well before any public hearing takes place.

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[4] See http://www.nmenv.state.nm.us/HWB/Permit.htm On the NMED webpage under the heading "Renewal Permit," click on the topic "General Response to Comments."

Las Mujeres Hablan: The Women Speak

Women's Declaration for New Mexico 2010

Preamble

The Earth community stands at a defining moment in time. Injustices, poverty, ignorance, corruption, crime and violence have deepened and our Earth Mother is suffering. These offenses have lead to values that have become hurtful and a destructive way of living.

We believe that women are sacred unique human beings of the Earth. We believe that female and male energy is found within the other. We believe that all people belong to one earth community as a human family.

We, therefore, declare the following:

1. Whereas, women are the nurturers of the human seed within their wombs and bearers of the blessing of creation through the process of giving birth,

2. Whereas, because of the profound role of women in creation, ancient cultures and civilizations throughout human history and today have revered the earth as our Mother, the source of all life,

3. Whereas, women's bodies are intimately connected to Mother Earth as reflected in our moon cycles that are the basis for procreation and birthing of children,

4. Whereas, mothers and grandmothers continue to be the primary caregivers of children through breastfeeding, feeding, and nurturing, from infancy through all the stages of our human lives,

5. Whereas, women have also nurtured other women historically and traditionally serving as midwives and helping one another raise their children along with their extended families,

6. Whereas, women are believed to have been the first seed savers and contributed to the cultivation of crops in a way that transformed human existence and, today, in our families and communities mothers and grandmothers have continued to be the primary caretakers of seeds,

7. Whereas, women have a special relationship with food in their role as farmers, nurturers, seed savers, and cooks and, therefore, they are the holders of culturally significant recipes and methods for storing and preparing food,

8. Whereas, many of the increasing numbers of small scale, independent farmers are women farmers from various backgrounds who are dedicated to growing clean, healthy, and fair food and to restoring harmony to the earth,

9. Whereas, women provide an important support system for all the activities of operating our *ranchitos*, the family farms and ranches, including serving as part of the labor essential to the process, providing meals for other laborers, and teaching children the values of land-based culture and way of life,

10. Whereas, women are often the teachers of life skills to their children and are therefore important to ensuring that traditional knowledge is passed from generation to generation.

11. Whereas, women play important roles in our communities as spiritual leaders who offer blessings at important times in our lives and who offer guidance on important life decisions,

12. Whereas, women in traditional communities hold essential traditional knowledge including teachings about medicinal plants, where they can be harvested, and how they should be used,

13. Whereas, historically, women's role as homemakers was broad and included helping one another to build, periodically plaster and re-plaster, and maintain their homes,

14. Whereas, for millennia, women have harvested foods such as *piñon, quelites*, *tsimaja*, asparagus, *verdolagas*, *chocoyole*, and many varieties of berries, which we regard as special gifts and blessings,

15. Whereas, historically and traditionally, women's roles in families and communities were highly valued and the equally important role of men included providing the needed support system in order to raise healthy families,

16. Whereas, historically and in modern times, women have, out of the love of their children and men in their families, been at the forefront of resisting all forms of violence, including war,

17. Whereas, women today are often not respected as they were traditionally and are often subjected to violence in their own homes by those closest to them,

18. Whereas, because of the nature of women's bodies related to procreation and our intimate relationship with the earth through farming, herb gathering, and earthwork, we are particularly sensitive to exposure to pollutants from various sources,

19. Whereas, the parts of our bodies meant to nurture and nourish our children are also most susceptible to disease and cancer considering that elevated levels of breast cancer, ovarian cancer, and other deadly diseases result from exposure to toxins,

20. Whereas, mothers and grandmothers who feed and nurture their children are concerned about the existence of synthetic hormones and pesticide residues in foods resulting in unprecedented effects on boys and girls such as premature puberty, cancer, and other long-term effects that are unknown,

21. Whereas, our families are also threatened by the unknown health and ecological effects of genetically engineered seeds, plants, and animals, and we are gravely concerned about the patenting of human life which could have unintended consequences for our families and future generations,

22. Whereas, New Mexico is home to various polluting industries, mining operations, power plants, and nuclear facilities that, although serve as a source of financial income for some of our families, also are responsible for pollution that harms all of our families and are part of a pattern of economic development that displaces traditional peoples from the land,

23. Whereas, women are often low-wage workers in these same polluting industries exposed to certain toxins and women are often low-wage agricultural workers who are exposed to pesticides and herbicides in industrial agriculture,

24. Whereas, women have played a key role along with men in social movements to achieve social, economic, and environmental justice by voicing concerns about the threats of toxins to our families and by calling for livelihoods for ourselves and our families that are clean, healthy, and dignified,

Be it resolved;

1. That we are gathered to declare our reverence for our women ancestors that nurtured generation upon generation so that we could be given the blessing of life,

2. Be it further resolved that we will collectively and intentionally work to carry on the seed saving, farming, and ranching traditions of our ancestors and to pass these teachings on to the younger generations,

3. Be it further resolved that we will resist the genetic engineering and patenting of life so that we may maintain the integrity of our seeds, our right to grow our own food, and the sacredness of life itself,

4. Be it further resolved that we will raise our children to be conscious human beings mindful of the sacred gift of life we have been granted by the creator, to be reverent of our Mother Earth, and to be respectful in their relations,

5. Be it further resolved that we will work in solidarity with each other in our struggles to defend the land, air, and water from contamination, exploitation, and commoditization,

6. Be it further resolved that we honor, respect, and recognize the dignity of women and their families throughout the world and here at home who are subjected to exposure to toxins through their work, their food, or their proximity to pollution and that we resolve to speak and act in solidarity with them in efforts to defend the health of their families and communities,

7. Be it further resolved that we will continue to play an important role in reshaping our communities to achieve a vision of safe, healthy, and joyful lives for our families and communities with good, healthy, locally grown food, good livelihoods that honor the dignity of every human person, and a meaningful, spiritual relationship with Mother Earth.

8. Be it further resolved that we will support the work of the **New Mexico Food and Seed Sovereignty Alliance**. (New Mexico Acequia Association (NMAA); Traditional Native American Farmers Association (TNAFA); Tewa Women United (TWU); Honor Our Pueblo Existence (HOPE); Agriculture Implementation, Research and Education (AIRE).

Mission: To continue, revive, and protect our native seeds, crops, heritage fruits, animals, wild plants, traditions, and knowledge of our indigenous, land- and acequia- based communities in New Mexico for the purpose of maintaining and continuing our cultural integrity and resisting the global, industrialized food system that can corrupt our lives, freedom, and culture through inappropriate food production and genetic engineering.

9. Be it further resolved that we will support the work of **Las Mujeres Hablan.** (New Mexico Acequia Association (NMAA);Honor Our Pueblo Existence (HOPE), Tewa Women United (TWU); Concerned Citizens for Nuclear Safety (CCNS); Embudo Valley Environmental Monitoring Group (EVEMG); New Mexico Conference of Churches (NMCC); Community Service Organization (CSO) Del Norte

Mission: To address past, present and future issues arising from the nuclear industry's releases of toxic chemicals and radioactive materials that cause contamination to our land, air, and water; demand clean-up of these sites; question the continued manufacturing of nuclear weapons; and restore justice to the Peoples who have been impacted by this industry. And, address other activities that violate and cause harm to our environment and well-being within the Sacred Mountains of New Mexico and other places in the world,

10. Be it further resolved that we will honor and respect the women in our lives including our mothers, grandmothers, and great-grandmothers by thanking them for giving us life and for nurturing us throughout our lives,

AND:

May it be further resolved that we the undersigned, have read this document and are in support of Las Mujeres Hablan: The Women Speak; Women's Declaration for New Mexico 2010. We find it to be true and will assist wherever possible to learn and teach the children, boys and girls, the importance of living close to the land, having respectful relations with one another and act with dignity and respect to protect Mother Earth, so she in turn can continue to care for us.

"Indigenous Women and Environmental Violence"

A Rights-based approach addressing impacts of Environmental Contamination on Indigenous Women, Girls and Future Generations

Submitted to the United Nations Permanent Forum on Indigenous Issues Expert Group Meeting *"Combating Violence Against Indigenous Women and Girls"*, January 18 – 20, 2012, United Nations Headquarters, New York by Andrea Carmen, International Indian Treaty Council and Indigenous Women's Environmental and Reproductive Health Initiative, and Viola Waghiyi, Native Village of Savoonga, St. Lawrence Island, Alaska and Alaska Community Action on Toxics

Theme 2: "Contextualizing Violence"

"From a traditional perspective, the health of our Peoples cannot be separated from the health of our environment, the practice of our spirituality and the expression of our inherent right to self-determination, upon which the mental, physical and social health of our communities is based."

--- IITC Oral Intervention presented by Faith Gemmill, Gwich'in Nation Alaska
United Nations Working Group on Indigenous Populations, Geneva July 31, 1996

"We have listened to each other's stories, and have seen the tragic effects within our own families, communities, and nations of the environmental, economic, social and cultural impacts of toxic contamination. These imposed, deplorable conditions violate the right to health and reproductive justice of Indigenous Peoples, and affect the lives, health and development of our unborn and young children. They seriously threaten our survival as Peoples, Cultures, and Nations."

--- Declaration for Health, Life and Defense of Our Land, Rights and Future Generations", 1st International Indigenous Women's Environmental and Reproductive Health Symposium, June 30 – July 1, 2010, UN Permanent Forum's 10th session [E/C.19/2011/CRP. 9]

Above: Annie Alowa, Yupik elder and community health aide stands among toxic waste at the formerly used defense site, Northeast Cape, St. Lawrence Island, Ak *photo: ACAT*
Right: Three generations of women and girls from a Yaqui family affected by pesticides: Potam Pueblo, Rio Yaqui, Sonora Mexico, June 2006. *Photo: Jeff Conant*

I. Introduction

The severe and ongoing harm caused by environmental toxics to Indigenous women, girls, unborn generations and Indigenous Peoples as a whole, requires immediate attention. These toxics include pesticides and other Persistent Organic Pollutants, as well as chemicals produced by extractive industries (coal, oil, tar sands etc.), military installations and weapons testing, waste dumping and incineration, industrial processes, all phases of uranium mining, milling and waste storage.

The production, use, dumping, and general proliferation of environmental toxics adverse effect the collective and individual rights of Indigenous Peoples, and Indigenous women and children specifically, to free prior and informed consent, health, well-being, culture, development, food and subsistence, life and security of person. The lack of accountability by corporations and States is resulting in devastating health impacts that continue to release environmental toxics into the environment. Of more than 80,000 chemicals in commerce, more than 85% of these chemicals have never been assessed for possible effects on human health in general, let alone their specific impacts on Indigenous women as a uniquely vulnerable group.

States and industry knowingly permit, produce, release, store, transport, export and dump hazardous chemicals that impair the endocrine and immune systems, adversely affect neurodevelopment and reproduction, and cause disease including all forms of cancer with few consequences. This is an egregious example of impunity. Unlike infectious diseases, environmental contaminants that cause disease and death are either deliberately released into the environment specifically *because* they are toxic to living things (i.e. pesticides), or they are a result of manufacturing from industrial or military processes that are judged by States and corporations to pose an "acceptable risk" as compared to their purported economic or military "benefits" to society as a whole. States and corporations deny "provable" impacts despite the clear evidence that these environmental toxics cause a range of serious, well documented health impacts, including harm to reproduction, health and fetal development which disproportionately affect Indigenous women.

Indigenous Peoples live in some of the most remote areas in the world: the deserts, mountains, forests and Arctic tundra. Indigenous families subsist off the land and waters through farming, herding, hunting, fishing and gathering for their main food supplies. Many of these regions are heavily exposed to toxic contaminants as a result of mining and extractive industries as well as industrial agriculture and "green revolution" programs which rely heavily on the use of toxic pesticides. Many chemicals are also transported atmospherically and through ocean currents, and heavily contaminate Indigenous lands and foods far from the points of production and use.

Indigenous women play a key role in farming, food gathering and preparation. They are also cultural practitioners, healers, teachers and knowledge holders who have a central role in the transmission of language and culture to younger generations. Indigenous women have a central role in food gathering and preparation and in a range of traditional cultural practices inextricably linked to the natural environment. These everyday practices increase their exposure and makes them particularly vulnerable to absorbing environmental contaminants, which are increasingly affecting their health, livelihoods and reproductive capacities.

The particular health effects of toxic contaminants on Indigenous women are well documented, and are further affirmed through a range of testimonies from the communities most affected, some of which have been included in this paper. Multiple studies confirm that alarmingly high levels of toxics are found in Indigenous women's breast milk, placental cord blood, blood serum and body fat. Devastating impacts on maternal health include sterility, reproductive system cancers, decreased lactation and the inability to produce healthy children. Research also demonstrates the link between chemical exposures and intellectual and neurological

development of children, impacting their ability to retain and pass on culture, ceremonies, stories, language, songs -- a primary concern of Indigenous women.

Participants in the **1st International Indigenous Women's Environmental and Reproductive Health Symposium** from the North America, Latin America, Pacific, and Arctic and Caribbean regions summarized the impacts:

"Indigenous Peoples, and in particular women and children, are suffering the detrimental, devastating, multi-generational and deadly impacts of environmental toxins and contaminants that were unheard of in our communities prior to industrialization, including:

- *Contamination of mothers' breast milk at 4 to 12 times the levels found in the mother's body tissue in some Indigenous communities;*
- *Elevated levels of contaminants such as POPs and heavy metals in infant cord blood; Disproportionate levels of reproductive system cancers of the breasts, ovaries, uterus, prostate and testicles, including in young people;*
- *Increasing numbers of miscarriages and stillbirths, and;*
- *High levels of sterility and infertility in contaminated communities."*[1]

The disproportionate impacts of environmental contamination on Indigenous Peoples and communities of color are the basis of the now well-accepted concept "environmental racism". The concept of "gender-based environmental violence" is not yet as common. Through this paper, we hope to lay some initial groundwork for the continuing development of this concept, and the development of solutions through implementation of human rights accountability. We will demonstrate why Indigenous women, and the unborn children that they carry, are disproportionally affected by environmental toxics for a number of cultural and biological reasons. We will also address some of the associated pervasive human rights violations that impact Indigenous women, girls, and the cultural health, viability and survival of Indigenous Peoples as a whole.

II. Environmental Violence Against Indigenous Women and Children: Human Rights Framework

"The protection of our health, lands, resources including air and water, languages, cultures, traditional foods and subsistence, sovereignty and self-determination, and the transmission of our traditional knowledge and teachings to our future generations are inherent and inalienable human rights. These rights are affirmed in the ***UN Declaration on the Rights of Indigenous Peoples*** *and other international standards, and must be upheld, respected and fully implemented."* [2]

"Human rights are integral to the promotion of peace and security, economic prosperity and social equity... A major task for the United Nations, therefore, is to enhance its human rights programme and fully integrate it into the broad range of the Organization's activities". [3]

The fundamental link between human rights and environmental contamination is a relatively new and evolving concept in the UN system. It has yet to be fully recognized and effectively integrated in international Convention

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[1] Declaration for Health, Life and Defense of Our Land, Rights and Future Generations", *1st International Indigenous Women's Environmental and Reproductive Health Symposium, June 30 – July 1, 2010*, submitted to the UN Permanent Forum's 10th session as Conference Room Paper [E/C.19/2011/CRP. 9]

[2] Ibid

[3] "Human Rights in the Report of the Secretary-General on Renewing the United Nations: a Programme for Reform, Extracts from the report of the Secretary-General to the General Assembly, A/51/950, para. 78 and 79, 14 July 1997

processes addressing toxic contaminants. Many States continue to resist addressing this fundamental inter-relationship in the context of UN Environmental Convention processes, despite the fact that a number of existing international human rights norms and standards provide a clear and compelling case for doing so.

A central factor of the proliferation of environmental toxics is the conscious and deliberate nature of their production, marketing, export and release despite their well-known and well documented risks and impacts. Identifying the disproportionate and often devastating impacts on Indigenous women as "environmental violence" for which States and corporations can be held accountable is an even newer concept. A review of some of the inter-related human rights affirmed in international standards can begin to provide the elements and framework for the development of this emerging concept. These include, inter alia:

1. The rights of all individuals to health, food and well-being (Article 25), and life and security of person (Article 3) as per the Universal Declaration on Human Rights.
2. The rights of Indigenous Peoples to self-determination and free prior informed consent, regarding matters which affect them including the use of hazardous materials on their lands, to determine their own priorities for development, and to maintain the productive capacity of their lands[4], in particular, in this context, as applies to the economic, subsistence and cultural activities to which Indigenous women are directly tied.
3. The rights of Indigenous Peoples to attain the highest levels of health.[5]
4. The rights of Indigenous Peoples to practice and transmit their cultures and traditional knowledge to future generations.[6]
5. The rights of Indigenous women and children to special protection.[7]
6. The obligation of States to implement, promote and monitor the enjoyment of these rights, to implement effective solutions, remedies and mechanisms in conjunction with Indigenous Peoples and monitor the human rights impacts of corporations which they license as specifically recommended by the UN CERD in its periodic reviews of Canada and the US. (2007 and 2008)

The ongoing resistance of States to the mainstreaming of human rights into international environmental standard-setting processes may be directly related to their resistance to consider accountability mechanisms for the egregious and ongoing violations of human rights resulting from the deliberate production, sale and use of toxic substances with well-known and well-documented harmful effects on human health and development.

Specific relevant Human Rights Standards which can provide a useful framework for the UNPFII's consideration of "environmental violence" as new area of human rights include:

A. The United Nations Declaration on the Rights of Indigenous Peoples in its preamble affirms the principle of non-discrimination as well as the rights of Indigenous People to maintain their traditional economic, cultural and subsistence activities, protect their health and exercise free prior informed consent regarding decisions and activities affecting them, including the release of environmental toxics in their lands. These rights have been directly threatened and violated, both on an individual and collective level, by State policies and corporate activities which promote, allow and impose unsustainable economic development, including resource extraction and industrial agriculture.

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[4] Article 29, UN Declaration on the Rights of Indigenous Peoples as well as CERD General Recommendation XXIII

[5] UNDRIP Article 24

[6] various Articles of the UNDRIP as well as UNESCO, the Convention on the Rights of the Child and others

[7] affirmed in both the UDHR Article 25 and UNDRIP Articles 21 and 22

A number of Preambular paragraphs and Articles of the UN Declaration on the Rights of Indigenous Peoples directly address the rights of Indigenous Peoples, and Indigenous women, as well as State obligations to take both preventative and restorative action. These include:

- Article 3 - Right to Self-Determination
- Article 7 – the Right to Life, physical and mental integrity and the security of person; right to live as distinct Peoples
- Article 8 - Right to not be subjected to destruction of culture
- Article 13 - Right to revitalize, use, develop and transmit histories, languages and oral traditions to future generations
- Article 19 – Free Prior and Informed Consent regarding legislative and administrative measures by states
- Article 20 - Right to be secure in subsistence and development
- Article 21 – Right to the improvement of their economic and social conditions, including, inter alia, health
- Article 22 - Attention to the rights and special needs of indigenous elders, women, youth, children and persons with disabilities
- Article 24 - Right to the highest attainable standard of health and the conservation of vital plants and animals
- Article 25 – Right to maintain spiritual relationships to land and resources for future generations
- Article 26 – Right to traditional lands, territories and resources
- Article 29 - Right to conservation and protection of the environment and productive capacity of lands, territories and resources; right to free prior and informed consent regarding hazardous materials and the obligations of States to take action to restore the health of the Indigenous Peoples affected
- Article 31 - Right to maintain, control, protect and develop cultural heritage, traditional knowledge and cultural expressions including genetic resources, seeds and medicines
- Article 32 - Right to determine and develop priorities and strategies for development including the right to free, prior and informed consent
- Article 37 – Treaty Rights
- Article 42 - Obligation for implementation and follow-up by States and UN agencies and processes

Article 29, paragraphs 2 and 3 are of particular relevance to this discussion with regards to the rights of Indigenous Peoples and the related obligations of States:

2. States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent.
3. States shall also take effective measures to ensure, as needed, that programmes for monitoring, maintaining and restoring the health of indigenous peoples, as developed and implemented by the peoples affected by such materials, are duly implemented.

B. The International Covenant on Civil and Political Rights (ICCPR)

Article 27 of the ICCPR states:

"In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with other members of the group, to enjoy their own culture, to profess and practice their own religion, or to use their own language."

General Comment 23 of the Human Rights Committee is meant to serve as guidance to the States in their compliance with Article 27:

"With regard to the exercise of the cultural rights protected under article 27, the Committee observes that culture manifests itself in many forms, including a particular way of life associated with the use of land resources, especially in the case of Indigenous Peoples. That right may include such traditional activities as fishing or hunting, and the right to live in reserves protected by law. The enjoyment of those rights may require positive legal measures of protection and measures to ensure the effective participation of members of minority communities in decisions that affect them."[8]

C. The Right to Food, Food Security, Subsistence and Food Sovereignty

"...In no case may a people be deprived of its own means of subsistence."

-- Article 1 in Common, International Covenants on Civil and Political Rights and on Economic, Social and Cultural Rights

The Rights to Health and Culture for Indigenous Peoples are closely linked to the Right to Food and Subsistence. It is well documented that environmental toxins have a serious impact on traditional foods, creating a false and forced choice for Indigenous Peoples, in particular, pregnant and nursing mothers. They are often forced to choose between the cultural and nutritional value of their traditional foods and subsistence way of life, and the health and development of their unborn children, as well as their ability to have children at all.

In 1997 the United Nations Rapporteur on the Right to Food, Jean Zeigler responded to a submission by the International Indian Treaty Council on behalf of Indigenous Tribes and Peoples in Northern California addressing mercury contamination and St. Lawrence Island, Alaska regarding military toxics and the impacts of this contamination on their traditional subsistence foods.

"The Special Rapporteur believes that the contamination of indigenous peoples' land and water affecting their livelihood (traditional fishing) may contribute to a violation of the Government's obligation to respect the right to food." [9]

Indigenous Peoples have consistently identified toxic contaminants as one of the primary obstacles to their food sovereignty, also affirming the inter-related links to the health impacts on Indigenous women and children. The **"DECLARATION OF ATITLÁN"** from the **1st Indigenous Peoples' Global Consultation on the Right to Food** in Atitlán, Sololá, Guatemala, April 17 - 19, 2002, identified toxic chemicals, in particular those used in industrial agriculture as a primary obstacles to their Food Security and Food Sovereignty, also noting the effects on women's and children's health, as follows:

"The growing imposition of the use of pesticides and chemical fertilizers that poison Mother Earth, the communities that work with the Earth, and the food resources on which Indigenous Peoples depend worldwide, affecting food production and hence nutrition and health, and increasing morbidity and mortality rates, in particular for our women and children;"[10]

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[8] General Recommendation No. 23, the rights of minorities (article 27), CCPR/C/21/Rev.1/Add.5, 08/04/1994

[9] UN Special Rapporteur on the Right to Food Jean Ziegler, report to the 4th session of the UN Human Rights Council [A/HRC/4/30/Add.1, 18 May 2007]

[10] **"DECLARATION OF ATITLÁN"** from the 1st Indigenous Peoples' Global Consultation on the Right to Food, Sololá, Guatemala, April 17 - 19, 2002,

D. The United Nations Convention on the Rights of the Child (November 20, 1989) is the international instrument that directly addresses the rights of all children, including the female child. Significantly, it is the only human rights Convention which specifically mentions environmental pollution as a human rights concern affecting the health of children, as well as the closely interrelated issues of maternal and prenatal health:

Article 24
1. States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services.
2. States Parties shall pursue full implementation of this right and, in particular, shall take appropriate measures:
(a) To diminish infant and child mortality;
(c) To combat disease and malnutrition, including within the framework of primary health care, through inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution;
(d) To ensure appropriate pre-natal and post-natal health care for mothers;

General Comment 11 of the Committee on the Rights of the Child [CRC/C/GC/11, 2009] further elaborates and underscores State parties' obligations under the Convention specifically with regards to Indigenous children. It also addresses the issue of maternal and family health and the impacts of environmental contaminants, specifically mentioning pesticides and herbicides:

Regarding "Right to Life, Survival and Development"
35. The Committee reiterates its understanding of development of the child as set out in its general comment No. 5, as a "holistic concept embracing the child's physical, mental, spiritual, moral, psychological and social development". The Preamble of the Convention stresses the importance of the traditions and cultural values of each person, particularly with reference to the protection and harmonious development of the child. In the case of indigenous children whose communities retain a traditional lifestyle, the use of traditional land is of significant importance to their development and enjoyment of culture. States parties should closely consider the cultural significance of traditional land and the quality of the natural environment while ensuring the children's right to life, survival and development to the maximum extent possible.

Regarding "Basic Health and Welfare"
53. States should take all reasonable measures to ensure that indigenous children, families and their communities receive information and education on issues relating to health and preventive care such as nutrition, breastfeeding, pre- and postnatal care, child and adolescent health, vaccinations, communicable diseases (in particular HIV/AIDS and tuberculosis), hygiene, environmental sanitation, and the dangers of pesticides and herbicides.

E. The United Nations Committee on the Elimination of Racial Discrimination (CERD)

Of particular relevance to the human rights framework pertaining to the theme and concerns of this Expert Seminar is General Recommendation No. XXIII on Indigenous Peoples, adopted by the 51st session of UN Committee on the Elimination on Racial Discrimination. [11]
General recommendation XXIII, Paragraph 4 states as follows:

[11] CERD, the Treaty Monitoring Body for the International Convention on the Elimination of All Forms of Racial Discrimination, ICERD, adopted August 18th, 2007

4. The Committee calls in particular upon States parties to:

(c) Provide indigenous peoples with conditions allowing for a sustainable economic and social development compatible with their cultural characteristics;

(d) Ensure that members of indigenous peoples have equal rights in respect of effective participation in public life and that no decisions directly relating to their rights and interests are taken without their informed consent.

(e) Ensure that indigenous communities can exercise their rights to practice and revitalize their cultural traditions and customs and to preserve and to practice their languages.

F. The Universal Declaration of Human Rights (1948) firmly establishes that health and well-being are human rights, and also recognizes that "Motherhood and childhood are entitled to special care and assistance"[12]

G. One of the **5 objectives for the Plan of Action for the 2nd International Decade the Worlds Indigenous Peoples adopted by the UN General Assembly in January 2005 is** "is "*promoting full and effective participation of indigenous peoples in decisions which directly or indirectly affect their lifestyles, traditional lands and territories, their cultural integrity as indigenous peoples with collective rights or any other aspect of their lives, considering the principle of free, prior and informed consent*". This objective is of direct relevance in challenging activities related to environmental contamination which violate Indigenous Peoples' human rights, and provides a framework and criteria by which effective solutions and responses can be developed in full partnership with Indigenous Peoples.

H. UN Convention on the Elimination of Discrimination Against Women (CEDAW)

Although CEDAW does not specifically mention Indigenous women or impacts of environmental toxins, its provisions that address employment and rural women are relevant to these concerns:

Article 11
1. States Parties shall take all appropriate measures to eliminate discrimination against women in the field of employment in order to ensure, on a basis of equality of men and women, the same rights, in particular:
(f) The right to protection of health and to safety in working conditions, including the safeguarding of the function of reproduction.

Article 14
1. States Parties shall take into account the particular problems faced by rural women and the significant roles which rural women play in the economic survival of their families, including their work in the non-monetized sectors of the economy, and shall take all appropriate measures to ensure the application of the provisions of the present Convention to women in rural areas.
2. States Parties shall take all appropriate measures to eliminate discrimination against women in rural areas in order to ensure, on a basis of equality of men and women, which they participate in and benefit from rural development and, in particular, shall ensure to such women the right:
(a) To participate in the elaboration and implementation of development planning at all levels
(b) To have access to adequate health care facilities

[12] Article 25

I. Nation to Nation Treaties between States and Indigenous Nations and the consensual relationships they are based on, if honored, respected and put into practice by all Parties, can be the foundation and model for respectful partnerships addressing this and a range of other issues. This is true, in particular, when there is an urgent need for joint and or/shared decision-making in order to correct current injustices, respond to critical violations and redress historic and ongoing wrongs.

The following and other preambular paragraphs, along with Articles 3, 18, 19, 27, 28, 32, 37 and 40, inter alia, of the UN Declaration on the Rights of Indigenous Peoples make important contributions to a human rights framework incorporating Treaty rights and relationships based on FPIC and full participation in decision-making:

"Considering also those treaties, agreements and other constructive arrangements, and the relationship they represent, are the basis for a strengthened partnership between indigenous peoples and States"

Indigenous Peoples have also affirmed the **"Treaty Right to Health"** as a legally binding and sacred obligation of the Colonial governments, including the British Crown, which entered into Treaties with Indigenous Nations:
"That the medicine chest clause binds the federal government to provide medicines and all that is required to maintain proper health." [13]

III. Case Studies: Environmental Toxics and their impacts on Women and Girls in Indigenous Communities

A. Rio Yaqui, Sonora Mexico: Threats to women's, girl's and future generations' health and development

In 1997, Dr. Elizabeth Guillette, a scientist from the University of Arizona carried out a study of the health effects of industrial agricultural pesticides in the homelands of the Yaqui Indians in Sonora, Mexico,[14] a few hours south of the US/Mexico border. Yaqui Indigenous communities in the agricultural areas have been exposed to frequent aerial and ground spraying of pesticides since the government's implementation of the "Green Revolution" in the late 1940's. For some, their only source of water is contaminated irrigation canals.

In addition to the impacts of pesticides sprayed from airplanes affecting the entire community, Yaqui farm workers who are not provided by growers with any protective gear in the fields. Workers unintentionally carry poisons home in pesticides-soaked clothing and skin, unknowingly spreading the contamination to their families. The maternal health of Yaqui women working in the fields or living nearby, or whose husbands bring the contamination home on their clothing, is particularly impacted. Dr. Guillette's study documented the resulting high levels of pesticides found in the cord blood of newborns and in mother's milk (see table below).

Table 1: Mean concentrations in the cord blood at time of birth and in mothers milk one month post partum from women, Pueblo Yaqui, Sonora, Mexico. [Data from Garcia and Meza, 1991[15]]

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[13] "Treaty Right to Health" resolution adopted by the Chiefs in Treaty No. 6, No. 7 and No. 8, March 16-17, 2005, reaffirmed at the International Indian Treaty Council Conference, Ermineskin Cree Nation, Alberta Canada (Treaty No. 6 Territory) August 7th 2005

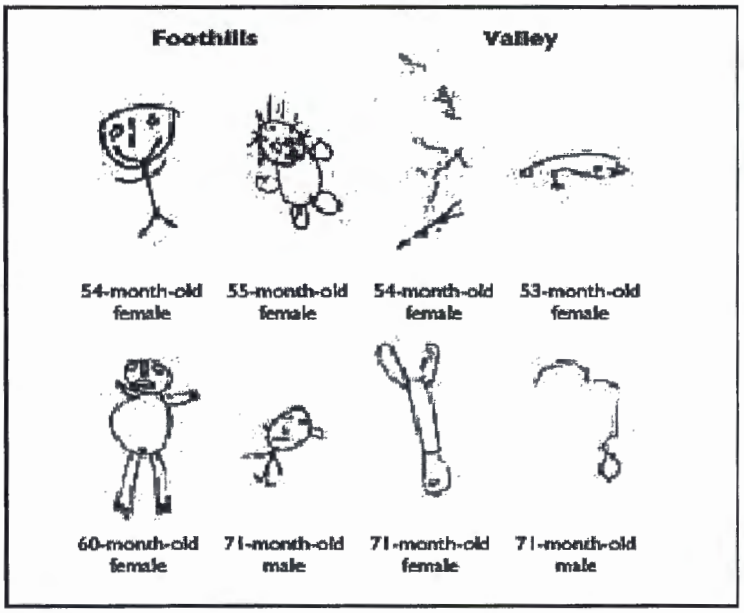
[14] "An Anthropological Approach to the Evaluation of Children Exposed to Pesticides in Mexico", Elizabeth A. Guillette, María Mercedes Meza M. Maria Guadalupe Aquilar A, Alma Delia Soto A., and Idalia Enedina Garcia C., Bureau of Applied Research in Anthropology, University of Arizona, Tucson, AZ, U.S.A. and Direccion de Investigacion y Estudias de Postgrado, Instituto Tecnológico de Sonora, Cd. Obregón, Sonora Mexico, published in *Environmental Health Perspectives* Volume 106, Number 6, June 1998

[15] Ibid

Pesticide	Cord Blood (ppm)	Milk (ppm corrected for fat)
N	19	20
α-HCH	0.030 ± 0.03	0.8599 ± 2.75
β-HCH	0	0.3791 ± 1.08
Lindane	0.084 ± 0.06	0.6710 ± 0.59*
Δ-HCH	0.0039 ± 0.1	0.4432 ± 0.84
Heptachlor	0	1.269 ± 1.65*
BHC	0.003 ± 0.002	0.6270 ± 0.66*
Aldrin	0	0.2363 ± 0.59*
Dieldrin	0.159 ± 0.12	0.0487 ± 0.08
Endrin	0.022 ± 0.02	0.5238 ± 1.1*
p,p'-DDE	0.03 ± 0.03	6.31 ± 5.9
ℜDDE	0.0434	6.52*

*All exceed FAO/OMS established limits

This study also found birth defects, learning and development disabilities, leukemia and other severe health problems in Yaqui children. Combined with personal testimonies from community members collected over years, it also provides strong and compelling evidence of the detrimental impacts of pesticide exposure on the development of exposed Yaqui children. The comparison of Yaqui children in the valley (where pesticide use is heavy) with Yaqui children in the foothills of the Sierra Madre Occidental mountains (where pesticide and insecticide use is minimal to none) showed dramatic differences in motor skills—eye-hand coordination and balance. It showed marked developmental differences included in cognitive skills which were observed in recall, simple problem solving and ability to draw simple stick figures of people:



Her study also found that Valley children had significantly less stamina and hand-eye coordination, poorer short-term memory and were less adept at drawing a person (right) than were children in the foothills (left) where traditional methods of intercropping control pests in gardens and insecticides are rarely used.[16]

Of particular significance to the issues addressed at this EGM is a follow-up study carried out by Dr. Elizabeth Guillette et al examining impacts of in utero pesticides exposure on breast development among girls in Rio Yaqui Sonora Mexico, **"Altered Breast Development in Young Girls from an Agricultural Environment"** published in 2006. This second study was designed to test the hypothesis that abnormal breast development was caused by in utero exposure to agricultural chemicals with endocrine action. The principal difference between the two groups of girls studied was parental exposure to agricultural chemicals which are known to cause endocrine disruption in utero. The study noted that "Various pesticides, mainly organophosphates and organochlorines, were used extensively in the agricultural areas of the Yaqui Valley near the time of the girls' birth (1992–1994), and many of these compounds are known to cross the placenta. A study of newborn children from the Yaqui Valley performed close to the period these children were conceived reported elevated pesticide levels, with cord blood values of lindane, heptachlor, benzene hexachloride, aldrin, and endrin all exceeding World Health Organization established limits (International Programme on Chemical Safety 2005)"[17]

This study was carried through medical examinations (with parental permission) of 50 girls ages 8 – 10 and noted an accelerated rate of breast size development (fatty tissue) in the girls from the high-pesticide use agricultural (valley) areas where their mothers had been exposed to greater levels of pesticides during pregnancy as compared to the girls in the foothill regions where exposure was minimal. Of particular concern to the scientists was the relative lack of and/or abnormal mammary gland development noted in the girls from valley communities, which could have an impact on lactation (breast feeding) later in life as well as a potential links to breast cancer. This first-of-its-kind study (as per Dr. Guillette) examining the relationship between human breast development and environmental contaminants is a unique and alarming confirmation of the impacts of pesticides exposure on the health and development of Indigenous women and girls.

Since 2002, the IITC's **"North-South Indigenous Network against Pesticides Project"** collected and submitted over 50 testimonies from Yaqui community members in Sonora Mexico documenting cancer and leukemia, other illnesses, birth defects and deaths including many from mothers, community midwifes and healers ("curanderas"). These community testimonies have been submitted consistently to the UN Rapporteurs on the adverse effects of the illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights, the Right of everyone to the enjoyment of the highest attainable standard of physical and mental health, Right to Food and Rights of Indigenous Peoples. However, this issue has yet to be addressed as a specific area for in depth investigation by any of the UN mandate holders.

Following are translations into English of two of the most recent testimonies submitted to IITC by Yaqui community mothers and a midwife addressing women's and girl's health impacts, which have not as yet been submitted to any other UN body:

Mrs. Flor Reyna Osuna, (mother of the young woman)
Young woman, Flor Osuna García.
Jesús Gonzales, (midwife)

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[16] Ibid

[17] "Altered Breast Development in Young Girls from an Agricultural Environment" by Elizabeth A. Guillette, Craig Conard, Fernando Lares, Maria Guadalupe Aguilar, John McLachlan, and Louis J. Guillette Jr.

Interviewer: Francisco Villegas Paredes

DECEMBER 15, 2011.

Mrs. Flor Reyna, the mother of a young woman who was born with deformities. Currently the young woman is 30 years old and is 1.20 meters [3'11"] tall. She says that when her daughter was born, the child's body was WATERY and JELLY-LIKE. The girl, due to her scant growth, is unable to move her legs. She can only move her arms. Her vital organs are atrophied. Studies conducted on her reveal that the girl developed deformities while in her mother's womb.

The physicians, as an important conclusion of the studies conducted, consider that the young woman's housing location, on the periphery of agricultural lands and exposed to spraying with agrochemicals, quickly leads to CONGENITAL DISEASES. Also, some biochemists specializing in clinical analysis have analyzed certain products. As a result they have reached important conclusions: mixtures of two or more chemicals applied in inhabited areas also lead to CANCERS.

The midwife, Jesús made the following comments: These deformities are the product of tumors produced by chemicals when young women are exposed to their application while working in the field without personal safety measures or other similar protection.

Mrs. Xóchitl Valdés, (mother of the girl)
Girl: Mariana López Valdés
Interviewer: Francisco Villegas Paredes

DECEMBER 20, 2011.

The girl's mother, Mrs. Mariana López Valdés stated that her pregnancy was very delicate. She was constantly going to the doctor. Even some midwives told her that her girl was not developing well. When the girl was born, she had deformities on her face, principally to her lips. She also stated that the girl's grandfather, Mr. Manuel Valdés works in agriculture and would generally leave chemical residues behind at his house. Some doctors told him, based on studies conducted on the girl that the agro-chemicals are having a direct effect.

The contact she had with the residues while still young caused deformations to some parts of her body when she was a fetus. The girl is alive. She is 1 year 6 months old and her deformities are growing.

The testimonies of these Indigenous women translated from Yaqui into Spanish and then into English, are tragically typical in the highly-impacted Yaqui communities of Sonora Mexico.

B. California, USA

"Indigenous women are life givers, life sustainers and culture holders. Our bodies are sacred places that must be protected, honored and kept free of harmful contaminants in order for the new generations of our Nations to be born strong and healthy."[18]

Data on health impacts of pesticides and the particular danger to maternal health and unborn generations is also well-documented in other regions, including in "developed" countries. For example, results of a 12 year

[18] "The Declaration for Health, Life and Defense of Our Land, Rights and Future Generations", *International Indigenous Women's Environmental and Reproductive Health Symposium,* Alamo, CA in June 30 – July 1, 2010 [E/C.19/2011/CRP. 9

study by the University of California and other agencies of over 600 mothers and their children in the California's Central Valley exposed to pesticides during pregnancy was published in December 2010. The study confirmed that that at age 2, the children of mothers who had the highest levels of organophosphate metabolites in their blood had the lowest levels of mental development in the group. They also had the most cases of pervasive developmental disorders. Prenatal exposure to pesticides has been consistently linked to ADHD and other developmental defects as well as cancers in children such as leukemia. [19]

This work, led by University of California Public Health Professor Brenda Eskenazi, served as a model for a recently launched National Children's Study by the National Institutes of Health (USA), which seeks to examine the effects of the environment on 100,000 children, tracking them from before birth until age 21
It is apparent that the continuing tragic impacts if pesticides on Indigenous women, girls, babies including coming generations is finally beginning to generate greater attention among scientists and policy makers.

Indigenous women in California and elsewhere have stressed the cultural effects of pesticides, which are closely related to health impacts of Indigenous women, and produce a double impact. Traditional cultural activities carried out specifically by Indigenous women, which include food gathering, preparation and production as well as the activities related to the creation of traditional cultural items and art forms, create additional expose to environmental toxins. The following testimony was presented by Monique Sonoquie, Chumash, of the Traditional California Indian Basket Weavers and Indigenous Youth Foundation at the Native Forum preceding the North America Indigenous Peoples preparatory session for UPFII10, March 18th 2011, in Arcata California:

"Pesticides are particularly dangerous to traditional native basket weavers. The Forest Service, Caltrans, governmental agencies, as well as the general public spray pesticides without thought to the natural environment, plants and animals, as well as those of us that work in the forests, parks, rivers, lakes, and oceans. Weavers are affected when gathering in areas sprayed with pesticides, we are constantly at risk as we breathe in, handle and ingest these toxins as we gather, weave and split reeds with our teeth. These pesticides also affect the life and quality of the plants, making them less bug resistant, more fragile, smaller and harder to find, as well as food sources for animals, and traditional medicines for practitioners"

Indigenous women have also expressed concerns regarding the developmental and neurological impacts of neurotoxins such as mercury, many pesticides and industrial chemicals, on the long-term ability of Indigenous peoples to retain and pass on their complex cultural systems which include oral histories, stories, songs language and ceremonies to the next generations. This is a primary responsibility of Indigenous women for girls and young women throughout their learning years, and for young children of both sexes.

It is clear is that the use toxic pesticides in these and other regions causes widespread suffering, injury and death, specifically impacting Indigenous women and girls on a level that constitutes "environmental violence" with a pattern of pervasive and brutal human rights violations that remain, by and large, unchallenged.

C. St. Lawrence Island, Alaska and the Arctic: Military Contamination and Global Transport of Persistent Chemicals

The Yupik Indigenous People of St. Lawrence Island, Alaska (USA) have been harmed and displaced by contamination from formerly used US military bases, with particular effects on women whose breast milk and adipose tissues concentrate chemical contaminants. The US military and Department of Defense disposed of

[19] "Study by the Center for Health Assessment of Mothers and Children of Salinas, a joint project of UC Berkeley, the Natividad Medical Center, Clinica de Salud Del Valle de Salinas and other community organizations, December 2010.

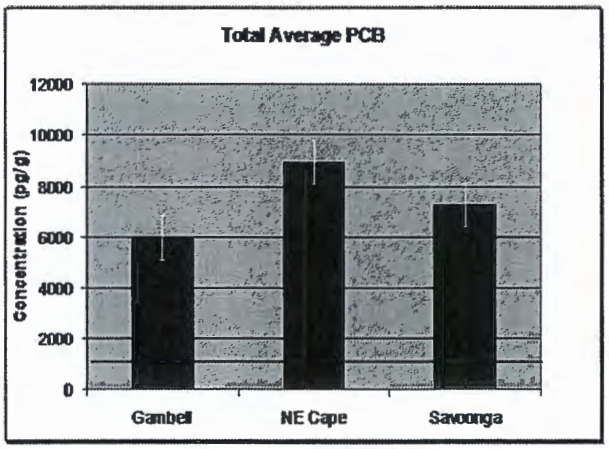
toxic waste on the Island, located in the Arctic Circle between Alaska and Russia, including massive amounts of fuels, solvents, PCBs, PAHs and, mirex (flame retardant), unexploded ordnance, and other persistent pollutants.

Annie Alowa, a respected elder and community health aide from the village of Savoonga, begin to raise concerns in the late 1970's about the adverse health effects she attributed to contamination from the abandoned military site at Northeast Cape, including particular effects on women and children. These included miscarriages, cancer, low-birth weight, and other reproductive health problems. Cancer deaths among the people of St. Lawrence Island are nearly ten times higher than in the general population in Alaska. Contamination from the military sites, which were closed in 1972 but which the US government never removed or adequately cleaned up, continues to adversely affect the health and well-being of the Islands' Indigenous Peoples to this day.

As a result of its strategic importance to the U.S. military during World War II and into present times, Alaska now has 700 formerly used defense sites (FUDS). Two of the most contaminated are located on St. Lawrence Island. The village of Gambell was used as a base for the military beginning in 1948. Hazardous wastes, military debris, unexploded ordnance and spills remain in the soil and groundwater beneath the village. The vulnerability of the drinking water source in Gambell is heightening due to increasing storm surges that accompany rapid climate warming. Northeast Cape is a former U.S. Air Force Base and was also used as a "White Alice" site, part of a military communications network established during the Cold War. Northeast Cape is a traditional food gathering and hunting camp for the residents of Savoonga. A village at Northeast Cape was displaced.

The military installed and later abandoned major facilities at Northeast Cape and Gambell with little or no consideration for the impact on the Island's residents. The Yupik People of St. Lawrence are doubly impacted because the Arctic has become a hemispheric sink for persistent chemicals that travel hundreds of miles into the region and accumulate in the bodies of wildlife and humans.

Hazardous chemicals from military waste sites combined with global transport of POPs to the north contaminate traditional subsistence foods, water supplies, medicinal and food plants (berries, herbs, greens, roots, etc.) that women use, gather and prepare, further exposing them in particular. This double source of toxic contamination undermines the health, cultural practices and development of the Yupik People of St. Lawrence Island, the reproductive health of Yupik women, and the right to survival of their future generations. This pattern is repeated in many other Arctic Indigenous communities.



*Levels of PCBs in the blood of St. Lawrence Island Yupik people are **6-9 times higher** than the average in the continental United States populations (indicated by the red line).*

Tribal members from the Villages of Savoonga and Gambell on St. Lawrence Island have levels of PCBs in their blood serum that are 6-9 times higher the average levels in people living in the continental United States due to global transport, with discernibly higher PCB levels among the people who lived or worked at the military base at Northeast Cape. Community health researchers on the island have documented health outcomes of concern including cancers, thyroid disease, learning and developmental problems, diabetes, heart disease, and reproductive health problems. As stated by Dr. David Carpenter, Director of the Institute for Health and the Environment at the University at Albany: "The evidence that there are health hazards from exposures to PCBs in the range of 6-9 ppb is very strong, with disease outcomes ranging from cancer to neurobehavioral effects to endocrine disruption and immune suppression."

Temperatures in the Arctic are warming 5-10 times faster than elsewhere in the world. These outcomes of climate change also cause more rapid dispersal of contaminants into freshwater and marine environments, affecting the health of fish and marine mammals that serve as the main traditional foods for Arctic and northern Indigenous Peoples. Atmospheric loading of contaminants to the ocean surface is increased as sea ice retreats.

D. Global Transport of Persistent Organic Pollutants (POPs) and Impacts on Arctic Indigenous Peoples

Persistent organic pollutants (POPs) are long-lasting pesticides and industrial chemicals that bioaccumulate through the food web, are capable of long-range transport and are toxic to humans and wildlife.[20] The highly toxic organochlorine (OC) pesticides DDT, toxaphene, chlordane, endosulfan, and lindane, and other POPs such as PCBs have been found in human and animal tissue as well as human breast milk in the Arctic at levels several times higher than in the rest of the world. The levels keep rising long after certain of these substances have been banned. For instance, even though DDT agricultural uses have been banned for 30 years in the U.S, it is still accumulating in the Arctic in peregrine falcons, orcas, and human beings

Through a well-known process known as 'global distillation' POPs travel northward and bioaccumulate in high quantities in the bodies of fish, marine mammals and other components of the traditional diets of the Indigenous Peoples in the Arctic. Prevailing ocean and wind currents bring contaminants to the Arctic where they are subsequently trapped by the cold climate. This process is often referred to as the "grasshopper effect", as chemicals repeatedly evaporate and condense while in their journey toward the Arctic. The Arctic is known as the ultimate sink because these contaminants concentrate in the cold environment and fat-based food web.

Levels of OC pesticides such as DDT, chlordane and endosulfan have been increasing in the Arctic. DDT in people is higher in the Arctic than in the rest of the world. PCB levels are 8 to 12 times higher than in the "lower 48 states" of the U.S. and Chlordane levels are 8 to 10 times higher in the people of St. Lawrence Island. Yupik women of the Yukon-Kuskokwim Delta region of Alaska have the highest levels of the POPs chemicals known as PBDEs (polybrominated diphenyl ethers) used as flame retardants in furniture, mattresses and electronics.[21]

POPs chemicals are causing changes in the very DNA of the people living in these areas, which has implications related to intergenerational health effects. The health impacts of POPs on Indigenous Peoples are well-documented on St. Lawrence Island. Much of the contamination by PCBs and other POPs is attributed to past

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[20] Stockholm Convention on Persistent Organic Pollutants. http://chm.pops.int/Convention/ThePOPs/tabid/673/Default.aspx accessed November 2011.

[21] Alaska Community Action on Toxics. 2009. Persistent Organic Pollutants in the Arctic: a report for the delegates of the fourth conference of parties of the Stockholm Convention; http://www.akaction.org/Publications_FactSheets_and_Video.htm

and present U.S. military base operations. [22],[23] However, POPs pesticides also continue to build up in Indigenous Peoples' and animals' bodies as these chemicals move northward.

In 1991, the United States joined several other Arctic States in adopting the Arctic Environmental Protection Strategy (AEPS). The AEPS addresses the monitoring, assessment, protection, and conservation of the Arctic zone. The U.S. and the other signing countries made a commitment to, among other things, "monitor the levels of, and assess the effects of, anthropogenic pollutants in all components of the Arctic environment" and "take preventive and other measures directly or through competent international organizations regarding marine pollution in the Arctic irrespective of origin."

In a statement made to U.S. officials of the Environmental Protection Agency, St. Lawrence Island tribal leaders asserted: "The Indigenous Arctic peoples are suffering the most from these chemicals because the chemicals – DDT, endosulfan, lindane, perfluorinated compounds and toxic flame retardants, to name a few—are long lasting, and drift North on wind and water currents from where they are applied in the Southern latitudes. That means these chemicals are also in our traditional foods and affecting our health and the health of our children."

The Arctic is home to approximately half a million Indigenous Peoples, who face significant cultural, food security/subsistence and human health threats from global contaminants combined with climate change which also threatens their food security and traditional subsistence food sources. Indigenous communities of the north are reliant on a traditional diet of foods from the land and ocean for their physical, cultural, and spiritual sustenance. In a 2010 study, researchers found levels of PCBs in the traditional foods of the Yupik people of St. Lawrence Island at 200-400 times the levels considered safe for consumption, particularly in the rendered oils that are so vital for survival in the cold Arctic environment.

The cost of store-bought food is almost six times higher for the same products in rural Alaska compared to other U.S. states. Loss of subsistence foods causes an unbearable economic and nutritional hardship for Arctic Indigenous Peoples and undermines cultural practices handed down through generations.

Specific impacts on women, children and maternal health are well documented. Disparities of health problems in the Alaskan Arctic include high levels of birth defects and neonatal deaths among Alaska Native infants that cannot be explained by the usual risk factors of maternal use of tobacco or alcohol. Data from the Alaska Birth Defects registry shows that the prevalence of birth defects in Alaska is twice as high as in the United States as a whole and that Alaska Native infants have twice the risk of birth defects as white infants born in Alaska. Mothers residing in villages with high hazard ranking are 43% more likely to have a low birth weight baby, 45% more likely to give birth prematurely and more likely to have babies afflicted with intrauterine growth retardation.[24]

IV. Scientific Evidence: Impacts of these Environmental Contaminants Women, Children, and Maternal Health

"We must never forget that it is at this most critical window of development in the mother's womb, the child's first environment and first relationship, where the embodied wealth of indigenous nations is determined."[25]

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[22] Henifin, Kai A. 2007. Toxic Politics at 64N, 171W: Addressing Military Contaminants on St. Lawrence Island. (Graduate thesis) http://ir.library.oregonstate.edu/dspace/bitstream/1957/4531/1/Henifin_Thesis_Revised.pdf

[23] Christopherson, S., M. Hogan, & A. Rothe. 2006. Formerly Used Defense Sites in the Norton Sound Region: Location, History of Use, Contaminants Present, and Status of Clean-up Efforts. Prepared for Alaska Community Action on Toxics

[24] Gilbreath, S. and Philip Kass. 2006. Adverse birth outcomes associated with open dumpsites in Alaska Native villages. American Journal of Epidemiology 164(6):518-528.

[25] ---Tekatsitsiakwa Katsi Cook, Akwesasne Mohawk: "Protecting the Child in the First Environment: Preconception Health To Save Native Future": Journal of the National Museum of the American Indian, Winter, 2011, 24-27

---Tekatsitsiakwa Katsi Cook, Akwesasne Mohawk: "Protecting the Child in the First Environment: Preconception Health to Save Native Future": Journal of the National Museum of the American Indian, Winter, 2011

A growing body of scientific evidence demonstrates that harm to women's health, particularly reproductive health, is closely associated with exposure to endocrine-disrupting chemicals, which include many POPs and pesticides, often at extremely low levels. In 2009, the Endocrine Society, a medical association of 14,000 endocrine researchers and specialists from more than 100 countries, warned that "even infinitesimally low levels of exposure [to endocrine-disrupting chemicals]–indeed, any level of exposure at all– may cause endocrine or reproductive abnormalities, particularly if exposure occurs during a critical developmental window. Surprisingly, low doses may even exert more potent effects than higher doses."[26] Studies from various fields are converging to implicate endocrine disrupting chemicals as a significant concern to public health. These are substances in our environment, food, and consumer products that interfere with "hormone biosynthesis, metabolism, or action resulting in a deviation from normal homeostatic control of reproduction. Effects of endocrine-disrupting chemicals may be transmitted to further generations through germline epigenetic modifications or from continued exposure of offspring to the environmental insult."[27]

"On top of our basic genetic inheritance lies epigenetics, or those environmental influences that drive changes in the gene function of the developing fetus. Many external agents during critical windows of a child's development, including maternal stress during pregnancy, maternal behaviors, exposures to toxic chemicals, radioactivity, cigarette smoke, diesel exhaust, heavy metals, and persistent organic pollutants like PCBs have lifelong effects on the child's physical, mental and emotional health and well-being. These epigenetic effects and their "reprogramming" of our mammalian physical functions during fetal development and through the end of adolescence can persist across generations."[28]

A 2005 peer-reviewed study by the Environmental Working Group found an average of 200 industrial chemicals and pollutants in the umbilical cord blood of ten babies born in U.S. hospitals.[29] In a study of infants born in 2007 and 2008, the Environmental Working Group commissioned five laboratories in the U.S., Canada, and Europe to analyze umbilical cord blood collected from 10 "minority" infants born in 2007 and 2008. "Collectively, the laboratories identified up to 232 industrial compounds and pollutants in these babies, finding complex mixtures of compounds in each infant. This research demonstrates that industrial chemicals cross the placenta in large numbers to contaminate a baby before the moment of birth." The developing child is particularly vulnerable. Exposures in the womb can result in immediate harm to the child's development; however "some adverse effects may not manifest themselves for years or decades. Scientists refer to this phenomenon as the "fetal basis of adult disease."[30]

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[26] Diamanti-Kandarakis, Evanthia. Jean-Pierre Bourguignon, Linda C. Giudice, Russ Hauser, Gail S. Prins, Ana M. Soto, R. Thomas Zeller, Andrea C. Gore. 2009. Endocrine-Distrupting Chemicals: An Endocrine Society Scientific Statement. *Endocrine Reviews* 30(4):293-342. http://www.ncbi.nlm.nih.gov/pubmed/19502515

[27] Diamanti-Kandarakis, Evanthia. Jean-Pierre Bourguignon, Linda C. Giudice, Russ Hauser, Gail S. Prins, Ana M. Soto, R. Thomas Zeller, Andrea C. Gore. 2009. Endocrine-Distrupting Chemicals: An Endocrine Society Scientific Statement. *Endocrine Reviews* 30(4):293-342. http://www.ncbi.nlm.nih.gov/pubmed/19502515

[28] Cook, Tekatsitsiakwa Katsi. 2011. Protecting the Child in the First Environment: Preconception Health to Save the Native Future. Journal of the National Museum of the American Indian Winter 2011:24-27.

[29] Environmental Working Group Report Industrial Pollution Begins in the Womb, a Benchmark Investigation of Industrial Chemicals, Pollutants, and Pesticides in Human Umbilical Cord Blood. 2005. Accessed at: www.ewg.org.

[30] Environmental Working Group Report Pollution in Minority Newborns. 2009. Accessed at: www.ewg.org.

Exposure to chemicals can damage women's reproductive health by causing structural malformations and disease, adversely affect tissues or cells of the reproductive organs, and interfere with the endocrine system. Exposure to chemicals is linked with impaired fertility and ability to carry a baby to term. Chemical exposures also confer a higher risk of cancers and disorders of women's reproductive system. Some examples include:

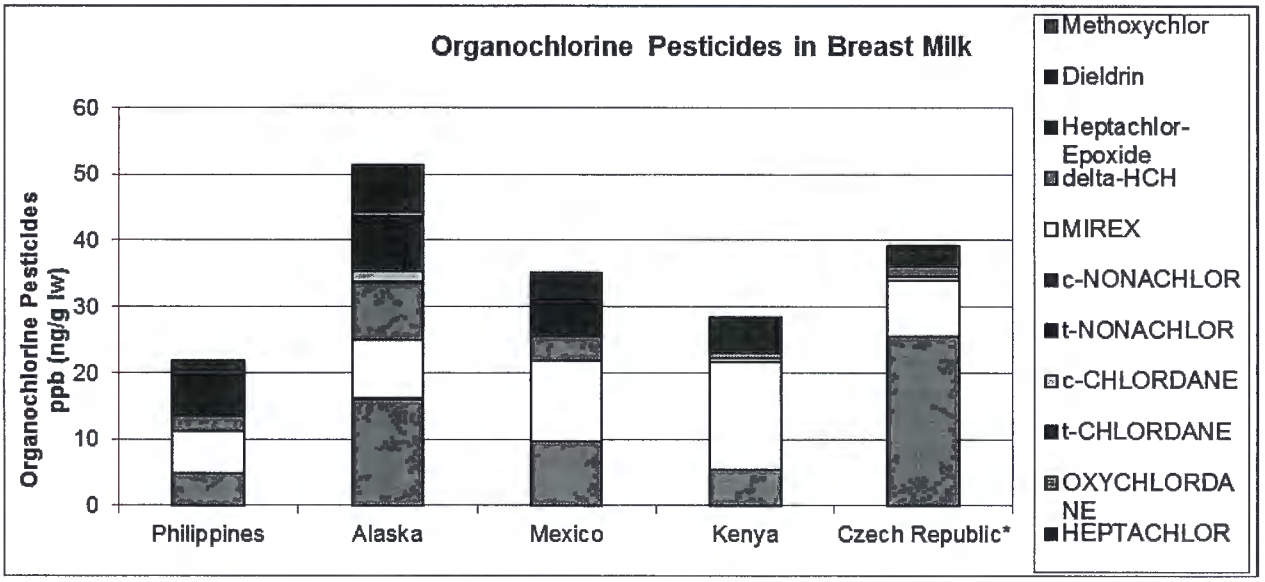
- Uterine fibroids—these noncancerous tumors of muscle lining of the uterus occur in 50% or more of women and are the major cause of hysterectomy in women of reproductive age. They can cause pain, abnormal bleeding, infertility and complications in pregnancy. Although all of the causes are not well understood, exposure to endocrine-disrupting chemicals (xenoestrogens) may cause fibroids. For example, researchers have found that exposure to the chemical bisphenol-A (BPA), found in certain hard plastics and the material lining canned foods and beverages is associated with fibroid development in laboratory studies.
- Endometriosis—is a painful disease occurring when the endometrium, tissue lining the inside of the uterus, grows outside of the uterus into the abdomen, pelvis, or ovaries. Endometriosis affects 10-20% of women of reproductive age and is a leading cause of infertility and hysterectomy. Dioxins and PCBs are among the chemicals associated with endometriosis in animal and human studies. Higher levels of phthalates (an endocrine-disrupting chemical found in personal care products and soft plastics) were found in women with endometriosis.
- Reproductive tract development and disease—exposure to certain xenoestrogenic chemicals such as BPA and the pesticide methoxychlor can interfere with the implantation of fertilized eggs in the uterus or harm the developing bones and uterus of developing babies.
- Effects on ovarian follicles—exposure to endocrine-disrupting chemicals during fetal development can adversely affect the quality and quantity of ovarian follicles. A recent study found that when laboratory animals are exposed to bisphenol-A at levels commonly measured in people, that high percentages (nearly 50%) of their eggs have chromosomal abnormalities. This genetic defect is then also found in the embryos that develop from these eggs. Chromosome abnormalities are the leading cause of miscarriages, birth defects, and mental retardation in people. Bisphenol-A is also associated with re-current miscarriages in humans.
- Early puberty—research demonstrates that exposure to chemicals such as PCs, PBDEs (polybrominated diphenyl ethers), dioxins, and phthalates is associated with earlier onset of puberty in girls.
- Breast cancer—more than 200 chemicals, including a number of endocrine-disrupting chemicals, are associated with increased incidence of breast tumors. Breast cancer incidence rates increased in the U.S. more than 40% between 1973 and 1998, a period that coincides with increasing production and use of pesticides and other industrial chemicals. A woman's lifetime risk of breast cancer is one in eight, as of January 1, 2006 (the most recent point in time for which data are available).
- Miscarriages—exposures to BPA and pesticides such as DDT are associated with miscarriages. Miscarriages affect 21% of known pregnancies and although there are a variety of factors, there is strong evidence that toxic chemicals are significant risk factors.
- Shortened lactation—PCBs and pesticides such as atrazine are associated with a reduction in the length of time that women can breastfeed her baby. Shortened lactation is a critical problem because it has long-term consequences for the development of a healthy child, including increased risk for infection and impaired immunity, obesity, and learning disorders.[31]

V. Contamination of Breast Milk Threatens Current and Future Generations

[31] Information in this section from the report *shaping Our Legacy: Reproductive Health and the Environment*. 2008. A report by the Program on Reproductive Health and the Environment, Department of Obstetrics, Gynecology, and Reproductive Sciences, National Center of Excellence in Women's Health, University of California, San Francisco.

Levels of contaminants found in breast milk demonstrate disproportionate effects in Indigenous communities. Human breast milk is a bioresource at the foundation of subsistence economies and traditional food ways of Indigenous communities. Biomonitoring of human breast milk has shown the ubiquity of persistent organic pollutants in the environment.[32] One study noted that in the Akwesasne Mohawk population with lifetime exposures to consuming fish near contaminated sites, women produced breast milk with higher concentrations of PCBs; yet when later generations of Akwesasne Mohawk mothers heeded fish advisories and did not have such lifetime exposures, the breast milk concentrations of PCBs went down.[33] Unfortunately, in many tribal jurisdictions, where subsistence foods provide an economic and healthy means to eat, and where other sources of food are less available and less desirable, tribal women may not have such a choice.

In a more recent study looking at body burdens of persistent organic pollutants in the Akwesasne Mohawk youth ages 17 to 21 years old, significantly higher levels of PCBs were found among individuals who were breastfed as infants, were first born, or had consumed local fish within the past year. [34]Comparing levels of various persistent organic pollutants (POPs) reported by the U.S. Centers for Disease Control (CDC) for youth between the ages of 12 and 19 years old, the geometric mean of several congeners was significantly higher than the reported CDC 90th percentile. This suggests continued higher than acceptable exposures and body burdens in Indigenous communities either through diet or other sources. Of five women tested from Czechoslovakia, Kenya, Mexico, Philippines and Alaska, levels of pesticides and the industrial chemicals PBDEs (polybrominated diphenyl ethers—used as flame retardants in furniture, mattresses and electronics) were highest in the breast milk of a Yupik woman from Arctic Alaska (see charts below).[35]



Contamination of human milk in Arctic mothers by POPs has been documented at levels considered unsafe. Impacted Indigenous Peoples have stated that they consider the contamination of breast milk as a clear human rights violation, making the most nutritious food for infants poisonous and contaminated in the pursuit of profit.

[32] Fitzgerald, E. Hwang, S. et al. 1998. Fish Consumption and Breast Milk PCB Concentrations among Mohawk Women at Akwesasne, American Journal of Epidemiology 148:164-172.
[33] Fitzgerald et al. 1998.
[34] Gallo et al. 2011. Levels of persistent organic pollutant and their predictors among young adults. Chemosphere 03/2011; DOI: 10.1016/j.chemosphere.2011.02.071.
[35] Commonweal. 2009. Report: Monitoring Mother Earth by Monitoring Mother's Milk. www.ipen.org.

Indigenous women continue to strongly encourage breastfeeding for a number of nutritional, spiritual, social, cultural, health and economic reasons. However they demand an immediate halt to all activities which cause it to be contaminated.

VI. State and International Complicity: the Manufacture and Exportation of Banned Pesticides from the United States to Mexico and others countries

"Just because something is not illegal, it may still be immoral. Allowing the export of products recognized to be harmful is immoral."

- UN Special Rapporteur on Adverse effects of the illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights, Ms. Fatma-Zohra Ouhachi-Vesely on her first official country visit to the United States, 2001

In 2001, the Special Rapporteur on Adverse effects of the illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights, Ms. Fatma-Zohra Ouhachi-Vesely visited the United States. She found that the United States allowed the manufacture and exportation of pesticides that were banned for use in the United States to other, primarily developing, countries. She cited a report on the alarming levels of this exportation:

"United States Customs records reveal that 3.2 billion pounds of pesticide products were exported in 1997-2000, an average rate of 45 tons per hour. Nearly 65 million pounds of the exported pesticides were either forbidden or severely restricted in the United States [...]. In the 1997-1999 periods, shipments of banned products were found in Customs Records [...] 57 per cent of these products were shipped to a destination in the developing world. Nearly half of the remaining 43 per cent were shipped to ports in Belgium and the Netherlands. Though it is not possible to make a final determination from available data, it is likely that the final destinations of a large number of these shipments were also developing countries." [36]

The same report further stated that:

"[B]etween 1996-2000, the United States exported nearly 1.1 billion pounds of pesticides that have been identified as known or suspected carcinogens, an average rate of almost 16 tons per hour [...]"[37]

These figures have particular importance in regard to girls and boys in developing countries. According to the International Labor Organization, 65 to 90 per cent of the children estimated to be working in Africa (80 million), Asia (152 million) and Latin America (17 million) are working in agriculture. Evidence that children have heightened susceptibility to the carcinogenic effects of pesticides has even greater significance for developing countries. There, children live and work in conditions that involve almost continuous exposure, ranging from contact in fields to contaminated water, pesticide-contaminated clothing, and storage of pesticides in homes.

A more recent report based on US Government Custom Service Records, "*Pesticide Exports from U.S. Ports, 2001–2003*" states that:

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[36] Carl Smith, "Pesticide Exports from US ports, 1997-2000", vol. 7 *International Journal of Occupational and Environmental Health* (2001), 266-274.

[37] Ibid

"Analysis of U.S. Custom Service records for 2001-2003 indicates that nearly 1.7 billion pounds of pesticide products were exported from U.S. ports, a rate >32 tons/hour. Exports included >27 million pounds of pesticides whose use is forbidden in the United States. WHO Class 1a and 1b pesticides were exported at an average rate of >16 tons/day. Pesticide exports included >500,000 pounds of known or suspected carcinogens, with most going to developing countries; pesticides associated with endocrine disruption were exported at an average rate of >100 tons/day."[38]

The United Nations Declaration on the Rights of Indigenous Peoples as well as CERD General Recommendation XXIII requires the Free Prior Informed Consent by Indigenous Peoples who are exposed and detrimentally affected by exposure these highly toxic substances. The IITC has received extensive documentation from many such communities, in particular in Mexico and Guatemala, affirming that this is, in fact, not the case.

During her visit to the United States Mme. Vesely also met with government officials, reporting that "US officials told me that pesticides banned in the United States but exported cannot be regulated if there is a demand overseas, because of free-trade agreements."[39] The Rapporteur, Ms. Vesely justifiably found that the US policy is based upon, among other unacceptable premises, "... on an untenable premise that pesticides deemed unacceptable for the residents and environment of the United States are somehow acceptable in other countries. Clearly, countries such as the US often choose to offer their citizens a higher degree of protection than they insure for others in other countries and fail to monitor the human rights impacts of this practice by US corporations. One of the most common reasons for doing so is to acknowledge different levels of economic and social development among States. However this disparity is difficult to justify in respect of pesticides found to be so dangerous that they are banned from sale or use." [40]

As one farm worker who is a member of a Yaqui community in Mexico expressed in a meeting with the US's Environmental Protection Agency in the San Diego, California USA in 2001, commenting on the US's policy of banning pesticides for use in the US but still permitting their production for export, "Why are the lives of our Yaqui children in Mexico worth less than the lives of your children here in the US?"

There are a great many difficulties in tracing the use abroad of banned pesticides manufactured in the US. In Mexico and Guatemala, for example, there is no labeling of origin or content of pesticides. They are given names like "Veloz" (speedy), or "Ninja" in Guatemala. As the Special Rapporteur pointed out, "Even if something is marked 'poison' it tends to be shipped in large amounts, and then transferred to smaller containers without proper labeling for local sale and use. And the people actually using the products often cannot read anyway."[41]

In an investigation conducted by the International Indian Treaty Council in Sonora, Mexico, on Indigenous Yaqui ancestral lands received testimony from an indigenous agricultural worker who was told by the agricultural companies involved in aerial spraying to bury large pesticide canisters because they knew that the pesticide was banned. As stated above, many Yaqui family members, farm workers and midwives and mothers have presented testimonies about increasing levels of birth defects, cancers and deaths due to toxic exposure from

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[38] Pesticide Exports from U.S. Ports, 2001–2003 CARL SMITH, KATHLEEN KERR, MD, AVA SADRIPOUR, ESQ. International Journal of Occupational and Environmental Health ,VOL 14/NO 3, JUL/SEP 2008

[39] U.N. Deems Export of Banned Pesticides Immoral, U.S. Newswire, 202-347-2770/ 12/17 16:09

[40] Special Rapporteur on Adverse effects of the illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights, Ms. Fatma-Zohra Ouhachi-Vesely , Mission to the United States, UN Doc. E/CN.4/2003/56/Add.1.

[41] U.N. Deems Export of Banned Pesticides Immoral, U.S. Newswire, 202-347-2770/ 12/17 16:09,

indiscriminate aerial spraying, storage and use of highly toxic pesticides in communities and unsafe working conditions with no safely precautions or information about the dangers provided.

The export of banned and dangerous toxics from the "developed/industrialized" to the "developing" countries continues, with impacted Indigenous and other communities at the bottom end uniformed, sickened and killed. It should be noted with concern that the production and export of banned pesticides by the US is permitted under federal law (the Federal Insecticide, Fungicide, and Rodenticide Act, FIFRA) as well as under the International Rotterdam Convention, as long as the receiving country is informed of this status. Unfortunately no one informs the Indigenous communities "on the ground" who suffer grave human rights consequences.

VII. Holding States and Corporations Accountable

"The agrochemical industry is valued at over $42 billion and operates with impunity while, according to the World Bank over 355,000 people die from pesticide poisoning every year."[42]

On December 3rd 2011, 27 years later after the Bhopal disaster caused by the release of toxic pesticides from the Union Carbide factory in Bhopal India killed over 25,000 people, the **Permanent Peoples Tribunal** convened in Bangalore India with an international panel of 5 judges. Based on testimonies and statements about health and other human rights violations caused by pesticides from communities around the world, including Indigenous communities from Alaska, Mexico, Peru and elsewhere, the Tribunal delivered a scathing indictment of the pesticide industry. It focused on the "Big 6" agrochemical giants, the Multi-national Corporations (MNC's) Monsanto, Syngenta, Dow, DuPont, Bayer, and BASF (Dow bought Union Carbide in 2001).

Blame for the agrochemical industry's human rights abuses was also assigned to the three States where these corporations are headquartered—the United States, Switzerland, and Germany. As stated in the PPT's findings, these countries *"failed to comply with their internationally accepted responsibility to promote and protect human rights, especially of vulnerable populations."*

Other findings included:

"The Tribunal makes the following declaration of responsibility for the six indicted MNCs and three Governments in particular and further also declares the responsibilities of all States, international organizations, UN Specialist Agencies, all other institutions of global governance."

"AS CONCERNS THE INDICTED SIX CORPORATIONS (BASF, BAYER, DOW CHEMICAL, DUPONT, MONSANTO

-- The Tribunal finds on all evidence presented before it the six MNCs responsible for gross, widespread and systematic violations of the right to health and life, economic, social and cultural rights, as well as of civil and political rights, and women and children's' rights.

-- The Tribunal also finds these corporations responsible for their systematic conduct resulting in violation of indigenous peoples' human rights and other entitlements.

AS CONCERNS THE THREE SPECIFICALLY INDICTED STATES:

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[42] Pesticides Action Network North America, January 10th, 2012

"The United States of America (USA), the Swiss Confederation (Switzerland) and the Federal Republic of Germany (Germany) have failed to comply with their internationally accepted responsibility to promote and protect human rights, especially of vulnerable populations and their specific customary and treaty obligations in the sphere of environment protection..." [43]

The Permanent Peoples tribunal was convened by Non-Governmental organizations and its findings are considered non-binding upon the States and corporations in question. However similar conclusions were reached by a legally binding UN Treaty Monitoring body process, the UN Committee on the Elimination of Racial Discrimination in its Concluding Observations for the periodic review of the United States which took place in February 2008. The International Indian Treaty Council coordinated a joint Indigenous Peoples shadow report which includes testimony and documentation addressing the human rights impact of the production and export of toxic pesticides, including tons of pesticides banned for use in the US due to amble proof of severe health impacts including cancers and birth defects.

In response, the CERD issued the following recommendation to the US, following up on a similar recommendation to the Canadian government during its periodic review the previous year (March 2007):

"30. The Committee notes with concern the reports of adverse effects of economic activities connected with the exploitation of natural resources in countries outside the United States by transnational corporations registered in the State party on the right to land, health, living environment and the way of life of indigenous peoples living in these regions.

> **In light of article 2, paragraph 1 (d), and 5 (e) of the Convention and of its general recommendation no. 23 (1997) on the rights of indigenous peoples, the Committee encourages the State party to take appropriate legislative or administrative measures to prevent acts of transnational corporations registered in the State party which negatively impact on the enjoyment of rights of indigenous peoples in territories outside the United States. In particular, the Committee recommends that the State party explore ways to hold transnational corporations registered in the United States accountable. The Committee requests the State party to include in its next periodic report information on the effects of activities of transnational corporations registered in the United States on indigenous peoples abroad and on any measures taken in this regard."** [44]

The IITC Shadow report submitted to the CERD for the US review specifically documented the export of banned pesticides by the US to Mexico. The issue of Mexico's continuing IMPORT and use of dangerous and banned pesticides and their use in agricultural area of Mexico as impacting Indigenous communities (Yaqui and Huichol) was also submitted by IITC and addressed in the recommendations of the UPR review of Mexico by the UN Human Rights Council in September 2008.

Clearly, United States policies and laws as well as International Conventions allowing banned pesticides to be manufactured and exported by US based corporations are immoral and wrong, and violate the human rights of the impacted Indigenous communities where they are applied without their free, prior and informed consent,

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[43] DRAFT FINDINGS AND RECOMMENDATIONS, PERMANENT PEOPLE'S TRIBUNAL ON AGROCHEMICAL TRANSNATIONAL CORPORATIONS, Bangalore, India, 3-6 December 2011

[44] Concluding Observations of the UN Committee on the Elimination of Racial Discrimination, United States of America [CERD/C/USA/CO/6 May 8th 2008]

and also where they travel as a result of global transport. As Mme. Ouachi-Veseley stated in her report to the Commission of Human Rights, "[i]n particular, the right to life, the right to health, the right to found a family, the right to a private life are most commonly violated by the effects of pesticide use."[45]

The National Congress of American Indians also affirmed the human rights impacts on Indigenous Peoples of the export of banned pesticides by the United States and US based corporations in a resolution adopted by consensus at its annual conference in November 2007:

"WHEREAS, the production, export and unmonitored use of banned, prohibited and dangerous toxics including pesticides violates a range of human rights for Indigenous Peoples around the world including the Rights of the Child, Right to Health, Food Security, Development Life, Physical Integrity, Free Prior Informed Consent, Cultural Rights, the Right to be Free from all Forms of Racism and Racial Discrimination and the Right of All Peoples not to be Deprived of Their Own Means of Subsistence." [46]

This NCAI resolution also called for a formal Hearing by the United States Senate to further address this matter.

VIII. Advances and Challenges in International Environmental Standards Regarding Environmental Toxics: An opportunity for the UNPFII to exert pressure in support of Indigenous Women and communities' voices, rights and participation

A. The Stockholm Convention on Persistent Organic Pollutants

The Stockholm Convention was adopted by States from around the world in 2001 and entered into force in 2004 when 50 States had ratified it. Currently, the Convention includes 176 State parties that agree to work together toward global elimination of the world's most dangerous chemicals. The Stockholm Convention is a living Treaty that includes provisions to add new chemicals that meet scientific criteria for persistence, long-range transport, adverse effects, and bioaccumulation. In addition to the initial list of twelve chemicals including nine pesticides, which were included in the Convention, the "dirty dozen" (aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, toxaphene, hexachlorobenzene, PCBs, dioxins, and furans), the Parties agreed to add 9 new substances in 2009 and an additional pesticide, endosulfan, in 2011. The scientific committee of the Stockholm Convention, the POPs Review Committee (POPRC), works to determine whether chemicals that are nominated for inclusion under the Convention meet the scientific criteria and warrant global action.

The Preamble of the Convention recognizes the serious health concerns including "*particular impacts upon women and children and, through them, upon future generations;*" and that "*Arctic ecosystems and indigenous communities are particularly at risk because of the biomagnification of persistent organic pollutants and that contamination of their traditional foods is a public health issue.*" Because exposure to even low levels of POPs can harm human health and development, the Convention is strongly based on the Precautionary Principle.

However major challenges remain. The chemical industry remains a strong political force in this process, exerting constant and well-funded pressure on States to avoid or delay adding new chemicals. Despite the recognition of impacts on health of women, children and Indigenous Peoples in the Convention's preamble,

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[45] Special Rapporteur on Adverse effects of the illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights, Ms. Fatma-Zohra Ouhachi-Vesely , Mission to the United States, UN Doc. E/CN.4/2003/56/Add.1, para 39.

[46] National Congress of American Indians Resolution #DEN-07-050, "Impacts on the Contamination of Subsistence Food Resources, Health, Human Rights and Development of Tribes and Indigenous Communities

Human rights including the Rights of Indigenous Peoples most often take a back seat to industry concerns or are not addressed at all in the States' deliberations. Also, there is no formal mechanism for the participation of Indigenous Peoples in the implementation of the Convention. This continues to be a key demand of Indigenous Peoples participating in this process, along with unqualified recognition of human rights.

In the closing statement of the Global Indigenous Peoples Caucus at the 2011 4th Conference of the Parties to the Stockholm Convention (April 6 – 10, 2011, Geneva), these ongoing concerns were emphasized:

"For Indigenous Peoples, the impacts of the production, export and use of dangerous toxics violates and threaten human rights protected under International Laws, norms and Conventions, including the UN Declaration on the Rights of Indigenous Peoples. Reproductive health and justice, which includes our right to bear and raise healthy children, also continue to be undermined for Indigenous Peoples living at the source of application as well as in Arctic communities, far from the original point of exposure. Indigenous Peoples reiterate our call for formal participation in this process so that we are able to work more effectively with the State parties for the realization of the Stockholm Convention's goals." [47]

B. The Rotterdam Convention

The **Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade** is an important tool to protect human health and the environment by controlling trade in hazardous chemicals and pesticides that meet the requirements of the Convention. However, as with the Stockholm Convention, there is no formal mechanism for the participation of Indigenous Peoples or to address the human rights abuses caused by the export of hazardous substances when they are used in the lands and territories of Indigenous Peoples without their free prior and consent.

In fact, the Rotterdam Convention specifically allows for the export of pesticides and other chemicals that have been banned for use in the producing State as long as the receiving (importing) State is properly notified. There is no provision to ensure that Indigenous Peoples are afforded the right of Free Prior Informed Consent as stipulated by Article 29 of the UN Declaration of the Rights of Indigenous Peoples, CERD General Recommendations XXIII and other human rights standards. Also, there is no formal process for consideration by State parties of the widespread, brutal Human Rights impacts caused by this practice as have been documented in this paper, putting this UN Convention directly at odds with a number of existing UN human rights standards.

C. Agenda 21 and Rio + 20, the World Conference on Sustainable Development, June 2012

In 1972, the United Nations held the World Conference on the Human Environment in Stockholm, Sweden. The resultant Declaration of the United Nations Conference on the Human Environment was the first pronouncement by the international community on the world's environment. Calling for an environment of a quality that permits a life of dignity and well-being, the Conference established the United Nations Environmental Programme (UNEP).

The Stockholm Declaration addressed the issue of the environment and development but left it up to the States to deal with the growing problem of environmental degradation as a result of development throughout the

[47] United Nations Stockholm Convention on Persistent Organic Pollutants , 5th Conference of the Parties, April 25th 29th, 2011, Geneva Switzerland , Global Indigenous Peoples Caucus Closing Statement , Presented by Monique Sonoquie, International Indian Treaty Council I

world. The Stockholm Declaration did recognize the connection between human right and the environment, but in its formulation of a right to the environment, it framed this right as an individual right even though the right to the environment, like the rights of self-determination, development, and peace, are all so-called "third generation" collective rights of peoples.

The World Conference on the Environment and Development (Rio) was held twenty years later, in 1992, in Rio de Janeiro, Brazil, leading to an explosion of international activity, including development of international conventions addressing the environment.

Principle 22 of the Rio Declaration recognizes that:

Indigenous Peoples and their communities... have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of their sustainable development.

Indigenous Peoples are addressed in Agenda 21, Chapter 26 which calls for a "full partnership" with Indigenous Peoples in the accomplishment of the goals of Agenda 21. Chapter 26.3 calls upon the States to "strengthen and facilitate" Indigenous Peoples' participation in their own development and in external development activities that may affect them.

Another important advance, which was also included in the Stockholm Convention, was the key concept of the "Precautionary Principle" placing the burden of proof on the corporation or State that chemicals are safe for human and environmental health BEFORE they are produced, used or released. This formula stands as a rights-based alternative to current practices supported by governmental regulatory models such as "risk assessment", "safe management", and "acceptable risk" which allow the continued use and proliferation of chemicals known to be dangerous if their impacts can be "controlled" or limited to low or "acceptable" rates of illness and death.

Agenda 21 Section I, Chapter 6: "Protecting & Promoting Human Health, E. Reducing health risks from environmental pollution and hazards" recognizes that pesticides pose a serious threat to human health. Although Agenda 21 also endorses partnership with Indigenous Peoples, the Precautionary Principle and Free Prior and Informed Consent, in Chapter 19 and 20 it endorses another model altogether regarding the Management of Chemicals and Hazardous Wastes.

In Chapter 19 it states that "the principle of the right of the community and of workers to know those risks [of chemicals] should be recognized. However, the right to know the identity of hazardous ingredients should be balanced with industry's right to protect confidential business information". [48] In other words, it proposes that the fundamental right of exposed communities to FPIC be "balanced" with corporate business interests. Chapter 19 paragraph 52 f) also allows for the "export of chemicals that are banned, severely restricted, withdrawn or not approved for health or environmental reasons, except when such export has received prior written consent from the importing country"[49] This provides the basis for similar provisions in the Rotterdam Convention.

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[48] Agenda 21, Chapter 19 paragraph 8

[49] Agenda 21 Chapter 19, "Environmentally Sound Management Of Toxic Chemicals, Including Prevention Of Illegal International Traffic In Toxic And Dangerous Products", paragraph 52) f

Indigenous Peoples have challenged these provisions of Agenda 21, and the health and human rights threats they pose, in their statements in preparation for the upcoming World Conference on Indigenous Peoples, "Rio + 20" in June 2012, based on the minimum standard in the UN Declaration on the Rights of Indigenous Peoples, in particular Article 29, in this regard. Indigenous Peoples are optimistic regarding the inclusion of the UN Declaration on the Rights of Indigenous Peoples in the "Zero-draft outcome document" for Rio+20 as drafted by the United Nations Secretary General[50] and encourage the UNPFII to urge that this reference remain or be strengthened in the final outcome document.

D. The United Nations Legally-Binding Instrument on Mercury: A Current International Standard-setting opportunity to incorporate the right to health for Indigenous Women, Girls and Future Generations

Mercury is highly toxic. Some levels of inorganic mercury are found in nature. Metallic mercury is used in batteries, thermometers and dental amalgams. The largest amounts of mercury are released into the environment by coal-fired power plants, paper milling, mining and other industrial processes. The most toxic form is "methylated mercury", created when mercury is exposed to decaying plant matter, for example in marshes or lakes created by dams. This form of organic mercury "bio-accumulates" or builds up in the cells of fish and other animals, moving up the food chain in higher and higher concentrations. Humans are most commonly exposed by eating contaminated fish. Mercury contaminates our air, water, lands and traditional foods, in particular the fish upon which so many Indigenous communities depend, producing serious health impacts for persons of all ages. But the gravest danger is to the health and development of our children. Exposure to mercury impairs the neurological development of infants, babies and children, including those still in those mothers' wombs.

The Second Ministerial Meeting of the Arctic Council met in Barrow, Alaska in 2000. Participants were concerned about effects to human health and the environment of mercury and its impacts globally, particularly the Arctic. The Arctic Council asked UNEP to complete a global assessment of mercury to provide information for next steps. UNEP released "Global Mercury Assessment" report in 2002. In summary the report acknowledged that mercury, due to its long range transport, its ability to bioaccumulate in the environment, its persistence and its harm to human health and the environment, is of global concern. In 2009, UNEP agreed to negotiate a global, legally binding mercury-control Treaty. The Treaty was to be drafted in five "Intergovernmental Negotiating Committee" or INC meetings to begin in 2010 and to be completed in early 2013. The first three took place in Japan, Sweden and Kenya. The next session, INC 4, is scheduled in Uruguay in June 2012.

About two-thirds of the mercury released in the environment can be attributed to human activity. The largest source of global mercury pollution comes from burning fossil fuels, primarily coal. The second largest source appears to be artisanal and small scale gold mining, as well as continued run offs from abandoned gold mines. Mercury can also be found in a number of products (batteries, dental fillings, cosmetics etc.)

Mercury contamination is bound to the protein tissue rather than the fatty tissue, unlike contamination from POPs. Although mercury can travel far from the source, contamination is of particular concern for waterways that are near coal-fired power plants, waste dumps, pulp and paper mills, cement kilns, gold mines, sites of fossil fuel extraction for oil, coal and tar sands and chlor-alkali facilities.

[50] "The Future We Want", Zero-Draft text for Rio+20, January 10, 2012, para. 21

Abandoned mercury and gold mines in areas such as California, South Dakota and Alaska continue to emit mercury. Current gold mining and processing taking place in many countries in Latin America, Asia and Africa as well as North America produce new mercury contamination. For example, in 2003, gold mining and processing at Placer Dome's Cortez mine and Barrick's Gold strike in Northern Nevada released 2435 pounds of mercury into the environment.

Methylmercury is known to affect the neurological system of both the developing as well as the adult brain. Prenatal exposure can cause irreversible damage to the developing nervous system resulting in reduced IQ, abnormal muscle tone and losses in motor function and attention. Heart disease and high blood pressure have also been associated with methylmercury consumption as well as damaged immune systems kidney damage and reproductive effects.

As a mother accumulates mercury in her body she can then pass this pollution onto her unborn child. Babies can be exposed by consuming breast milk with high levels of mercury. Indigenous Peoples that rely primarily on fish for their physical, economic and cultural survival are at highest risk. In 2000, the National Academy of Sciences estimated that 60,000 babies born each year in the US are at risk for learning disabilities and other kinds of neurological damage due to mercury contamination. The Academy concluded that there is "little or no margin of safety" for consumption of mercury by women of childbearing age. In 2004, the US Environmental Protection Agency estimated that over ten times that many babies may actually be at risk. Umbilical cord blood has been found to contain almost twice the level of mercury than that found in the mothers' blood, further increasing the risks to unborn generations.

Mercury is an international problem affecting Indigenous Peoples around the world. In British Colombia Canada, the dam holding Teck Cominco's mercury mine tailings burst in 2004, releasing large amounts of mercury into water used for traditional subsistence fishing. In Northern Ontario, paper mill emissions containing mercury had devastating effects on the health and subsistence fishing of the Grassy Narrows First Nation Peoples. The UN Environmental Programme estimates that over one million people in Latin America, including many women and children, are currently involved in small-scale mining activities in which mercury is used.

Indigenous Peoples participating in the INC sessions have proposed including references to Indigenous Peoples in several places in the current Treaty negotiating text, in addition to the current language recognizing "vulnerable populations" as well as a new operative article addressing specific impacts for Indigenous Peoples. The Indigenous Peoples' Global Caucus at INC 3 in Nairobi Kenya (31 October – 4 November 2011) also strongly supported the inclusion of a new operative paragraph on "Health Aspects" currently proposed as Article 20 bis by the GRULAC (Latin American) countries . Their statement to the INC3 plenary linked health impacts to cultural concerns and also called for better data regarding specific impacts on Indigenous women and children.

"Harms from all mercury releases and a need for more and better data on impacts to Indigenous Peoples and vulnerable populations, such as pregnant women, the developing fetus, children, and workers, need to be better tracked and communicated. For us, these harms are linked to traditional foods and diets, and cultural values. This expanded definition of vulnerability includes other factors of poverty, poor nutrition, reproductive concerns of our women, learning disabilities of our children, and the retention of our languages."[51]

Indigenous Women have taken a strong stand regarding the continued release of mercury into the international environment, the lack of political will by States to conduct effective cleanup of lands and waterways that are

[51] Indigenous Peoples Global Caucus intervention on Health Aspects, INC 3, Nairobi Kenya, November 3rd, 2011

contaminated and the need for a strong international instrument on mercury guided by health and human rights concerns rather than priorities set by industry.

The "Indigenous Mothers against Mercury Open Letter to National, State and regional Policy- Makers", was finalized on May 18th 2011 and has received over 1000 signatures from Indigenous mothers around the world. It reiterates the health impacts of mercury as a neurotoxin which most severely damages the developing fetus. It reminds policy makers that this represents *"a violation of our human rights to health, cultural practices, Treaty rights, subsistence, Rights of the Child, and our Right to Free Prior and Informed Consent as recognized by the UN Declaration on the Rights of Indigenous Peoples and other international human rights instruments, norms and standards."*[52]

Regarding the international standard setting process currently underway, the letter stresses the need for full and effective participation of Indigenous Peoples, including women, and for a strong and effective outcome. The letter concludes with the following 3 proposals to policy-makers:

As policy-makers, we call upon you to take a strong stand for the development of the Global Mercury Treaty, and through policies on the national and international levels that will:

1. *Halt emissions of mercury into the environment from all sources, including the burning of coal, current and past gold mines and production and disposal of medical products that use mercury*
2. *Commit to thorough cleanup of sources of current contamination including legacy mine sites, working in full collaboration with Indigenous Peoples when their homelands, waters, sacred areas and subsistence foods have been impacted.*
3. *Ensure the full, formal and effective participation of Indigenous Peoples, including Indigenous women, in the development of a Global Mercury Treaty and in measures to implement its provisions on the national, regional and local levels."*[53]

IX. RECOMMENDATIONS

In light of the information and concerns presented in this paper, we suggest that the following recommendations be included in the report of this Expert Group Meeting of the UN Permanent Forum on Indigenous Issues, and be considered for inclusion in the final report of the UNPFII 11th Session in May 2012. These include support for relevant recommendations that have already emerged from a number of consensus documents and processes agreed to by Indigenous Peoples in response to the concerns raised in this paper:

1. This EGM calls upon States to eliminate the production and use of pesticides, industrial chemicals and toxic byproducts that disrupt the endocrine system, affect learning and neurological development, cause cancers and other illnesses, undermine women's and maternal health, contaminate lands, waters and traditional food sources, cause harm to reproduction and affect any aspect of the health and development of our future generations. This EGM also calls upon States to take responsibility for

[52] "Indigenous Mothers against Mercury Open Letter to National, State and regional Policy- Makers", International Indian Treaty Council and the Indigenous Women's Environmental Justice and Reproductive Health Initiative
May 18th 2011

[53] "INDIGENOUS MOTHERS AGAINST MERCURY OPEN LETTER TO NATIONAL, STATE AND REGIONAL POLICY-MAKERS", MAY 8TH, 2012, Submitted by the International Indian Treaty Council and the Indigenous Women's Environmental Justice and Reproductive Health Initiative, May 8th 2011

effective and immediate clean-up of contaminated sites created by activities which it either permitted or approved, in collaboration and coordination with the impacted Indigenous Peoples.

2. The EGM calls upon States to report on their progress at the 12th session on the UNPFII towards full and effective implementation of Article 29 of the UN Declaration on the Rights of Indigenous Peoples, in particular paragraphs 2 and 3 regarding their obligation to ensure free prior and informed consent regarding hazardous materials and to implement programs to restore the health of impacted Peoples in conjunction with these Peoples, ensuring the participation of Indigenous women.

3. We recommend that the "precautionary approach" (principle 15 of the Rio Declaration on Environment and Development) be reaffirmed at Rio + 20, together with a renewed commitment by States to eliminate the production, use and dumping of chemicals that are toxic, persistent and hazardous that pose dire threats to the health of impacted communities and ecosystems, and most of all violate human rights; including the rights of Indigenous Peoples to free, prior and informed consent as stated in Article 29 of the UN Declaration on the Rights of Indigenous Peoples. We call upon States to make a commitment to utilize and implement the Precautionary Principle as an alternative to the models of "risk assessment" and "management" of toxic chemicals presented in sections 19 and 20 of Agenda 21. In addition, we recommend that agricultural methods and practices used traditionally by Indigenous communities based on safe alternatives to toxic pesticides be recognized and supported.[54]

4. The EGM calls upon the UNPFII to urge States and the UN Secretary General to ensure that the reference recognizing "the importance of the UN Declaration on the Rights of Indigenous Peoples in the global, regional and national implementation of sustainable development strategies"[55] be maintained and strengthened in the final Rio + 20 Outcome Document.

5. We recommended that the practice of exporting banned pesticides and other chemicals by the USA and other States cease immediately. We also recommend that the provisions within UN Conventions and national laws which permit this practice without the free, prior and informed consent of the Indigenous Peoples and communities who may be impacted at the source of exposure as well as through global transport, be reviewed immediately and revised. [56]

6. The EGM calls upon the United Nations, its agencies and members to ensure that Human Rights principles and standards must be mainstreamed in all international standard setting processes addressing environment and development, including, interalia, including the Rights to Health, Free Prior Informed Consent, Food and Subsistence, Treaty Rights, Rights of Women and Children and Right to Life, and all rights affirmed in the United Nations Declaration on the Rights of Indigenous Peoples.

7. The EGM recommends that all relevant national and international bodies and processes respect the traditional knowledge of Indigenous women regarding sustainable development, environmental protection, cultural practices, food production and health and take action to strengthen their roles as participants, leaders, and experts in all levels of discussions and decision-making on these matters.

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[54] Conclusions and recommendations, from the "Rio + 20: Indigenous Peoples in Route to the Rio +20 Conference" from the Global Preparatory Meeting of Indigenous Peoples on Rio +20 and Kari-Oca 2, August 22 - 24, 2011, Manaus, Amazonia, Brazil"

[55] "The Future We Want", Zero-Draft text for Rio+20, January 10, 2012, para. 2121

[56] Conclusions and recommendations, from the "Rio + 20: Indigenous Peoples in Route to the Rio +20 Conference" from the Global Preparatory Meeting of Indigenous Peoples on Rio +20 and Kari-Oca 2, August 22 - 24, 2011, Manaus, Amazonia, Brazil"

8. The UN Permanent Forum on Indigenous Issues, the UN Special Rapporteur on the Situation of Human Rights and Fundamental Freedoms of Indigenous Peoples and other UN bodies and mechanisms addressing Indigenous Peoples' rights are requested to focus attention and collect information from Indigenous Peoples, in particular Indigenous women, on the links between environmental contamination and reproductive health and justice, for the purpose of recommending effective solutions and remedies at the international level. [57]

9. States and their Territories must be accountable for the implementation, with the full and effective participation of Indigenous Peoples of all international Treaties, Standards and Conventions entered into including the Nation to Nation Treaties with Indigenous Peoples and Nations. Processes and mechanisms to ensure accountability must be put in place, with the full participation of affected Indigenous Peoples.[58]

10. Women, children and families who have suffered the impacts of toxic contaminants require special care. States and corporations which have allowed contamination to damage our communities must be held accountable to cover the costs and ensure that adequate care and services are provided, with the full participation and collaboration of the affected Indigenous Peoples.[59]

11. We encourage the development and dissemination of educational materials explaining the links between environmental toxics and reproductive health and justice. We also encourage the development of training programs to inform Indigenous women of opportunities for their participation locally, nationally and internationally, and to build their capacity as strong voices for their families and Nations. [60]

12. Regarding the current process being carried out by UNEP for the development of a legally-binding International Treaty on Mercury, we support the recommendations proposed by the "Indigenous Mothers Against Mercury" open letter, representing the voices of over 1000 Indigenous women worldwide regarding the development of strong language to: *halt emissions of mercury into the environment from all sources, including the burning of coal, current and past gold mines and production and disposal of medical products that use mercury; to commit to thorough cleanup of sources of current contamination including legacy mine sites, working in full collaboration with Indigenous Peoples when their homelands, waters, sacred areas and subsistence foods have been impacted; to Ensure the full, formal and effective participation of Indigenous Peoples, including Indigenous women, in the development of a Global Mercury Treaty and in measures to implement its provisions on the national, regional and local levels."*[61]

    Further, we fully support the proposal of the Global Indigenous Peoples Caucus made at INC3 to include an operative paragraph addressing the health impacts, aspects and concerns regarding mercury in the context of human rights and the health of Indigenous women, children and unborn generations.

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[57] Declaration for Health, Life and Defense of Our Land, Rights and Future Generations", 1st International Indigenous Women's Environmental and Reproductive Health Symposium, June 30 – July 1, 2010, UN Permanent Forum's 10th session Conference Room Paper [E/C.19/2011/CRP. 9], "Recommendations to the United Nations System and International bodies"

[58] Ibid, "Recommendations to States and their Territories"

[59] Ibid, "Recommendations to States and their Territories"

[60] Ibid, "Recommendations to Indigenous Peoples, Communities, Nations, Tribal Governments and Organizations"

[61] "INDIGENOUS MOTHERS AGAINST MERCURY OPEN LETTER TO NATIONAL, STATE AND REGIONAL POLICY-MAKERS", MAY 8TH, 2012, Submitted by the International Indian Treaty Council and the Indigenous Women's Environmental Justice and Reproductive Health Initiative, May 8th 2011

13. We call for disaggregation of data and studies carried out with the consent and full participation of Indigenous women and communities, to provide better information about specific impacts of environmental toxics, including pesticides, mercury, mining runoffs, uranium mining and processing, waste dumping, and Persistent Organic Pollutants, on the health of Indigenous women, girls and children.

14. States, international financial institutions, United Nations programmes and actions, as well as private investors and corporations must do due diligence and fully disclose to all Indigenous Peoples, Nations, tribes, and communities, their activities and potential risks. Peoples and individuals who may be affected by or exposed to pesticides, mining, dumping, incineration and other forms of toxic chemical production, the complete known or suspected effects of the chemicals in question, the location and names of corporations producing them, any current or prior legal sanctions or cases filed against them, the Indigenous Peoples in the same or other countries who have experiences with the given process or corporation, so that informed decisions can be made as part of Indigenous Peoples right to free, prior and informed consent.[62]

15. Based on paragraph 33 of the report of the UN Permanent Forum on Indigenous Issues 10th session affirming that "the Permanent Forum notes the intention of the International Indigenous Women's Environmental Justice and Reproductive Health Initiative to organize an expert group meeting on the environment and indigenous women's reproductive health and requests that the organizers invite members of the Permanent Forum to participate in the meeting..." [63] that this EGM requests the Symposium, scheduled for April 2012 in Alaska, to collect additional data, testimonies and case studies to submit to the UNPFII at its 11th session documenting environmental violence against Indigenous women.

16. We affirm that the rights and relationships affirmed in the legally-binding Nation-to-Nation Treaties between States and Indigenous Peoples, including self-determination, free prior and informed consent, partnership, mutual respect, full and effective participation in decision-making and the "Treaty Right to Health" are fundamental for developing solutions to critical problems affecting Indigenous Peoples, including all forms of violence against Indigenous Women.

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[62] From "Contributions to the UN Secretary General for preparation of the Rio + 20 "Zero-draft outcome document", submitted by the International Indian Treaty Council (IITC), Dene Nation (Northwest Territories, Canada), Nishnawbe Aski Nation (Thunder Bay, Ontario, Canada), Indigenous Environmental Network (IEN), Indigenous Peoples Council on Biocolonialism (IPCB), Indigenous World Association (IWA), Alaska Community Acton on Toxics (ACAT), and Ms. Mirna Cunningham, President, UN Permanent Forum on Indigenous Issues and CADPI (Nicaragua), October 31, 2011

[63] United Nations Permanent Forum on Indigenous Issues Report on the tenth session (16-27 May 2011), Economic and Social Council Official Records, 2011, [E/2011/43-E/C.19/2011/14]

Andrea Carmen and Vi Waghiyi wish to thank:
Pamela K. Miller, Executive Director, and Karla L. Brollier, Environmental Health and Justice Organizer, Alaska Community Action on Toxics; Monique Sonoquie, California Traditional Basket Weavers; Jaquelynn Warledo, IITC Environmental Health Program Coordinator; Dr. Elizabeth Guillette; Tekatsitsiakwa Katsi Cook; the participants in the 1st International Indigenous Women's Environmental and Reproductive Health Symposium; the community members of Savoonga and St. Lawrence Island, Alaska; Francisco "Paco" Villegas Paredes, Jittoa Bat-Natika Weria, traditional curanderas, midwives and traditional authorities of the Yaqui Pueblos of Rio Yaqui, Sonora Mexico; Kathryn Gilje, Pesticides Action Network North America; and Sherri Norris and Angela Berry-Phillip, California Indian Environmental Alliance for their invaluable contributions to this paper.

We also wish to thank the UNPFII for its interest and attention to this critical issue in the context of the theme "Violence against Indigenous Women". This context provides an innovative approach for consideration of the urgent issues presented in this paper, bridging several areas of the UNPFII's mandate and priority focus areas, including human rights, environment, health, development, indicators of well-being and the specific situations affecting Indigenous women and girls.

Participants in the 1st International Indigenous Women's Environmental and Reproductive Health Symposium June 30 – July 1, 2010

REPORT OF THE INTERNATIONAL INDIGENOUS WOMEN'S ENVIRONMENTAL AND REPRODUCTIVE HEALTH SYMPOSIUM

APRIL 27TH – 29TH 2012, CHICKALOON NATIVE VILLAGE, ALASKA

Co-hosted by the International Indian Treaty Council (IITC) and Indigenous Women's Initiative for Environmental and Reproductive Health, Alaska Community Action on Toxics (ACAT), Chickaloon Native Village and International Indigenous Women's Forum (FIMI).

Submitted to the 11th Session of the United Nations Permanent Forum on Indigenous Issues as a Conference Room Paper by the International Indian Treaty Council, Indigenous Non-governmental Organization in General Consultative Status to the United Nations Economic and Social Council
May 5th, 2012

THE 2nd DECLARATION FOR HEALTH, LIFE AND DEFENSE OF OUR LANDS, RIGHTS AND FUTURE GENERATIONS

We, Indigenous women from North America, Latin America, the Arctic and the Pacific, gathered April 27th - 29th, 2012 at the ***2nd INTERNATIONAL INDIGENOUS WOMEN'S ENVIRONMENTAL AND REPRODUCTIVE HEALTH SYMPOSIUM***, at the Yah Ne Dah Ah Tribal School, Chickaloon Native Village in Alaska.

We express our heartfelt thanks to the Native Village of Chickaloon and the Ya Ne Dah Ah Tribal School for their warm hospitality. We heard their stories, songs and language and learned about the devastating environmental, cultural, and social impacts of coal mining by the US Navy in Chickaloon traditional lands from 1914 to 1922. We stand in strong solidarity with Chickaloon Village's current fight to prevent new coal mining in their traditional lands which would drastically impact the health of the children, the environment and Community as a whole.

We thank the UN Permanent Forum on Indigenous Issues for recognizing the 1st International Indigenous Women's Symposium on Environmental and Reproductive Health at its 10th session, and receiving the report of the 2nd Symposium at this session. We also thank the UN Special Rapporteur on the Rights of Indigenous Peoples James Anaya for visiting the 2nd Symposium in conjunction with his US Country Visit on April 28th, 2012, and for his commitment to include the concerns expressed by participants his report to the UN Human Rights Council.

We have shared our stories and the experiences of our Peoples. We express our collective outrage that current federal and international laws permit industry, military and all levels of government to knowingly produce, release, store, transport, export, import and dump hazardous chemicals and radioactive materials, and expand contaminating activities such as fossil fuel development, hydraulic fracturing, uranium mining and milling, introduction of genetically modified seeds and animals, bio-fuel production and high-pesticide agriculture.

As Indigenous mothers and grandmothers, youth and elders, traditional healers, tribal leaders, human rights and environmental activists, we express our profound concern for the life and health of our communities, children, ecosystems and Mother Earth due to the proliferation of environmental toxins.

In response, we affirm, and reaffirm, the following:

1) We steadfastly reaffirm the 1st "***DECLARATION FOR HEALTH, LIFE AND DEFENSE OF OUR LANDS, RIGHTS AND FUTURE GENERATIONS"*** adopted by consensus at the International Indigenous Women's Symposium in Alamo, California on July 1st, 2010.

2) We acknowledge the sacredness of the life-giving force of our birthing places. Many are under attack from toxic contamination, extractive industries and other industrial processes. These include salmon spawning, caribou and moose birthing places, as well as women's wombs.

3) Our health and well-being, lands and resources including air and water, languages, cultures, traditional foods and subsistence, sovereignty and self-determination, life and security of person, free prior and informed consent and the transmission of traditional knowledge and teachings to our future generations are inherent and inalienable human rights. They are affirmed in the UN *Declaration on the*

Rights of Indigenous Peoples and other international standards, and must be upheld, respected and fully implemented by States, UN bodies, corporations and Indigenous Peoples of the world.

4) Our bodies are sacred places that must be protected, honored and kept free of harmful contaminants so that new generations of our Nations are born strong and healthy. The right to self-determination for Indigenous Peoples includes our Indigenous identities, our sexualities and our reproductive health for the future of our Nations.

5) The detrimental health effects of toxic contaminants on Indigenous women are well documented, and are affirmed through testimonies presented in this Symposium. These include high levels of toxics in Indigenous women's breast milk, placental cord blood, blood serum and body fat infertility, miscarriages, premature births, premature menopause, early menses, reproductive system cancers, decreased lactation and inability to produce healthy children. This causes severe psychological, relational, emotional and economic damage to mothers, families and communities.

6) Environmental toxins also have severe negative impacts on the health and development of our children and unborn generations. Many toxic chemicals impair the endocrine and immune systems in utero, affecting health and reproductive capacity of future generations. The intellectual and neurological development of our children are also affected, impacting their ability to retain and pass on our culture, ceremonies, stories, languages and songs.

7) The individual and collective impacts of intergenerational trauma and the legacy of removal and violence are passed on to future generations. Intergenerational trauma amplifies and reinforces impacts of extractive industry, military and environmental degradation in our communities. Addressing intergenerational trauma is a core component of rebuilding reproductive health for our communities.

8) Environmental contaminants causing disease, birth defects and death are deliberately released into the environment *because* they are toxic to living things (i.e. pesticides), or as a result of industrial or military processes that are judged by States and corporations to pose an "acceptable risk" and "allowable harm." States and corporations deny "provable" impacts despite the clear evidence that they cause a range of serious health and reproductive impacts which disproportionately affect Indigenous women and children. This constitutes "environmental violence" by States and corporations and must be identified as such by Indigenous Peoples and human rights bodies.

9) Environmental contamination infringes on the cultural practices of Indigenous Peoples including women's coming of age, rites of passage and other ceremonies for the continuation of life. The use of pesticides on materials used for baskets and cradle boards has resulted in increased rates of cancer for basket makers. Plants, herbs, and traditional medicines vital to Indigenous Peoples' maternal and child health are often outlawed, prohibited, contaminated or are becoming extinct.

10) Land privatization, corporatization and militarization divides our collective land bases, facilitating resource extraction, displacement, forced removal and environmental contamination, impacting Indigenous women's economic, cultural and social practices and reproductive health.

11) We recognize the links between our concerns and struggles. Coal mining contaminates water and decimates fish, wildlife and traditional medicines. Burning coal is also a primary source of mercury emissions and climate change, affecting Indigenous communities globally. Pesticides used in Mexico and other countries contaminate Indigenous communities at the source of exposure, and then enters the

environment and food chain, traveling to the Arctic and concentrating in traditional food, bodies, and breast milk. Likewise, introduction of extractive industries near our communities often results in increased levels of sexual exploitation and violence for our Indigenous women and girls.

12) We will continue to use our own languages and ways of knowing. Our understandings cannot always be expressed in the language of modern science and law. Our Peoples, especially our traditional knowledge holders, spiritual leaders and elders are the experts. We affirm their teachings that we are now in a time that will determine our survival, depending on the choices we make.

13) We affirm the use of our own Indigenous justice and legal systems, including Treaty-Based justice systems to hold those accountable for environmental violence.

14) We recognize the importance of continuing to educate our own Peoples and communities about the links between reproductive health, environmental contaminants and their human rights as affirmed in the UN Declaration, Nation-to-Nation Treaties and other international standards. When Indigenous communities understand these links, they become active participants in resisting environmental violence and violations of their rights.

15) We firmly denounce the continued impunity of States and corporations for the environmental violence they carry out or permit affecting Indigenous Peoples ecosystems, traditional foods, health, well-being and ways of life.

16) While we recognize the impacts and tragedies that have occurred as a result of environmental violence, we also celebrate our struggles, victories and our continued strength, resilience and resistance.

Based on these shared understandings, we adopt by consensus this ***2nd DECLARATION for the Health, Survival and Defense of OUR LANDS, OUR RIGHTS and our FUTURE GENERATIONS and make the following recommendations:***

That Indigenous Peoples, Nations and Communities:

1) Identify and document the disproportionate impacts of environmental toxins on Indigenous women and children as "environmental violence" for which States and corporations can be held accountable.

2) Provide community capacity-building and training linking reproductive and environmental health and human rights.

3) Maintain, support, strengthen and assert traditional systems of law, community organization, decision-making, leadership and representation.

That States and their subsidiary governments (Territories, provinces/states, municipal etc.):

1) Fully implement and uphold, without qualification, the UN Declaration on the Rights of Indigenous Peoples, including Article 29 regarding the right of Indigenous Peoples to the protection of their environments and the State obligation to ensure free prior and informed consent regarding hazardous materials. We also call for the full and unqualified implementation of Articles 23 and 24 affirming our collective rights to health and use of traditional medicines.

2) Eliminate the production and use of pesticides, industrial chemicals and toxic by-products that disrupt the endocrine system, affect learning and neurological development, cause cancers and other illnesses, undermine women's reproductive and maternal health, contaminate lands, waters and traditional food sources and affect any aspect of the health and development of our future generations.

3) Take responsibility for effective and immediate clean-up of contaminated sites created by activities which they permitted or approved in collaboration and coordination with impacted Indigenous Peoples.

4) Implement programs to restore the health of Indigenous Peoples, including women and children who have been negatively impacted by environmental toxins, including their export and import in collaboration and coordination with the affected Indigenous Peoples including Indigenous women.

5) Immediately cease the practice of exporting and importing banned pesticides, toxic wastes and other chemicals in particular from the United States. .

6) Implement and mandate culturally relevant gender based analysis in all impact statements regarding mining and other industries, also ensuring FPIC.

7) Recognize the knowledge and practices of Indigenous women's health, birthing, traditional midwifery, and the use of Indigenous medicinal knowledge on equal footing with other health systems and methods, and the right of Indigenous healers to protect and use this knowledge as they so choose.

8) Prosecute companies and hold military accountable for the full extent of their violations to the rights of Indigenous Peoples pertaining to the contamination of lands, territories and resources, and respect Indigenous Peoples' legal and judicial systems in accordance with Article 27 of the UN Declaration in their efforts to hold government and corporations accountable.

9) We call in particular upon Canada and the United States to implement the recommendations made in 2007, 2008 and 2012 by the UN Committee on the Elimination of Racial Discrimination (CERD) calling upon them to take appropriate legislative measures to prevent the transnational corporations they license from negatively impacting the rights of Indigenous outside Canada and the United States.

Recommendations to the United Nations System and International processes:

1) That the Permanent Forum 11th session in its half-day session on food sovereignty consider the direct links between food sovereignty, environmental violence and reproductive health and the specific impacts to Indigenous women, children and unborn generations.

2) That the World Conference on Indigenous Peoples address reproductive and environmental health, and receive the report of the 3rd symposium to be held in 2014 in the autonomous region of Nicaragua.

3) That effective, transparent international mechanisms be established to ensure accountability, redress and restitution with the full participation of affected Indigenous Peoples and for UN Human rights bodies to dedicate particular attention to the matter of environmental violence.

4) That the World Conference on Sustainable Development (Rio + 20, 2012) reaffirm the "precautionary approach as an alternative to the models of "risk assessment" and "management" of toxic chemicals and

pesticides, and recognize and support sustainable agricultural methods and practices used traditionally by Indigenous Peoples.

5) That UN Conventions and national laws which permit the export, transport and import of banned pesticides, wastes and other toxics without the free, prior and informed consent of the Indigenous Peoples and communities who may be impacted be immediately reviewed and revised

6) That the United Nations, its agencies and members ensure that Human Rights principles and standards are mainstreamed in all international standard-setting processes addressing environment and development, including the United Nations Declaration on the Rights of Indigenous Peoples.

7) That the UN Permanent Forum on Indigenous Issues, the UN Special Rapporteur on the Rights of Indigenous Peoples and other UN bodies and mechanisms focus attention and collect information from Indigenous Peoples, in particular Indigenous women, on the links between environmental contamination and reproductive health and recommend effective solutions and remedies at the international level.

8) We endorse the "Indigenous Mothers Against Mercury" open letter's recommendations calling for strong language in the new legally-binding International Treaty on Mercury, to "*halt emissions of mercury into the environment from all sources, including the burning of coal,*" *and "to ensure the full, formal and effective participation of Indigenous Peoples, including Indigenous women.*" We also recommend that the Permanent Forum at its 11th session call upon States and the UN Environmental Program to incorporate the recognition of Indigenous Peoples and in the operative text of the Treaty.

Cross Cutting

1) We recommend that States, UN agencies and Indigenous Peoples affirm and utilize the Precautionary Principle, recognizing Indigenous Peoples' traditional knowledge about the effects of chronic pollution as well as the social stressors caused by development and industry that impact and divide communities. These include increased mental health concerns, violence against Indigenous women, children, and families, sexually transmitted infections including HIV, incarceration, child removal and suicide.

2) We reiterate our support for a moratorium on new fossil fuel exploration, processing and extraction, as the first step towards the full phase-out of fossil fuels with a just transition to sustainable energy and the protection of our Peoples and ecosystems from the devastating impacts of climate change.

3) We call upon Indigenous, National and International processes to respect the traditional knowledge of Indigenous women regarding sustainable development, environmental protection, cultural practices, food production and health and to include their full and effective participation as leaders and experts in all levels of decision-making on these matters.

Conclusion

We commit to continue our work and fulfill our responsibilities to our children and the generations still to come. We commit to reclaim our wellness as Indigenous women and Peoples. We reaffirm that our children have a right to be born healthy and to live in a clean environment, and that in order to heal our Peoples and Mother Earth, we have to continue to heal ourselves, tell our stories and be who we are.

"We are like a strong river that rises and falls, is always connected and will never stop flowing."

Affirmed by consensus of the participants in the Symposium on April 29th, 2012:

1. Alice Skenandore – Midwife, Wise Women Gathering Place, LCO Ojibwe, Wisconsin, USA
2. Alyssa Macy – International Indian Treaty Council, Warm Spring Tribe, Oregon , USA
3. Andrea Carmen - International Indian Treaty Council, Yaqui Nation, Mexico, USA
4. Aurelia Espinoza Buitimea – Traditional healer, curandera and midwife, Jittoa Bat Natika Weria, Yaqui Nation, Sonora Mexico
5. Blanch Okboak – Teller Traditional Council, Inupiat, Alaska
6. Brandy Standifer – Village of Tyonek Tribal Member, Tyonek, Alaska
7. Camille Gemmill – Youth Representative, Gwich'in Nation, Alaska
8. Charlotte Jane Kava - Inupiat, St. Lawrence Island, Native Village of Savoonga, Alaska
9. Danika Littlechild – International Indian Treaty Council, Ermineskin Cree Nation, Canada
10. Donna Miranda-Begay – Chairwoman, Tubatulabal Tribe, California, USA
11. Edda Moreno – Centro para la Autonomía y Desarrollo de los Pueblos Miskitu, Nicaragua
12. Elvia Beltran Villeda - Red Indigena de Turismo de México, Pueblo Hnahnu, Mexico
13. Emily (Funny) Murray – Elim Students Against Uranium, Inupiaq, Elim, Alaska
14. Erin Konsmo - Native Youth Sexual Health Network, Metis Nation, Canada
15. Enei Begay – Black Mesa Water Coalition, Dine, Arizona, USA
16. Faith Gemmill - California Indian Environmental Alliance, International Indian Treaty Council, REDOIL, Arctic Village, Gwich'in, Alaska and Pit River, Wintu California, USA
17. Faustina Buitimea Gotogopicio – Tradtional healer, curandera, Yaqui Nation, Sonora Mexico
18. Harriett Penayah – Elder, Native Village of Savoonga, St. Lawrence Island, Yupik, Alaska
19. Hinewirangi Kohu –Te Rau Aroha, Maori Women's Centers, Aotearoa (New Zealand)
20. Jackie Warledo - International Indian Treaty Council, Seminole Nation of Oklahoma, USA
21. Janet Mitchell – Inupiaq, Kivalina City Council, Alaska
22. Janet Daniels – Elder, Chickaloon Native Village, Chickaloon, Alaska
23. Jeannette Corbiere Lavel – Native Women's Association of Canada, Anishnabe Nation, Canada
24. Jessica Danforth - Native Youth Sexual Health Network, Mohawk Nation, USA and Canada
25. Judy Hughes – National Aboriginal Health Organization, Metis Nation, Canada
26. Julia Dorris – Traditional Council of Kalskag, Yupik, Alaska
27. Kandi Mossett – Indigenous Environmental Network, Fort Berthold Indian Reservation, USA
28. Kari L. Shaginoff - International Indian Treaty Council, Ya Ne Dah Ah Tribal School, Chickaloon, Alaska
29. Karla Brollier – Alaska Community Action on Toxics, Ahtna-Cantwell, Alaska
30. Kathy Sanchez – Tewa Women United, San Ildefonso Pueblo, New Mexico, USA
31. Lisa Wade – Chickaloon Village Health Director, Chickaloon, Alaska
32. Manuela Victoria Barrientos Carbajal – Chirapaq, Community of Hualia, Peru
33. Maria Berenice Sandez Lozada – Di sunga a Nana Shimjai, Nahua-Otomi, Mexico
34. Marian Naranjo - Honor Our Pueblo Existence, Santa Clara Pueblo, New Mexico, USA
35. Martha Itta - Inupiaq, Tribal Administrator, Native Village of Nuiqsut, Alaska
36. Maudilia López Cardona - Frente de Defensa Miguelense, Mam Maya, Guatemala
37. Melina Laboucan-Massimo – Lubicon Cree First Nation, Canada
38. Monique Sonoquie - California Indian Basket Weavers Alliance, Chumash, California, USA
39. Norma Chickalusion – Village of Tyonek Tribal Member, Tyonek, Alaska

40. Patricia Wade – Editor Chickaloon News, Chickaloon, Alaska
41. Pauline Kohler – Aleknagik Traditional Council, Yupik, Alaska
42. Penny Westing – Chickaloon Village Traditional Council Secretary, Chickaloon, Alaska
43. Princess Lucaj – Gwich'in Steering Committee, Gwich'in, Alaska
44. Rita Blumenstein – Traditional Healer, Yupik, Chefornak, Alaska
45. Rosemary Ahtuangaruk – Inupaiq, Native Villate of Nuiqsut, Alaska
46. Samantha Englishoe – Alaska Community Action on Toxics, Tlingit, Gwichin
47. Sewa Carmen – Chickaloon Village Youth Representative, Chickaloon, Alaska
48. Shawna Larson – Chickaloon Village Traditional Council Member, Chickaloon, Alaska
49. Sondra Stuart – Chickaloon Village Tribal Citizen, Chickaloon, Alaska
50. Susie Booshu – Native Village of Gambell, Yupik, Alaska
51. Viola Waghiyi – Native Village of Savoonga, St. Lawrence Island, Yupik, Alaska
52. Xiomara Ownes – Traditional Healer, Tlingit, Athabascan, Alaska

Sovereignty: Long Live Mother Earth

Women's Declaration 2012: Year of Indigenous Women

Preamble

Indigenous women have sacred parallel earth energy with Mother Earth.

In our diverse yet increasingly interdependent homelands, it is imperative that we, the people of Earth, declare our responsibility to one another as in all relationships, to the greater community of life and to future generations. We are one human family with one earth community with a common destiny. Yet as female and male energy is found within the other, so are we to love each other and do no harm to each other in the home of our mother, Mother Earth. All lands are sacred and in sacred time and space.

Humanity is part of a vast evolving multi-verse. Earth is our home and our mother is alive with a unique community of life givers. The life givers are Women. The protection of Women, their vitality and their well-being is the sacred fluid and energy of love.

The Earth community stands at a defining moment in time. Injustices, poverty, ignorance, corruption, crime and violence against women have deepened and our earth mother is crying and suffering. Corrupt fundamental racism has made changes into our present attitudes and values. Militaristic ways of making a living as have become harmful and destructive. Extreme materialism has dug deep into the holy body of our Mother Earth. These unhealthy ways need to be returned to the light of truth and colorful sounds of lovingness returned to our Earth Mother. The choice is ours: to care for our Mother Earth and one another or participate in the destruction of ourselves and all life givers.

We, therefore, declare the following:

1. Whereas, women are the nurturers of the human seed within their wombs are bearers of the blessing of creation through the process of giving birth,

2. Whereas, in worldwide ancient creation stories, in ancient cultures and throughout human life narratives ,women have played a profound role to return and revere earth as our source of all life,

3. Whereas, women's bodies are intimately connected to Mother Earth as reflected in our moon cycles that are the basis for procreation and birthing of children,

4. Whereas, mothers and grandmothers continue to be the primary caregivers of children through breastfeeding, feeding, and nurturing, from infancy to all the stages of our human lives,

5. Whereas, women have also nurtured other women herstorically and traditionally serving as midwives and helping one another raise their children along with their extended families,

6. Whereas, women are believed to have been the first seed savers and contributed to the

cultivation of crops in a way that transformed human existence and, today, in our families, communities mothers and grandmothers have continued to be the primary caretakers of seeds,

7. Whereas, women have a special relationship with food in their role as farmers, nurturers, seed savers, and cooks and, therefore, they are the holders of culturally significant recipes and methods for storing and preparing food,

8. Whereas, many of the increasing numbers of small scale, independent farmers are women farmers from various backgrounds who are dedicated to growing clean, healthy, and fair food and to restoring harmony to the earth,

9. Whereas, women provide an important support system for all the activities of operating our family farms and ranches, including serving as part of the labor essential to the process, providing meals for other laborers, and teaching children the values of land-based culture and way of life,

10. Whereas, women are often the teachers of life skills to their children and are therefore important to ensuring that traditional knowledge is passed from generation to generation.

11. Whereas, women play important roles in our communities as spiritual leaders who offer blessings at important times in our lives and who offer guidance on important life decisions,

12. Whereas, women in traditional communities hold essential traditional knowledge including teachings about medicinal plants, where they can be harvested, and how they should be used,

13. Whereas, in recorded time, women's role as homemakers was broad and including helping one another to build,thatch ,plaster, and maintain their earthen homes,

14. Whereas, for millennia, women have harvested foods such as *piñon*, *quelites*, *tsimaja*, asparagus, *verdolagas*, *chocoyole*, and many varieties of berries, which we regard as special gifts and blessings,

15. Whereas, herstorically and traditionally, women's roles in families and communities were highly valued and the equally important role of men included providing the needed support system in order to raise healthy families,

16. Whereas, women today are often not respected as they were traditionally and are often subjected to violence in their own homes by those closest to them,

17. Whereas, women today and herstorically have, out of the love of their children and men in their families, have been at the forefront of resisting all forms of domesticated violent ways of living, including economic ways of the war culture,

18. Whereas, because of the nature of women's bodies related to procreation and our intimate relationship with the earth through farming, herb gathering, and earthwork, we are particularly sensitive to exposure to toxic pollutants from various sources,

19. Whereas, the parts of our bodies meant to nurture and nourish our children are also most susceptible to disease and cancer considering that elevated levels of breast cancer, ovarian cancer, and other deadly diseases result from exposure to toxins,

20. Whereas, mothers and grandmothers who feed and nurture their children are concerned about the existence of synthetic hormones and pesticide residues in foods resulting in unprecedented effects on boys and girls such as premature puberty, cancer, and other long-term effects that are unknown,

21. Whereas, our families are also threatened by the unknown health and ecological effects of genetically engineered seeds, plants, and animals, and we are gravely concerned about the patenting of human life which could have unintended consequences for our families and future generations,

22. Whereas, sacred homelands are manipulated settings for various polluting industries, mining operations, power plants, and nuclear facilities that, although serve as a tainted source of financial income for some of our families, also are responsible for pollution that harms all of our families and are part of a pattern of economic development that displaces traditional peoples from the land,

23. Whereas, women are often low-wage workers in these same polluting industries exposed to certain toxins and women are often low-wage agricultural workers who are exposed to pesticides and herbicides in industrial agriculture,

24. Whereas, women have played a key role along with men in social movements to achieve social, economic, and environmental justice by voicing concerns about the threats of toxins to our families and by calling for livelihoods for ourselves and our families that are clean, healthy, and dignified,

25. Be it resolved that we are gathered to declare our reverence for our women ancestors of ancient times that nurtured generation upon generation so that we could be given the blessings of life for all,

26. Be it further resolved that we will collectively and intentionally work to carry on the seed saving, farming, and land-based traditions of our ancestors and to pass these teachings on to the younger generations,

27. Be it further resolved that we will resist the genetic engineering and patenting of life so that we may maintain the integrity of our seeds, our right to grow our own food, and the sacredness of life itself,

28. Be it further resolved that we will raise our children to be conscious human beings mindful of the sacred gift of life we have been granted by the creator, to be reverent of our Mother Earth, and to be respectful in their relations,

29. Be it further resolved that we will work in solidarity with each other in our struggles to defend the air, land, and water from contamination, exploitation, and militarization,

30. Be it further resolved that we honor, respect, and recognize the dignity of women and

their families throughout the world and here at home who are subjected to exposure to toxins through their work, their food, or their proximity to pollution and that we resolve to speak and act in solidarity with them in efforts to defend the health of their families and communities,

31. Be it further resolved that we will continue to play an important role in reshaping our communities to achieve a vision of safe, healthy, and joyful lives for our families and communities with good, healthy and locally grown food, good livelihoods that honor the dignity of every human person, and a meaningful and spiritual relationship with Mother Earth.

36. Be it further resolved that we will honor and respect the women in our lives including our mothers, sisters, aunties, grandmothers, and great-grandmothers by thanking them for giving us live and for nurturing us throughout our lives,

37. Be it further resolved that we will teach our children, both boys and girls, the importance of living close to the land, having good relations with one another, and acting with dignity and respect in our actions to protect Mother Earth.

38. May it be further resolved that we the undersigned, have read this document and are in support of **Sovereignty: Long Live Mother Earth**

Women's Declaration for 2012: Year of Indigenous Women. We find it to be true and will assist wherever possible to learn and teach the children the importance of living close to the land, having respectful relations with one another and act with dignity and respect to protect Mother Earth, so she in turn can continue to care for us.

References to Indigenous Women in the ALTA Outcome Document

"We reaffirm the peremptory norms of international law, including on equality and non-discrimination, and assert that the realization of the rights of Indigenous Peoples, including those affirmed in the Declaration, must be upheld by States, individually and collectively, free from all forms of discrimination including discrimination based on race, ethnicity, religion, **gender**, sexual orientation, age and disability. We also reaffirm that the Declaration must be regarded as the normative framework and basis for the Outcome Document and its full realization. ***(Preamble, Paragraph 7)***

"We condemn violence against Indigenous **women,** youth and children as one of the worst human rights violations affecting Indigenous Peoples and families. Violence against Indigenous **women**, youth and children is dehumanizing and also affects their spiritual development and violates their fundamental rights." ***(Preamble, Paragraph 9)***

"*Recommend* that States uphold and respect the right of self determination and the free, prior and informed consent of Indigenous Peoples who do not want mining and other forms of resource extraction, "development" and technologies deemed as degrading to their human, cultural, **reproductive** and ecosystem health. Where mining and other forms of resource extraction are already occurring, States shall develop mechanisms with the full and effective participation of Indigenous Peoples to develop a comprehensive strategy for ecologically sustainable and equitable development to end and prevent uncontrolled and unsustainable industrial contamination and degradation with plans for clean-up, remediation and restoration. Such as strategy shall incorporate strengthening the capacity of Indigenous youth in relation to sustainable development practices based on Indigenous knowledge and the relationship with the land as well as the protection and promotion of the important role of traditional knowledge holders including Indigenous Elders and **women**;" ***(Theme 1: Indigenous Peoples' lands, territories, resources, oceans and waters, Paragraph 6)***

" *Recommend* that all UN agencies, funds and programmes engaging in activities impacting on Indigenous Peoples from advisory councils or forums composed of representatives of Indigenous Peoples including **women,** youth and persons with disabilities to engage in dialogue and provide advice on policy making and country and regional level operations;" ***(Theme 2: UN system action for the implementation of the rights of Indigenous Peoples, Paragraph 6)***

"*Recommend* that States using the principles of Indigenous consent, ownership, control, and access, collect, analyze and disaggregate data on Indigenous Peoples, including Elders, **women,** youth, children and persons with disabilities, to help draft and implement public policy and legislation that better

addressed the situation of Indigenous Elderly, **women**, youth, children and persons with disabilities;" ***(Theme 3: Implementation of the Rights of Indigenous Peoples, Paragraph 3)***

"*Recommend* that States uphold and implement the rights of Indigenous **women** as sacred life givers and nurturers as well as strengthen – with the full and effective participation of Indigenous **women** – the protection of Indigenous **women** and girls though the formulation and implementation of national, regional and international plans of action developed in conjunction with Indigenous Peoples effective laws, policies and strategies;" ***(Theme 3: Implementation of the Rights of Indigenous Peoples, Paragraph 5)***

"*Recommend* States with the full, equal and effective participation of Indigenous **women**, youth and girls take immediate action to review, monitor and provide comprehensive reports on violence against indigenous **women**, youth and girls, in particular sexual violence, domestic violence, trafficking and violence related to extractive industries as well as provide redress for victims;" ***(Theme 3: Implementation of the Rights of Indigenous Peoples, Paragraph 6)***

"*Recommend* States cease current, and refrain from any further, militarization and initiate processes to demilitarize the lands, territories, waters and oceans of Indigenous Peoples. This can be achieved inter alia through the repeal and/or discontinuance of "anti terrorist", national security, immigration, border control and other special laws, regulations, operations and executive orders that violate the rights of Indigenous Peoples. Special measures should be taken to ensure the protection of Indigenous Elders, **women**, youth, children and persons with disabilities, particularly in the context of armed conflicts;" ***(Theme 3: Implementation of the Rights of Indigenous Peoples, Paragraph 7)***

"*Recommend* States support programmes of Indigenous Peoples to strengthen the capacity of Indigenous youth, including the transmission of traditional knowledge, innovations and practices as well as languages and on the important role of Indigenous Peoples including Elders and **women** as traditional knowledge holders. Further, that States and UN agencies, programs and funds respect and promote Indigenous Peoples' right to free, prior and informed consent in relation to their traditional knowledge and traditional cultural expressions;" ***(Theme 4: Indigenous Peoples' priorities for Development with free, prior and informed consent, Paragraph 3)***

Referencias a las Mujeres Indígenas en el Documento Final de ALTA

"Reafirmamos las normas imperativas del derecho internacional, incluidas aquellas en materia de igualdad y no discriminación, y afirmamos que la realización de los derechos de los Pueblos Indígenas, incluidos los enunciados en la Declaración, deben ser defendidos por los Estados en forma individual y

colectiva, libre de todas las formas de discriminación, incluida la discriminación por motivos de raza, origen étnico, religión, **género,** orientación sexual, edad y discapacidad. Reafirmamos también que la Declaración debe ser considerada como el marco normativo y la base para el Documento Final y su plena realización." ***(Preámbulo, párrafo 7)***

"Condenamos la violencia contra **las mujeres**, jóvenes y niños Indígenas como una de las peores violaciones de derechos humanos que afectan a los Pueblos y familias Indígenas. La violencia contra **las mujeres**, jóvenes y niños Indígenas es deshumanizante y también afecta a su desarrollo espiritual y viola sus derechos fundamentales. ***(Preámbulo, párrafo 9)***

"Recomendamos que los Estados defiendan y respeten el derecho de libre determinación y de consentimiento libre, previo e informado de los Pueblos Indígenas que no quieran la minería y otras formas de extracción de recursos, "desarrollo" y tecnologías consideradas como degradantes para la salud humana, cultural, **reproductiva** y del ecosistema. Cuando la minería y otras formas de extracción de recursos ya estén ocurriendo, los Estados deberán establecer mecanismos con la participación plena y efectiva de los Pueblos Indígenas para desarrollar una estrategia comprehensiva para el desarrollo ecológicamente sostenible y equitativo para poner fin y prevenir la contaminación industrial incontrolada e insostenible y la degradación, con planes de limpieza, rehabilitación y restauración. Esa estrategia deberá incluir el fortalecimiento de la capacidad de los jóvenes Indígenas en relación con las prácticas de desarrollo sostenible basadas en el conocimiento Indígena y la relación con la tierra, así como la protección y la promoción de la importancia del papel de los titulares de conocimientos tradicionales, incluidos los ancianos y **mujeres Indígenas;**" ***(Tema 1: Tierras, territorios, recursos, océanos y aguas de los Pueblos Indígenas, párrafo 6)***

"Recomendamos que todas las agencias, programas y fondos de las Naciones Unidas que participen en actividades que impactan a los Pueblos Indígenas establezcan consejos consultivos o foros integrados por representantes de los Pueblos Indígenas, incluidas **las mujeres,** jóvenes y personas con discapacidad para participar en el diálogo y proporcionar asesoramiento sobre políticas y operaciones de los países y a nivel regional;" ***(Tema 2: Acción del sistema de la ONU para la implementación de los derechos de los Pueblos Indígenas, párrafo 6)***

"Recomendamos que los Estados, utilizando los principios Indígenas de consentimiento, propiedad, control y acceso, recopilen, analicen y desglosen los datos sobre los Pueblos Indígenas, incluidos los ancianos, **mujeres**, jóvenes, niños y personas con discapacidad, para ayudar a redactar y poner en práctica la política pública y la legislación que se ocupe de mejorar la situación de los ancianos, **las mujeres**, jóvenes, niños y personas con discapacidad Indígenas;" ***(Tema 3: Implementación de los Derechos de los Pueblos Indígenas párrafo 3)***

"Recomendamos que los Estados respeten e implementen los derechos de ***las mujeres Indígenas*** *como dadoras sagradas de vida y criadoras, así como fortalezcan—con la participación plena y efectiva de* ***las mujeres Indígenas*****—** *la protección de las mujeres y niñas Indígenas a través de la formulación e implementación de planes de acción nacionales, regionales e internacionales desarrollados conjuntamente con las leyes, políticas y estrategias eficaces de los Pueblos Indígenas;"* ***(Tema 3: Implementación de los Derechos de los Pueblos Indígenas párrafo 5)***

"Recomendamos que los Estados, con la participación plena, equitativa y efectiva de las mujeres, jóvenes y niñas Indígenas, tomen medidas inmediatas para examinar, supervisar y presentar informes completos sobre la violencia contra **las mujeres**, las jóvenes y las niñas Indígenas, en particular la violencia sexual, la violencia doméstica, la trata y la violencia relacionada a las industrias extractivas, así como proporcionen reparación a las víctimas;" ***(Tema 3: Implementación de los Derechos de los Pueblos Indígenas párrafo 6)***

"Recomendamos que los Estados cesen y se abstengan de continuar la militarización actual e inicien procesos de desmilitarización de las tierras, territorios, aguas y océanos de los Pueblos Indígenas. Esto se puede lograr mediante, entre otras cosas, la derogación y/o interrupción de la seguridad nacional "antiterrorista", las leyes sobre inmigración, control fronterizo y otras leyes, reglamentos, operaciones y órdenes ejecutivas especiales que violan los derechos de los Pueblos Indígenas. Se deben tomar medidas especiales para garantizar la protección de los ancianos, **las mujeres**, jóvenes, niños y personas con discapacidad, en particular en el contexto de los conflictos armados;" ***(Tema 3: Implementación de los Derechos de los Pueblos Indígenas párrafo 7)***

Recomendamos que los Estados apoyen programas de los Pueblos Indígenas para fortalecer la capacidad de los jóvenes Indígenas, incluidos aquellos sobre la transmisión de los conocimientos tradicionales, innovaciones y prácticas, así como sobre los idiomas y el papel importante de los Pueblos Indígenas, incluidos los ancianos y **las mujeres**, como titulares de conocimientos tradicionales. Además, recomendamos que los Estados y las agencias, programas y fondos de Naciones Unidas respeten y promuevan el derecho de consentimiento libre, previo e informado de los Pueblos Indígenas en relación con sus conocimientos tradicionales y sus expresiones culturales tradicionales; ***(Tema 4: Prioridades de los Pueblos Indígenas en materia de Desarrollo con consentimiento libre, previo e informado, párrafo 3)***

Compiled and submitted to the World Conference of Indigenous Women, October 28 – 30, 2013, Lima Peru, by Andrea Carmen (North America Region) and Mililani Trask (Pacific Region)

Elaborado y presentado a la Conferencia Mundial de las Mujeres Indígenas, 28 de octubre - 30, 2013, Lima, Perú, por Andrea Carmen (Región de América del Norte) y Mililani Trask (Región de Pacífico).

Appendix G to CCW, TWU and Individual Public Comments and Hearing Request – DP-1132

Freedom of Information Act (FOIA) Documents

November 27, 2013 Request Confirmation for Tracking Number: EPA-R6-2014-001500

December 2, 2013 Department of Energy HQ-2014-00270-F

Request Confirmation

Request Information

Tracking Number : *EPA-R6-2014-001500*

Requester Name : Joni Arends

Date Submitted : 11/27/2013

Request Status : Submitted

Description :

CCNS requests all correspondence, documents, emails, notes and data submitted to and responded by the Environmental Protection Agency (EPA) Region 6 from and to Los Alamos National Laboratory (LANL) as required by 40 CFR 61, Subpart H (Rad NESHAPs) about the new/modified source review for the Solar Evaporation Tank (SET) at Technical Area 52 and the Mechanical Evaporation System (MES) associated with operations at the TA-50 Radioactive Liquid Waste Treatment Facility. Please provide all information supporting the LANL determination that the evaporation systems (SET and MES) emit less than 0.1 millirems (mrems) into the environment annually. Please provide all EPA correspondence, documents, emails, notes and data regarding any approval or disapproval of the new/modified source review determination for the SET and MES.

Department of Energy
Washington, DC 20585

December 02, 2013

Ms. Joni Arends
Concerned Citizens for Nuclear Safety
107 Cienega Street
Santa Fe, NM 87501

HQ-2014-00270-F

Re: All documents, emails and data that Los Alamos National Laboratory (LANL) submitted to the Environmental Protection Agency (EPA) Region 6 regarding the Clean Air Act new/modified source review for the Zero Liquid Discharge Solar Evaporation Tanks (SET) at Technical Area 52, as well as the use of the Mechanical Evaporation System (MES). Copies of all documents, emails and data that support LANL's new/modified source determination that the evaporation systems emit below 0.1 millirem (mrem) of radiation to the environment as required by 40 CFR 61, Subpart H.

Dear Ms. Arends:

Thank you for the request for information that you made to the Department of Energy (DOE) under the Freedom of Information Act (FOIA), 5 U.S.C. 552. Your letter was received in this office on today, and has been assigned a controlled number, HQ-2014-00270-F. Since we receive several hundred requests a year, please use this number in any correspondence with the Department about your request.

We are reviewing your letter to determine if it addresses all of the criteria of a proper request under the FOIA and the DOE regulation that implements the FOIA at Title 10, Code of Federal Regulations, Part 1004. We will send you a subsequent letter to inform you if we need additional information or to state where the request has been assigned to conduct a search for responsive documents.

I appreciate the opportunity to assist you with this matter. If you have any questions about this letter, please contact this office on (202)586-5955.

Sincerely,

Alexander C. Morris
FOIA Officer
Office of Information Resources

State of New Mexico
ENVIRONMENT DEPARTMENT
Ground Water Quality Bureau
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-2918 phone
(505) 827-2965 fax

GARY E. JOHNSON
GOVERNOR

MARK E. WEIDLER
Secretary

CERTIFIED LETTER - RETURN RECEIPT REQUIRED

February 26, 1999

Susan Diane
P.O. box 9855
Santa Fe, New Mexico 87504

RE: Discharge Plan (DP-1132) for Los Alamos National Laboratory, Radioactive Liquid Waste Treatment Facility

Dear Ms. Diane:

The New Mexico Environment Department (NMED), Ground Water Quality Bureau (GWQB) received a request for public hearing from you, December 16, 1996, for the proposed discharge from the Los Alamos National Laboratory (LANL), Radioactive Liquid Waste Treatment Facility (RLWTF). In addition to your request, The Pueblo of San Ildefonso also requested a public hearing. However, the Pueblo of San Ildofonso withdrew their request for public hearing on April 27, 1998. The NMED has not been able to contact you by phone and would like to discuss with you the current status of the groundwater discharge plan and your current interest in a public hearing.

The following provides a response to the questions that were submitted with your request for a public hearing.

1. Q. *Does the plan eliminate the discharge of radionuclides and bring the release of nitrates to within acceptable levels?*

A. LANL has proposed discharge limitations for both radionuclides and nitrates in their permit application. Phase I of the upgrades to the RLWTF will include Tubular Ultrafiltration ro removal of radionuclides followed by reverse osmosis. LANL states in the discharge plan application that the Phase I upgrades will ensure that treated effluent to be discharged will be below the Derived Concentration Guidelines (DCG's) for radionuclides set forth in DOE Order 5400.5.

: 09766

Nitrate will be removed from the waste stream by reverse osmosis. Long term compliance with WQCC Regulation 3103 standards will be achieved by evaporating off reverse osmosis reject waste water with a mechanical evaporator. Short term compliance with WQCC Regulation 3103 standards will be achieved by containerizing the reverse osmosis waste stream and returning it to the clean water waste stream at a rate that will not cause effluent concentrations to be above any WQCC Regulation 3103 standard. This includes nitrate.

If treated wastewater does not meet the numerical discharge limitations, LANL has proposed to retain and recirculate treated wastewater at the treatment plant until it meets discharge limitations.

2. Q. *Does the plan address the extent of past contamination and possible remediation efforts?*

A. The original discharge plan application submitted August 1996 includes information on past contamination in the alluvial aquifer. In addition to the original discharge plan application, LANL has produced the Work Plan for Mortandad Canyon which provides details on a groundwater investigation for Mortandad Canyon. The work plan is describes the actions LANL will take to determine the extent of past contamination in Mortandad Canyon. Without knowing the extent of current contamination, remediation requirements have not been determined. When information on the extent of past contamination becomes available, LANL will be required to propose and implement corrective actions.

3. Q. *Have adequte waste stream characterizations been performed for liquid volumes coming into RLWTF?*

A. The influent quality data that has been submitted to the GWQB is composite and not specific to an upstream waste water generator. The data is more representative of the wastewater that is treated at the ROWTF. The GWQB has reviewed data for influent quality and has requested updated comprehensive influent data to the RLWTF. The data will be reviewed prior to issuing the permit to insure that effluent monitoring requirements are adequate. In addition to water quality data, the original discharge plan application contains the waste acceptance criteria that waste generators must follow. The waste acceptance criteria sets limits on concentrations of constituents that can be discharged to the RLWTF.

4. Q. *What volumes of radioactive sludge are being projected for future burial at TA-54, Area G?*

A. The groundwater discharge plan application does not address the volumes of sludge to be disposed at TA-54. For further regulatory information on the disposal of sludge, contact the NMED, Hazardous and Radioactive Material Bureau (HRMB).

Ms. Diane
February 26, 1999
Page 3

Please contact Phyllis Bustamante of the GWQB, Pollution Prevention Section (PPS) at 827-0166 by March 12, 1999 to discuss the status of the discharge plan application and your current concerns. Based on your current concerns, the NMED will make a decision on holding a public hearing by mid March.

Sincerely,

Dale M Doremus

Dale M. Doremus, Program Manager
Ground Water Quality Bureau, Pollution Prevention Section

DMD/PAB/pab

xc: James Bearzi, District Manager, NMED District II

mon lunch

extend the deadline till today

since I wrote the letter in Dec
DOE plans to expand
it's operation - so therefore
I have additional comments
to submit

since I made my 1st
comments over 2 years ago
alot has changed & I know
quite a few people int in the
hearing -

what kind of deadline is - NMED under
~~rela~~ did the permit expire - can you send
any written permit -

09768

Los Alamos NATIONAL LABORATORY

Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

National Nuclear Security Administration
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87545
(505) 667-5794/Fax (505) 667-5948

Date: DEC 12 2013
Symbol: ENV-DO-13-0326
LAUR: 13-29209

Mr. Jerry Schoeppner, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Mr. Schoeppner:

SUBJECT: REVIEW COMMENTS, DRAFT DISCHARGE PERMIT, DP-1132, RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (RLWTF)

On September 13, 2013, the New Mexico Environment Department (NMED) gave notice that the U.S. Department of Energy and Los Alamos National Security, LLC's (DOE/LANS) application for the above-referenced Ground Water Discharge Permit for the Radioactive Liquid Waste Treatment Facility (RLWTF) had been issued for public comment, and that the draft permit will be available for a 90-day comment period. Enclosure 1 contains the NMED's public notice 2 for Ground Water Discharge Permit DP-1132.

DOE/LANS have reviewed the draft Ground Water Discharge Permit and prepared the enclosed written comments for your consideration.

- Enclosure 2: A master table listing all comments by DOE/LANS on the draft Discharge Permit
- Enclosure 3: General Comments on the draft Discharge Permit
- Enclosure 4: Table A-1, NMED Risk Assessment Guidance for Site Investigations and Remediation
- Enclosure 5: A redline-strikeout of the draft Discharge Permit showing all DOE/LANS comments

The Permittees believe these comments help to clarify the draft Ground Water Discharge Permit, and that proposed alternative text will facilitate final permit issuance. To address significant and outstanding issues stated in the comments, however, the Permittees request that a hearing be scheduled pursuant to NMAC 20.6.2.3108.K. The Permittees are hopeful that their concerns may be resolved in advance of a public hearing, and, if successful, will immediately withdraw the hearing request.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding the enclosed comments.

Sincerely,

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

Sincerely,

Peter Maggiore for
Gene E. Turner
Environmental Permitting Manager
Environmental Projects Office
Los Alamos Field Office
Department of Energy

AMD:GET:RSB/ms

Enclosures:

1. Enclosure 1, NMED's public notice 2 for Ground Water Discharge Permit DP-1132
2. Enclosure 2, a master table listing all comments by DOE/LANS on the draft Discharge Permit
3. Enclosure 3, General Comments on the draft Discharge Permit
4. Enclosure 4, Table A-1 of the NMED Risk Assessment Guidance
5. Enclosure 5, a redline-strikeout of the draft Discharge Permit showing all DOE/LANS comments

Cy: James Hogan, NMED/SWQB, Santa Fe, NM
John E. Kieling, NMED/HWB, Santa Fe, NM
Steven M. Yanicak, NMED/DOE/OB, (E-File)
Hai Shen, NA-OO-LA, (E-File)
Gene E. Turner, NA-OO-LA, (E-File)
Eric L. Trujillo, NA-OO-LA, (E-File)
Carl A. Beard, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Alison M. Dorries, ENV-DO, (E-File)
Robert C. Mason, TA55-DO, (E-File)
Leslie K. Sonnenberg, TA-55-RLW, (E-File)
William H. Schwettmann, IPM, (E-File)
John C. Del Signore, TA-55-RLW, (E-File)
Randal S. Johnson, DSEAH-TA55, (E-File)
Stephen G. Cossey, DSESH-TA-55, (E-File)
Michael T. Saladen, ENV-CP, (E-File)
Robert S. Beers, ENV-CP, K490
LASOmailbox@nnsa.doe.gov, (E-File)
locatesteam@lanl.gov, (U1302039), (E-File)
ENV-CP Correspondence File, w/enc., K490

ENCLOSURE 1

NMED public notice 2 for Ground Water
Discharge Permit DP-1132

ENV-DO-13-0326

LAUR-13-29209

U1302039

Date: DEC 12 2013

Notice is hereby given pursuant to 20.6.2.3108.H NMAC, the following Ground Water Discharge Permit applications have been proposed for approval. To request additional information or to obtain a copy of a draft permit, contact the Ground Water Quality Bureau in Santa Fe at (505) 827-2900. Draft permits may also be viewed on-line at http://www.nmenv.state.nm.us/gwb/NMED-GWQB-PublicNotice.htm

NOTE – If viewing by WEB - Click on facility name to review a copy of the draft permit.

DP #	Facility/Applicant	Closest City	County	Notice	NMED Permit Contact
1132	Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility Robert Beers, Point of Contact Los Alamos National Laboratory Environmental Protection Division Water Quality & RCRA Group P.O. Box 1663, Mail Stop K490 Los Alamos, NM 87545	Los Alamos	Los Alamos	Los Alamos National Security, LLC (LANS) and the United States Department of Energy (DOE) propose to treat up to 40,000 gallons per day of low-level radioactive wastewater at Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility, and to discharge treated effluent to a mechanical evaporation system, solar evaporation system or to an outfall (Outfall 051 also regulated under a National Pollutant Discharge Elimination System (NPDES) permit issued by the United States Environmental Protection Agency (EPA) pursuant to the federal Clean Water Act section 402, 33 U.S.C. § 1342). Potential contaminants associated with this type of waste stream include nitrogen compounds, metals, organic compounds, and low-level radioactive materials. The Facility is located within Los Alamos National Laboratory, approximately 1.5 miles south of Los Alamos, New Mexico, in Sections 16, 17, 20, 21 and 22, Township 19N, Range 06E, Los Alamos County. Ground water most likely to be affected ranges from depths of approximately one foot to 1,306 feet and has a total dissolved solids concentration ranging from approximately 162 to 255 milligrams per liter. This public notice has been extended to a period of 90 days in which written comments may be submitted to the department and/or a public hearing may be requested in writing.	Jennifer Fullam

Prior to ruling on any proposed Discharge Permit or its modification, the New Mexico Environment Department (NMED) will allow thirty days after the date of publication of this notice to receive written comments and during which time a public hearing may be requested by any interested person, including the applicant. Requests for public hearing shall be in writing and shall set forth the reasons why a hearing should be held. A hearing will be held if NMED determines that there is substantial public interest. Comments or requests for hearing should be submitted to the Ground Water Quality Bureau at PO Box 5469, Santa Fe, NM 87502-5469.

To view this and other public notices issued by the Ground Water Quality Bureau on-line, go to:
http://www.nmenv.state.nm.us/gwb/NMED-GWQB-PublicNotice.htm

ENCLOSURE 2

Master table listing all comments by DOE/LANS
on the draft Discharge Permit

ENV-DO-13-0326

LAUR-13-29209

U1302039

Date: DEC 12 2013

No.	Permit Section	Description	Comment	Suggested Text Change
1	I p.4	Acronyms - TRU	The draft Discharge Permit contains the following acronym: *TRU – Transuranic waste water* Not all TRU waste is waste water; TRU waste can also be non-liquid waste. TRU is the acronym adopted by the DOE for *transuranic*.	DOE/LANS request the following change: **ACRONYMS**: TRU-~~*Transuranic waste water*~~ *transuranic*
2	II.V p.6	Definitions – Secondary containment	See Enclosure 3, General Comment No. 1	DOE/LANS request the following change: ***V. Secondary containment-*** *a constructed unit,* ~~*independent of the (primary) unit*~~ *or system designed to* ~~*convey, store, treat, or dispose of liquids or semi-liquids, that is designed, constructed and operated to*~~ *prevent any migration of waste streams or accumulated liquid out of the unit or system to the soil, ground water, or surface water at any time. Secondary containment can include, but is not limited to, double-walled pipes, concrete and floors equipped with sumps and alarm systems to detect potential leaks.* ~~*must be:*~~ • ~~*designed, constructed and maintained to surround the primary unit completely;*~~ • ~~*free of cracks, gaps, or fissures;*~~ • ~~*constructed of, or lined with, materials that are compatible with the waste streams to be in contact with the unit or system;*~~ • ~~*placed on a foundation or base capable of withstanding pressure gradients, settling or uplift which may cause failure of the unit or system;*~~ • ~~*equipped with a leak detection system that is designed and operated so that it will detect the failure of the primary containment structure;*~~ • ~~*sloped or designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation within a 24 hour time period; and*~~ • ~~*capable of detecting and collecting releases and accumulated liquids until the collected material can be removed.*~~

09777

No.	Permit Section	Description	Comment	Suggested Text Change
3	II.Z p.7	Definitions-Tank	The definition of tank is incomplete and should include a third category for *above-ground* tanks. All of the RLWTF's tanks are *above-ground* tanks with the exception of the SET which is an *in-ground* tank.	DOE/LANS request the following changes: ***Z. Tank-*** *a stationary device, designed to contain an accumulation of waste water which is constructed primarily of non-earthen materials (e.g., concrete, steel, plastic) which provide structural support. Tanks can be further identified as either an* ***On ground tank*** *meaning a tank that is situated in such a way that the bottom of the tank is on the same level as the adjacent surrounding surface allowing for visual inspection of the vertical walls but not the external tank bottom,* ~~*or*~~ *an* ***In-ground tank*** *meaning a tank constructed or installed so that a portion of the tank wall is situated to any degree within the ground, thereby preventing visual inspection of that portion of the external surface area,* ***or an Above-ground tank*** *meaning a tank that is completely elevated above the adjacent surrounding surface allowing for visual inspection of the vertical walls and the external tank bottom.*
4	II.AA p.7	Definitions-Total Nitrogen	The term *cumulative* is undefined and its intended meaning is not clear. Other discharge permits reviewed with a Total Nitrogen limit do not have *cumulative* in the definition.	DOE/LANS request the following change: ***AA. Total Nitrogen-****The* ~~***cumulative***~~ *sum of total Kjeldahl nitrogen (TKN) and nitrate-nitrogen (NO3-N).*
5	III, Intro, first para. p.8	Joint and Several Liability LANS and DOE	DOE and LANS are *co-permittees* and, as such, are jointly and severally responsible for compliance with the Permit. The Permit is not liable to the permittees. Permit Condition No. 55 already addresses joint and several liability. Recommend deleting these terms. The DOE is owner and operator of LANL and the requested revision is consistent the language used in other NMED and EPA permits.	DOE/LANS request the following change: ***III. Introduction*** *The New Mexico Environment Department (NMED) issues this Discharge Permit (Discharge Permit), DP-1132,* ~~***jointly and severally liable***~~ ***to the United States Department of Energy (DOE) and*** *to Los Alamos National Security, LLC (LANS)* ~~***and the United States Department of Energy (DOE)***~~ *(collectively the Permittees) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978, §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.*

No.	Permit Section	Description	Comment	Suggested Text Change
6	III, Intro, fifth para p.8	Volume Limitation	The draft Discharge Permit at paragraph 5 states, *for the treatment and discharge of up to 40,000 gallons per day (gpd).....* The RLWTF's Discharge Permit Application (Feb-2012) cited a discharge quantity (Section A-7) of 40,000 gpd. The application did not address treatment limitations. Because the RLWTF is a batch-treat/batch-discharge facility it may be necessary at times to treat more than 40,000 gal per day (in a 24-hr period). See Enclosure 3, General Comment No. 2.	DOE/LANS request the following change: ***III. Introduction*** *The Facility, as it pertains to conditions within this Discharge Permit (DP-1132), is a wastewater treatment facility that is authorized to ~~for the treatment and~~ discharge ~~of~~ up to 40,000 gallons per day (gpd), ~~is~~ specifically described in Section V(D)of this Discharge Permit and.....*
7	III, Intro. fifth para p.8	Liquid Waste	Add *liquid waste* to make this section consistent with the definition of *RLWTF: Radioactive Liquid Waste Treatment Facility.* Add *water* to the description of the transuranic waste treatment system to make it explicit that the system treats liquid waste.	DOE/LANS request the following change: ***III. Introduction*** *".....is specifically described in section V(D) of this Discharge Permit and includes the influent collection system, the low-level radioactive liquid waste treatment system, the transuranic waste water treatment system, the secondary treatment system,...*
8	V.B p.9	Authorization to Discharge	See Enclosure 3, General Comment No. 2	DOE/LANS request the following change: ***III. Authorization to Discharge.*** *B. The Permittees are authorized to discharge ~~receive and treat~~ up to 40,000 gpd of low-level and transuranic radioactive industrial waste water using a series of treatment processes as described in Section V(D) of this Discharge Permit in accordance with the Conditions set forth in Section VI of this Discharge Permit.*
9	V.D p.10	TRU Waste	Suggest revising this permit condition to be consistent with the revised acronym for TRU (*transuranic*). The last sentence, *All wastestreams associated with TRU shall be disposed of at an off-site facility permitted to receive TRU waste*, imposes a permit condition regarding where TRU waste streams should be disposed. The management of TRU waste streams will occur under the appropriate regulatory authorities. Further, this requirement is incorrectly located in a section defining the facility.	DOE/LANS request the following change: ***The Transuranic ~~Waste~~ (TRU) Waste Water Treatment System** is defined herein as the influent storage tanks for each form of TRU (acidic and caustic) wastestreams, the associated neutralization unit, pressure filters, the final processing tanks, and other associated TRU wastestream conveyance, storage and treatment components at TA-50. ~~All wastestreams associated with TRU shall be disposed of at an off-site facility permitted to receive TRU waste.~~*

No.	Permit Section	Description	Comment	Suggested Text Change
10	V.D p.10	SET	The description of the Solar Evaporative Tank System (SET) states ….*that receives treated effluent from the RLW.* The SET receives treated effluent from the RLW Treatment System.	DOE/LANS request the following change: ***The Solar Evaporative Tank System (SET)*** *is defined herein as the single concrete tank unit at TA-52 that receives treated effluent from the RLW Treatment System and the conveyance line from TA-50.*
11	All	Electronic Posting	See Enclosure 3, General Comment No.3	DOE/LANS request the addition of the following new permit condition for *Section E, General Terms and Conditions*: ***E. 49. Public Involvement*** *- Within six (6) months after the effective date of the Permit, the Permittees shall post the following information on LANL's Electronic Public Reading Room located at* ***http://eprr.lanl.gov/oppie/service*** *(or as updated), where information on the Discharge Permit will be made available: (a) the Annual Update (VI.A.1); (b) Notices of Changes (VI.A.2); (c) Water Tightness Testing (VI.A.8); (d) Summary Report for Settled Solids (VI.A.9); (e) Freeboard Proposal and Responses (VI.A.12); (f) Emergency Plan (VI.A.16); (g) Installation of Flow Meters (VI.A.17); (h) Quarterly Monitoring Reports (VI.B.20); (i) Soil Moisture Monitoring System for the SET (VI.B.26); (j) Ground Water Flow (VI.B.27); (k) Final Closure (VI.D.44); (l) Post-Closure (VI.D.45); and (m) Termination of the Discharge Plan (VI.D.46). The Permittees agree to voluntarily provide the above-information, and as such, this permit condition is not subject to civil or criminal fines and penalties associated with permit requirements under Permit Sections 52 and 53.*
12	VI.A.1 p.11	Annual Update	The condition requires LANL to produce specific documents annually by February 1 of each year, and to post these documents in LANL's Electronic Reading Room. The draft permit also contains requirements for several other documents – not identified in this section— to be provided annually, by February 1 of each year (and to post in LANL's Electronic Reading Room). To facilitate compliance and ease of implementing the permit, DOE/LANS request that NMED include in the draft permit a new subsection that specifically identifies these documents in one permit condition. Following is suggested language (see redline/strike-out draft permit).	DOE/LANS request the following change: ***ANNUAL UPDATE*** *c. An associated narrative describing each of the systems and treatment units outlined in the flow chart. This narrative shall include the collection system, primary treatment units, secondary treatment units and any systems used in the disposition of any associated waste streams at the Facility. For each unit or system, the narrative shall include: (1) the identification of the unit or system;……(8) the unit or system(s) to which it discharges to; and* ~~*(9) a summary of maintenance or repairs made during the reporting period.*~~ *d. The Annual Update shall also include the following documents to be submitted annually by February 1 of each year.* • *Summary of maintenance and repairs made during the reporting period.* • *Water Tightness Testing results (VI.A.8)* • *Settled Solids measurements (VI.A.9)* • *Ground Water Flow report (VI.A.27)*

No.	Permit Section	Description	Comment	Suggested Text Change
13	VI.A.2 p.11	Notification of Changes	The condition requires written notification of changes in the Facility's collection, treatment or disposal systems which are *beyond the scope of maintenance and repairs*. As drafted it is not clear how to distinguish these types of changes from changes requiring notification under Condition No. 3, *Submittal of plans and specifications* (VI.A.3). Both permit conditions—No. 2 and No. 3— address *process modifications* and *process changes*. DOE/LANS understand that the intent of this permit condition is to capture changes that are (1) not associated with maintenance and repairs, and (2) are not significant changes associated with modifications discussed under VI.A.3. An example of a change under VI.A.2 would be the RLWTF's recent replacement of the aging tubular ultrafilter (TUF) treatment unit with the new microfilter. To avoid confusion, DOE/LANS suggest the following language revisions to clarify the intent of this condition.	DOE/LANS request the following change: ***NOTIFICATION OF CHANGES****-The Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) a written notification of any changes in the Facility's collection, treatment or disposal systems which are* ***not changes associated with "maintenance and repairs" or significant changes required to meet Permit Section VI.A.3, Submittal of Plans and Specifications.*** ~~***are beyond the scope of maintenance and repair***~~*. The notification shall be submitted no less than thirty days prior to the date proposed for implementation.*
14	VI.A.2.g p.12	Notification of Changes, Temporal Scope	This condition states in VI.A.2.g, *intended temporal scope of process change*. The meaning of *temporal scope* is unclear to DOE/LANS.	DOE/LANS request the following change: ***NOTIFICATION OF CHANGES.*** *g. intended* ~~***temporal scope***~~ ***duration*** *of process change (e.g., permanent or limited duration); and*
15	VI.A.2.h p.12	Notification of Changes, Additional Information	This condition states in VI.A.2.h, *any additional information required by NMED*. This section, VI.A.2 contains a specific list of items, *a-g*, that the permittee must provide, at a minimum, in their notification to the NMED. Item *h* is non-specific ("any") and, accordingly, it cannot be comprehensively addressed by the permittee. That is, the permittee cannot satisfy the minimum items required because item *h* is not defined. Further, the permittees cannot agree to meet a future undefined requirement as this condition proposes.	DOE/LANS request the following change: ***NOTIFICATION OF CHANGES.*** ~~***h: any additional information requested by NMED.***~~

No.	Permit Section	Description	Comment	Suggested Text Change
16	VI.A.3 p.12	Submittal of Plans and Specs	DOE/LANS request that this draft permit condition be modified to distinguish process changes required to meet Conditions VI.A.3 and VI.A.2. The additional language is consistent with the language in other discharge permits as well as NMAC 20.6.2.3107.C. Without this language, it is not clear which changes trigger this permit section or the *Notification of Changes* under Condition VI.A.2.	DOE/LANS request the following change: ***SUBMITTAL OF PLANS AND SPECIFICATIONS*** *The Permittees shall not implement any expansion, process modification, or alteration of a system or unit that would result in any significant modification in the discharge of water contaminants or significant modification to ~~changes~~ the intended function, design or capacity for any of the system, units or components of the Facility's collection, treatment or disposal systems without prior written approval by NMED.*
17	VI.A.3 p.12	Submittal of Plans and Specs	This section requires NMED approval prior to implementation of specific changes; however, it does not address what would occur if NMED does not approve such a change. The suggested language addresses this issue and is common in other discharge plans and necessary to provide the facility consistent process and procedure.	DOE/LANS request the following change: ***SUBMITTAL OF PLANS AND SPECIFICATIONS*** *NMED will provide such approval only if it finds that the Permittees have submitted the required elements listed herein in sufficient detail to demonstrate that the unit or system is designed and constructed to minimize the possibility of an unauthorized release of water contaminants which could directly or indirectly impact ground water quality or pose a threat to human health. Should NMED determine that the proposed changes do not conform to activities authorized by this Discharge Permit and/or constitute a modification of the Permittees discharge plan, NMED will inform the Permittees that a Discharge Permit modification is required in order to proceed with the proposed change.*
18	VI.A.3.k p.13	Submittal of Plans and Specs	This condition sets forth design specifications for leak detection systems based on NMED's Hazardous Waste regulations under Subpart J (264.193 (c)(3)), which are not a requirement of the NMWQCC Regulations. However, Subpart J explicitly providences that leak detection systems can be designed and operated to detect the failure of either primary or secondary containment, or the presences of any release of any accumulated liquid in secondary containment systems within 24 hrs of the initial release, or at the earliest practicable time of the permittees can demonstrate that the existing detection technologies or site conditions will not allow detection of a release within 24 hrs. DOE/LANS cannot comply with this condition absent the added provision which is critical to address the potential that site conditions or technologies prevent detection of a release within 24 hrs. DOE/LANS would request that the permit be revised to include this additional language to address potential uncertainties with this stringent condition.	DOE/LANS request the following change: ***SUBMITTAL OF PLANS AND SPECIFICATIONS*** *k. design specifications for leak detection systems associated with systems designed to convey, store, treat, or dispose of liquid or semi-liquid waste streams, which demonstrate the capability of detecting the failure of either primary or secondary containment or the presence of any release of any accumulated liquid in the secondary containment system within 24 hours of initial release; or at the earliest practicable time if the permittees can demonstrate that the existing detection technologies or site conditions will not allow detection of a release within 24 hours.* *m. design specifications for all units or systems designed to convey, store, treat, or dispose of liquid or semi-liquid waste streams, which demonstrate the ability to remove liquids and semi-liquids from the area of containment within 24 hours of a release; or at the earliest practicable time if the permittees can demonstrate that the existing detection technologies or site conditions will not allow detection of a release within 24 hours.*

No.	Permit Section	Description	Comment	Suggested Text Change
19	VI.A.6 p. 14	Signs	This condition establishes signage requirements. DOE/LANS are not opposed to a sign at the main entrance to the to the RLWTF and the SET but questions the need for signs at every other entrance to active portions of the facility given that access to both TA-50 and TA-52 are restricted to LANL badge holders only. Standard sign language at LANL is, *Authorized Personnel Only* instead of *Unauthorized Personnel Prohibited*. Also, bilingual signage is not the standard at LANL.	DOE/LANS request the following change: ***SIGNS***- *The Permittees shall post and maintain signs at ~~each~~ the entrance to the TA-50 RWLTF and the TA-52 SET ~~active portions of the Facility and at other locations, in sufficient numbers to be seen from any approach to the active portions of the Facility~~ stating that ~~Unauthorized Personnel is prohibited~~ access is limited to Authorized Personnel only. All signs shall be ~~posted in English and Spanish and be~~ legible from a distance of at least 25 feet.*
20	VI.A.8 p.15	Water Tightness Testing	This condition requires a visual and quantitative assessment of the unit or system that does not have "secondary containment" for water tightness. As drafted, below-ground pipelines without secondary containment must be assessed visually under this condition. However, conducting a visual assessment for below-ground pipelines is not possible, and therefore, the permittees suggest that this be limited to an inspection of the ground surface for evidence of a leak. The quantifiable assessment, as proposed, is a technically supportable test used for below-ground pipelines. For example, utilities and other industries use a quantifiable test to ascertain whether below-ground pipes are leaking water or gas. LANL's Master Specification for Testing Piping Systems contains specific procedures and testing specifications for pressure testing—both hydrostatic and pneumatic—all types of pipelines including, but not limited to, potable water, non-potable water, and fire protection water. Testing specifications are adopted from the American Society of Mechanical Engineers (ASME) and the International Association of Plumbing and Mechanical Officials' Uniform Plumbing Code (IAPMO UPC).	DOE/LANS request the following change: ***WATER TIGHTNESS TESTING***-*Within 540 days following the effective date of this Discharge Permit (by DATE), and every 540 days thereafter, the Permittees shall demonstrate that each unit and system intended to convey, store, treat or dispose of a liquid or semi-liquid waste stream without secondary containment is not leaking and is otherwise fit for use. To make the demonstration, the Permittees shall conduct both a visual test, for those units and systems that are above-ground and visually inspectable, and a quantifiable test.* *For units and systems that are above-ground and visually inspectable, the visual assessment shall be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. If necessary, the Permittees shall remove the stored waste from the unit or system to allow the condition of internal surfaces to be assessed.*

No.	Permit Section	Description	Comment	Suggested Text Change
21	VI.A.10 p.17	Facility Inspections	This condition states, *The permittees shall inspect for malfunctions, deteriorations, operator errors, and discharges which may be causing, or may lead to, an unauthorized release to the environment or pose a threat to human health.* The draft Discharge Permit defines in *a-d* the specific units/systems and their inspection frequency. Inspecting for *operator errors* is not consistent with the scope of this condition: inspecting units and systems. Identifying operator errors cannot be achieved by inspecting units and systems but through other means. Inspecting units and systems for *discharges* is not the correct scale; rather, inspections should be directed towards the precursors of discharges: leaks. The requirement to inspect for *operator errors* and *discharges* is not common in other discharge permits reviewed, including DP-857.	DOE/LANS request the following changes: ***FACILITY INSPECTIONS-****The Permittees shall inspect the Facility for malfunctions, deterioration, and* ***leaks*** ~~***operator errors and discharges***~~ *which may be causing, or may lead to, an unauthorized release to the environment or pose a threat to human health.*
22	VI.A.11 p. 18	Maintenance and Repairs	Condition No. 18 requires the submittal of *…a report describing the maintenance and repair activities* as part of the quarterly monitoring report. In addition, Condition No. 1 requires the submittal of a *summary of maintenance or repairs made during the reporting period* in the annual report. The difference between *a summary of* and *a report describing* was not identified in the draft Discharge Permit and is not clear to DOE/LANS. DOE/LANS request that the quarterly monitoring report contain a report that both *summarizes and describes* the maintenance and repairs made during the quarter. The annual report would contain copies of the four quarterly maintenance and repair reports from that calendar year.	DOE/LANS request the following change: ***MAINTENANCE AND REPAIR****-The Permittees shall maintain the function and structural integrity of the Facility at all times except during maintenance or repair. . . . The Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) a report* ***which summarizes and*** *describes* ~~***ing***~~ *the maintenance and repair activities performed on the Facility as part of the quarterly monitoring reports.*

<table>
<tr><th>No.</th><th>Permit Section</th><th>Description</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td>23</td><td>VI.A.13.a Table 1 p.19</td><td>Effluent Limits: Outfall 051</td><td>In Table 1, Effluent Quality Limits for Discharges to Outfall 051, the limit for perchlorate is 0.011 mg/L.

The source of all numeric limits cited in the above-referenced Table 1 is 20.6.2.3103 NMAC with the exception of perchlorate because perchlorate is not a groundwater contaminant regulated under 20.6.2.3103 NMAC. Perchlorate is a listed toxic pollutant without a numeric limit under 20.6.2.7.WW NMAC. NMED does not cite in Condition VI.A.13.a the source of the numeric limit for perchlorate of 0.011 mg/L.

Draft Discharge Permit Condition VI.A.13.b states that the numeric limit for toxic pollutants listed in 20.6.2.7.WW NMAC that are not listed in Table 1 shall be the concentration listed in Table A-1 of NMED Risk Assessment Guidance for Site Investigation and Remediation. The perchlorate limit in Table A-1 (2012 edition) is 0.0256 mg/L.

The working draft Discharge Permit issued by the NMED for DP-857 contains a perchlorate limit of 0.026 mg/L (26 µg/L). The correct perchlorate limit should be 0.0256 mg/L.</td><td>DOE/LANS request the following change:

Table 1. Effluent Quality Limits for Discharges to Outfall 051
<table><tr><th>Inorganic Chemicals:</th><th>CAS#</th><th>mg/L</th></tr><tr><td>Nickel (dissolved)</td><td>7440-02-0</td><td>0.2</td></tr><tr><td>Perchlorate (total)</td><td>14797-73-0</td><td><s>0.011</s> 0.0256</td></tr><tr><td>pH (total)</td><td></td><td>6 – 9</td></tr></table></td></tr>
<tr><td>24</td><td>VI.A.13 p.20

VI.A.14 p.21</td><td>Effluent Limits: Outfall 051

Effluent Limits: MES and SET</td><td>The draft Discharge Permit contains a Total Nitrogen limit of 15 mg/L for Outfall 051 and a NO_3-N limit of 10 mg/L for the MES and SET. With its current treatment capability the RLWTF cannot consistently meet the above-referenced nitrogen limits. Meeting these limits will require the installation of new treatment units.

In April 2013 DOE/LANS initiated the evaluation and design of treatment equipment that would enable compliance with the draft permit's nitrogen limits. This effort has the remaining steps to complete before the treatment unit(s) is operational: Funding, Procurement, Installation, Operating Procedures, and Startup. These remaining steps will not be complete until September 30, 2015.</td><td>DOE/LANS request the following change:

Until the new treatment unit(s) at the RLWTF are operational on or before September 30, 2015, the following Total Nitrogen effluent limit shall be effective for discharges to Outfall 051:

• Daily Maximum: 45 mg/L
• Quarterly Average: 15 mg/L

Until the new treatment unit(s) at the RLWTF are operational on or before September 30, 2015, the following NO_3-N effluent limit shall be effective for discharges to the MES and SET:

• Daily Maximum: 30 mg/L
• Quarterly Average: 10 mg/L</td></tr>
</table>

<table>
<tr><th>No.</th><th>Permit Section</th><th>Description</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td>25</td><td>VI.A.13.b p.20</td><td>Effluent Limits: Outfall 051</td><td>Condition 13b makes a reference to Table A-1 of NMED, Risk Assessment Guidance for Site Investigation and Remediation (most recent edition) but does not provide a copy of Table of A-1.

The working Draft Discharge Permit DP-857 contains a table listing all numeric limits for toxic pollutants (20.6.2.7WW NMAC); the draft Discharge Permit for DP-1132 provides no such table.

The inclusion in this discharge permit of a similar table listing the numeric limits for toxic pollutants—as was done for Regulation 3103 water contaminants in Table 1—would formally document the limits.</td><td>DOE/LANS request the following change:

• See Enclosure 4. Add Table 1.1 to Condition No. 13b.</td></tr>
<tr><td>26</td><td>VI.A.14 Table 2 p.20</td><td>Effluent Limits: Outfall 051</td><td>In Table 2, Effluent Quality Limits for Discharges to MES and SET the limit for perchlorate is 0.011 mg/L (11 µg/L).

See Enclosure 2, Page 9, Comment No. 23.

The perchlorate limit should be 0.0256 mg/L.</td><td>DOE/LANS request the following change:

Table 2. Effluent Quality Limits for Discharges to the MES and SET
<table><tr><th>Inorganic Chemicals:</th><th>CAS#</th><th>mg/L</th></tr><tr><td>Nickel (dissolved)</td><td>7440-02-0</td><td>0.2</td></tr><tr><td>Perchlorate (total)</td><td>04797-73-0</td><td>~~0.011~~ 0.0256</td></tr><tr><td>pH (total)</td><td></td><td>6 – 9</td></tr></table></td></tr>
<tr><td>27</td><td>VI.A.15.c p.21</td><td>Personnel Qualification</td><td>Requirement c of Condition No. 15, Personnel Qualifications, requires operators to be competent in ….repairing or replacing automatic waste feed cut-off systems….

Automatic waste feed cut-off systems (AWFCO) are components of hazardous waste combustors and are not components of the RLWTF treatment system.</td><td>DOE/LANS request the following change:

PERSONNEL QUALIFICATIONS.
~~c. repairing or replacing automatic waste feed cut-off systems.~~</td></tr>
</table>

No.	Permit Section	Description	Comment	Suggested Text Change
28	VI.A.16 p.22	Emergency Plan	See Enclosure 3, General Comment No. 4	DOE/LANS request the following change: ~~***16. EMERGENCY PLAN-The Permittees shall keep an emergency response plan at the Facility at all times. At a minimum, the plan shall include the following:***~~ ~~a. *Actions Facility personnel must take in response to fires, explosions or any unplanned sudden or non-sudden release of a water contaminant from the Facility to the environment.*~~ ~~b. *A spill prevention and response plan to address all unauthorized releases to the environment or those that pose a threat to human health, chronic or acute.*~~ ~~c. *Communications and collaboration with local, state and federal emergency response personnel.*~~ ~~d. *Names, addresses and phone numbers for all persons qualified to act as an emergency coordinator.*~~ ~~e. *A list of all emergency equipment at the Facility that may be utilized in the event of an emergency, its intended function and physical location.*~~ ~~f. *An evacuation plan for all Facility personnel which describes signals to be used to notify personnel of an evacuation, routes to evacuated the Facility and alternate evacuation routes.*~~ ~~*The emergency response plan shall be reviewed, and updated as necessary, by the Permittees on no less than an annual basis or in the event the plan fails during an emergency, the Facility changes design, construction, or accessibility, key personnel changes or the list of equipment changes. The Permittees shall submit a written summary of the plan and any amendments to NMED no more than 30 days following finalization of the amended plan. The Permittees' written summary shall be provided to the Los Alamos County Emergency Management Coordinator, Los Alamos Fire Department, Los Alamos County Police, Los Alamos Medical Center, New Mexico's Department of Homeland Security and Emergency Management (DHSEM), Pueblo of San Ildefonso, Pueblo of Santa Clara, Pueblo of Jemez and Pueblo of Cochiti, and shall be posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).*~~

No.	Permit Section	Description	Comment	Suggested Text Change
29	VI.A.17 p.22	Installation of Flow Meters	The draft Discharge Permit requires individual flow meters for the Outfall 051 and the SET (17b & 17d). DOE/LANS propose that one meter be shared for discharges to Outfall 051 and the SET. Detailed Operating Procedures would require operators to record in log books the volume discharged to each system. Log books would be available for inspection by NMED.	DOE/LANS request the following change: ***INSTALLATION OF FLOW METERS****-Within 180 days following the effective date of this Discharge Permit, (by DATE), the Permittees shall install the following flow meters:* *a. One flow meter to be installed on the RLW influent line to the Facility at a location that will capture and measure all influent to the Facility including waste water conveyed to the Facility by alternative methods (e.g. truck).* *b. One flow meter to be installed on the effluent line to the SET* ***and to Outfall 051*** *at a location that will capture and measure all discharges of treated water to the SET* ***and Outfall 051. Permittees shall record in a discharge log book the volume discharged to each respective location.*** *c. One flow meter to be installed on the effluent line to the MES at a location that will capture and measure all discharges of treated water to the MES.* ~~***d. One flow meter to be installed on the discharge line to Outfall 051 at a location that will capture and measure all effluent discharged to Outfall 051.***~~
30	VI.A.18 p.23	Calibration of Flow Meters	The draft Discharge Permit contains the following requirement: **CALIBRATION OF FLOW METERS**-*All flow meters shall be capable of having their accuracy ascertained under actual working (field) conditions.* Calibrations should only apply to those meters referenced in the Discharge Permit.	DOE/LANS request the following change: ***CALIBRATION OF FLOW METERS****-All flow meters* ***referenced in this Discharge Permit (Condition No. 17)*** *shall be capable of having their accuracy ascertained under actual (field) working conditions.*
31	VI.B.28 p.29	Ground Water Monitoring	The draft Discharge Permit requires quarterly sampling at Mortandad Canyon alluvial monitoring well MCO-3. In September 2013 flood flows in Mortandad Canyon destroyed alluvial monitoring well MCO-3; the concrete well pad and well casing were damaged beyond repair. MCO-3 is no longer a functioning monitoring well and should be removed from the ground water monitoring plan. DOE/LANS propose Mortandad Canyon alluvial monitoring well MCO-4B as a replacement to MCO-3. MCO-4B was proposed as an alluvial ground water monitoring well downgradient of NPDES Outfall 051 in the February 2012 Discharge Permit Application. The application's Appendix D provided ground water quality data for MCO-4B and Appendix E provided a well log and construction diagram for MCO-4B.	DOE/LANS request the following change: ***GROUND WATER MONITORING****-The Permittees shall collect ground water samples from the following ground water monitoring wells on a quarterly basis and analyze the samples for TKN, NO_3-N, TDS, Cl, F and perchlorate.* *a.* ***MCO-4B*** ~~***MCO-3-***~~ *previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.* *The Permittees shall collect ground water samples from the following ground water monitoring wells on an annual basis and analyze the samples for all water contaminants listed in 20.6.2.3103 NMAC and all toxic pollutants listed in 20.6.2.7.WW.* *a.* ***MCO-4B*** ~~***MCO-3-***~~ *previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.*

No.	Permit Section	Description	Comment	Suggested Text Change
32	VI.B.28 p.29	Ground Water Monitoring	The draft Discharge Permit identifies a procedure for collecting ground water samples. Steps *b & d* are not consistent with LANL's Standard Operating Procedure (SOP) for ground water sampling *b. Measure the total depth of the monitoring well to the nearest hundredth (0.01) of a foot.* LANL does not measure the total depth of a well at every sampling event but only when the pump is pulled for maintenance. The referenced wells have dedicated pumps; it is not physically possible to measure the total depth of the well with the pump installed. *d. Purge three well volumes of water from the monitoring well prior to sampling, using an adequate pumping system.* LANL does not collect three well (casing) volumes when sampling alluvial wells, only when sampling intermediate and regional wells. Alluvial wells often go dry before three casing volumes can be removed so the well is sampled after one casing volume has been purged and when field parameters are stable.	DOE/LANS request the following change: ***GROUND WATER MONITORING.*** *Sampling shall be done in accordance with the methods authorized in this Discharge Permit and using the following procedure:* *a. Measure the ground-water surface elevation, to the nearest hundredth (0.01) of a foot, from the top of the casing, each time ground water is sampled.* ~~*b. Measure the total depth of the monitoring well to the nearest hundredth (0.01) of a foot.*~~ *c. Calculate total volume of water within the monitoring well* ***using the most recent total depth measurement****.* *d.* ***For intermediate and regional aquifer wells,*** *purge three well volumes of water from the monitoring well prior to sampling, using an adequate pumping system.* ***For alluvial wells, purge well for a minimum of one well volume and until field parameters stabilize.*** *e. Collect samples from the well using appropriate methods to avoid cross-contamination of the samples and sources.* *f. Prepare the Chain-of-Custody, preserve the sample and transport samples in accordance with methods authorized in this Discharge Permit.* *g. Samples shall be analyzed by an analytical laboratory using methods authorized in this Discharge Permit.*
33	VI.C.34 p.34	Effluent Exceedance	Condition No. 34 requires the *analysis* of a subsequent sample (ie, confirmation sample) within 24 hrs. DOE/LANS cannot collect, ship to our off-site analytical laboratory for analysis, and receive the analytical results within 24-hrs; the quickest analytical turn-around-time (TAT) that can be obtained is 5 days.	DOE/LANS request the following change: ***EFFLUENT EXCEEDANCE*** *In the event that an analytical result of an effluent sample indicate an exceedance for any of the effluent limits set forth in this Discharge Permit, the Permittees shall* ***collect*** ~~***analyze***~~ *a subsequent sample for the particular analyte that was in exceedance within 24 hours following receipt of analytical results indicating the exceedance.*

No.	Permit Section	Description	Comment	Suggested Text Change
34	VI.C.34 p.34	Effluent Exceedance	See Enclosure 3, General Comment No. 5	DOE/LANS request the following change: ***EFFLUENT EXCEEDANCE-****In the event that analytical result of an effluent sample indicate an exceedance for any of the effluent limits set forth by this Discharge Permit, the Permittees shall analyze a subsequent sample for the particular analyte that was in exceedance within 24 hours following receipt of analytical results indicating the exceedance. In the event the analytical results of the subsequent sample confirm that the maximum limitation has been exceeded (i.e., confirmed exceedance), the Permittees shall take the following actions:* *Within 24 hours of becoming aware of a confirmed exceedance, the Permittees shall:* ~~*a. cease discharges to the system that limits have been exceeded with the exception of the MES to which a confirmed exceedance shall not require immediate cessation;*~~ *b. notify the NMED Ground Water Quality Bureau that an effluent limit set forth in this Discharge Permit has been confirmed to be in exceedance; and* *c. increase the frequency of effluent sampling to adequately establish quality of all discharges by batch.*
35	VI.D.41 p.40	Cessation of Operation of Specific Units	See Enclosure 3, General Comment No. 6	DOE/LANS request the following change: ***CESSATION OF OPERATION OF SPECIFIC UNITS-*** *Within* ~~*60*~~ *180 days of the effective date of this Discharge Permit (by DATE), the Permittees shall permanently cease operation of the following units:* *a. the 75,000 gallon concrete influent storage tank (75K tank);* *b. the 100,000 gallon steel influent storage tank (100K tank);* *c. the two 26,000 gallon concrete clarifiers located within Building 1 of TA-50;* *d. the two 25,000 gallon concrete effluent storage tanks (WM2-N, WM2-S); and* *e. the gravity filter located within Building 1 of TA-50.* *Upon the cessation of operation of these specific units, the Permittees shall implement the requirements for stabilization of the individual units, systems and components in accordance with this Discharge Permit.*

No.	Permit Section	Description	Comment	Suggested Text Change
36	VI.D.42 p.41	Stabilization of Individual Units & Systems	The draft Discharge Permit requires *within 30 days following completion of all interim measures, actions and controls, the permittees shall submit to NMED for approval a final written report....* 30 days is an insufficient period of time to assemble all of the documentation needed for the final report and obtain all of the required internal technical and management reviews.	DOE/LANS request the following change: ***STABILIZATION OF INDIVIDUAL UNITS AND SYSTEMS*** *Within 90 days from the permanent cessation of operation of a unit or system, the Permittees shall submit to NMED for approval a written work plan for the stabilization of the unit or system for which operation has ceased. The work plan shall identify steps necessary to ensure that the unit or system can no longer receive a discharge and that no further releases of water contaminants occur as a result of the unit or system. At a minimum, the work plan shall include the following: a-g* *Upon NMED approval of the work plan, the Permittees shall implement the plan according to the approved schedule.* *Within ~~30~~ 60 days following the completion of all interim measures, actions and controls, the Permittees shall submit to NMED for approval a final written report on the actions taken to implement the partial closure.*
37	VI.D.43 p.41	Final Closure Plan	See Enclosure 3, General Comment No. 7	DOE/LANS request the following change: See Enclosure 5, redline/strikeout of the September 10, 2013, draft Discharge Permit.
38	VI.E.51	Extensions of Time	The draft permit contains several time deadlines for obligations that include submittal of documents and demonstrations (*See e.g.*, draft Permit Condition Nos. 4, 7, 8, 17, 18, 26, 35, 38, 41, 43: construction report, verification of secondary containment, water tightness, installation of flow meters, calibration of flow meters, soil moisture monitoring, closure and final closure plans). Under the draft permit, the failure to meet a deadline is an enforceable non-compliance that is subject to civil penalties. The Permittees request that the final permit include a new condition to address the potential that an obligation under the permit may be delayed for "good cause" and that an extension of time is warranted and necessary. (continued on Page 16)	DOE/LANS request the following new condition be added to the draft Discharge Permit: *51. EXTENSIONS OF TIME* *The Permittees may seek an extension of time in which to perform an obligation under this Permit, for good cause, by sending a written request for extension of time that states the length of the requested extension and describes the basis for the request. The Department will respond in writing to any request for extension within fourteen (14) days following receipt of the request. If the Department denies the request for extension, it will state the reasons for the denial.*

No.	Permit Section	Description	Comment	Suggested Text Change
38	VI.E.51	Extensions of Time	This mechanism addresses the potential that an obligation may be delayed for "good cause," including natural disasters, weather delays, unanticipated breakage to equipment and other events that cannot be anticipated. As typical of language in other permits, the language requires the Permittees to provide a written request for an extension stating the reasons, and the length of the requested extension, along with a revised schedule if applicable. Further, the "good cause" standard is broad because the circumstances constituting "good cause" are fact-specific and difficult to precisely define. In any event, NMED-GWQB has authority to approve, and if it does not approve must state the reasons for the denial.	

ENCLOSURE 3

General Comments on the draft Discharge Permit

ENV-DO-13-0326

LAUR-13-29209

U1302039

Date: DEC 12 2013

1

General Comment No. 1. Permit Condition II.V, Page 6 (Definition of Secondary Containment)

This permit condition defines "secondary containment" by incorporating (verbatim) the definition of "secondary containment" as that term is used under the New Mexico Hazardous Waste Regulations (NMAC 20.4.2.1 *et seq.*) and EPA rules under the Resource Conservation and Recovery Act of 1976 ("RCRA", 42 U.S.C. § 6901 *et seq.*) at 40 C.F.R. § 264.193. This proposed condition is inappropriate for at least four reasons. First, the RLWTF is a wastewater treatment unit which is exempt from the requirements of 40 C.F.R. § 264.193 and 20.4.2.1 NMAC. Second, neither the Water Quality Act, NMSA 1978 §§ 74-6-1 to -17 (the "WQA"), nor its implementing regulations authorize imposition of this condition. Third, there is no evidence that the proposed condition satisfies the WQA's mandate that any proposed condition be both reasonable and necessary to ensure compliance with the WQA and applicable regulations considering site-specific conditions. Fourth, the proposed condition is infeasible and economically impractical to the extent that it would require retrofitting an existing facility. The proposed condition should be revised to recognize the existing leak prevention and detection provisions described in the permit application and which conform with NMED's regulations.

First, the proposed condition is inappropriate because the RLWTF is a wastewater treatment unit as defined by 40 C.F.R. § 264.1(g)(6) and is thus exempt from RCRA requirements, including RCRA's definition of "secondary containment." NMED's attempt to impose inapplicable RCRA requirements is not appropriate. To qualify as an exempt wastewater treatment unit, a facility must (1) be a wastewater treatment facility subject to regulation under Clean Water Act (CWA) §§ 402 or 307(b), (2) receive and treat or store an influent wastewater which is hazardous waste as defined in 40 C.F.R. § 261.3, and (3) meet the definition of a "tank" or "tank system" in 40 C.F.R. § 260.10. The RLWTF satisfies each of those conditions. The RLWTF is regulated under CWA § 402 by EPA pursuant to NPDES Permit No. NM0028355, receives and treats a small amount of hazardous wastewater, and constitutes a "tank system" as defined in 40 C.F.R. § 260.10. The NPDES permit for the RLWTF contains water quality standards that are more stringent than drinking water standards under the federal Safe Drinking Water Act. NMED also issued a Section 401 State Certification for that NPDES permit to ensure that the effluent meets state water quality standards. Further, industrial wastewater discharges that are point sources regulated under § 402 of the CWA are excluded from RCRA's definition of "solid waste" under 40 C.F.R. § 261.4(a)(2). EPA exempted wastewater treatment facilities that met RCRA's waste water treatment unit exemption, like RLWTF, to avoid dual regulation of wastewater units regulated under § 402 of the CWA. *See* Faxback No. 13526 (1993).

Although the RLWTF is exempt from RCRA's secondary containment requirements, the draft permit defines "secondary containment" by incorporating verbatim RCRA rules for "secondary containment" at 40 C.F.R § 264.193. RCRA contains very prescriptive requirements, which NMED-GWQB is attempting to inject in the draft permit definition, to determine if tank and tank systems meet "secondary containment" requirements. For example, the RCRA secondary containment requirements mandate that "tanks" and "tank systems" are "sloped or designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation within a 24-hour time period; designed to be free of cracks, gaps, or fissures; or designed, constructed and maintained to surround the primary unit completely." Because it

is an exempt wastewater treatment unit, the existing RLWTF was not constructed to meet the RCRA requirements. The facility nonetheless has multiple design features to prevent leaks and to detect and collect releases if they should occur. For instance, RLWTF secondary containments are designed to collect and hold accumulated liquids until the collected liquids can be removed but are not sloped to drain and remove liquids within 24 hours.

NMED's attempt to impose the stringent RCRA standards on an existing, exempt facility ignores that RCRA rules themselves which allow EPA and States to vary these requirements for existing facilities by use of alternative design and operating practices so long as an applicant can demonstrate that secondary containment prevents the migration of hazardous waste or hazardous constituents into the ground water or surface water (*See* 40 C.F.R. § 264.193(g)). The existing design features of the RLWTF and those described in the discharge permit application adequately ensure that the RLWTF's tanks and tank systems will not leak and are capable of detecting and collecting releases of wastewater and accumulated liquids to prevent migration of constituents to ground or surface water. Accordingly, because the RLWTF is exempt from the RCRA requirements, and because the containment features described in the permit application provide adequate protection, there is no basis for NMED to seek to impose RCRA requirements on the RLWTF under the guise of a different regulatory program.

Second, the WQA and its implementing regulations do not authorize NMED's attempt to engraft RCRA regulatory requirements onto a discharge permit. The NMED-GWQB does not provide a citation to support the incorporation of RCRA's definition of "secondary containment." Instead, the NMED-GWB cites to the more generic provisions of 20.6.2.3106.C and 20.6.2.3107.A which simply authorize conditions addressing "procedures for detecting failure of the discharge system" and "contingency plans to cope with failure of the discharge permit or system." NMED's rules at 20.6.2.3106.C NMAC or 20.6.2.3107.A NMAC do not provide any authority or require that wastewater treatment facilities or any facility regulated under ground water rules (*e.g.*, mining, dairy, industrial wastewater treatment facilities) meet RCRA "secondary containment" with "leak detection systems" as described in RLWTF's draft permit. Instead, those regulations require that tanks and tank systems are water tight, and that a permittee undertake inspection, routine maintenance, and installation of alarm systems to minimize the risk of leaks. These kinds of measures are already incorporated into the design of the RLWTF.

Third, the proposed condition would still need to be revised or eliminated because NMED-GWQB has not, and cannot, satisfy its burden to show that the proposed condition is both reasonable and necessary considering site-specific conditions. Under Section 74-6-5.D of the Water Quality Act, the agency "has the burden of showing that each condition is reasonable and necessary to ensure compliance with the WQA and applicable regulations, considering site-specific conditions." The agency has failed to make such a showing here.

And fourth, the proposed condition is unreasonable given that, as described in the permit application, the existing RLWTF tanks and tank systems are designed to ensure that they are water tight and are equipped with secondary containment-like features that include, among other things, collection systems with double-walled pipes; concrete floors and vaults, with sumps and leak detection sensors; and concrete tanks with liners that are equipped with alarms. The following describes these systems (Supplemental Information, Discharge Permit Application DP-1132, August 2012, Enclosure 3, Table 2.0):

Collection system: Collection system piping is essentially an underground pipeline within a pipeline. Primary piping is six- or eight-inch-diameter polyethylene encased within 10- or 12-inch polyethylene secondary piping. The primary piping transitions to stainless steel in each of the 62 underground vaults, then back to polyethylene. Underground vaults are equipped with leak detection sensors that are linked electronically to the RLWTF control room.

Building 1: The concrete floor at TA-50-001 serves as secondary containment for all of the treatment units, vessels, and process equipment located within the main RLWTF.

WMRM: The Waste Management and Risk Mitigation (WMRM) facility (Building 50-250) houses six influent storage tanks with a capacity of 50,000 gallons each. Influent is received at WMRM by an underground, double-walled pipe. The concrete basement houses the six tanks and acts as secondary containment. A sump located in the floor of the basement is outfitted with a leak detection sensor that is linked electronically to the RLWTF control room.

SET: The Solar Evaporative Tanks (SET) at TA-52 have concrete walls and a double synthetic liner with leak detection sensors located between the primary and secondary liners.

MES: The Mechanical Evaporator System (MES) is located on an asphalt pad outside of TA-50-001. Secondary containment is provided by a hypalon liner over asphalt.

For all these reasons, DOE/LANS do not believe that it is appropriate or technically supportable to include in the final discharge permit language that has been taken directly from the RCRA rules and that are not applicable to RLWTF. DOE/LANS understand that the intent of the proposed language is to ensure that RLWTF's tanks and tank systems will not leak, and are capable of detecting and collecting releases of waste water and accumulated liquids until the collected material can be removed. To address this issue, DOE/LANS have suggested revised language that meets this intent:

II. V. Secondary containment- *a constructed unit, ~~independent of the (primary) unit~~ or system designed to ~~convey, store, treat, or dispose of liquids or semi-liquids, that is designed, constructed and operated to~~ prevent any migration of wastewater out of the unit or system to the soil, ground water, or surface water at any time. Secondary containment can include, but is not limited to, double-walled pipes, concrete and floors equipped with sumps and alarms systems to detect potential leaks. ~~must be:~~*

- ~~*designed, constructed and maintained to surround the primary unit completely;*~~
- ~~*free of cracks, gaps, or fissures;*~~
- ~~*constructed of, or lined with, materials that are compatible with the waste streams to be in contact with the unit or system;*~~
- ~~*placed on a foundation or base capable of withstanding pressure gradients, settling or uplift which may cause failure of the unit or system;*~~
- ~~*equipped with a leak detection system that is designed and operated so that it will detect the failure of the primary containment structure;*~~
- ~~*sloped or designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation within a 24 hour time period; and*~~
- ~~*capable of detecting and collecting releases and accumulated liquids until the collected material can be removed.*~~

2

General Comment No. 2. Permit Condition V.B, Page 9 (Authorization to Discharge)

Permit condition V.B states that "[p]ermittees are authorized to receive and treat up to 40,000 gallons per day (gpd) of low-level and transuranic radioactive industrial waste water ...." As drafted, the permit condition purports to limit the ability of RLWTF to receive and treat wastewater to the same volume it will discharge (e.g., 40,000 gpd). For the reasons stated below, DOE/LANS request that the terms "receive and treat" be deleted and revised to state that "[p]ermittees are authorized to discharge up to 40,000 gpd...." (See also specific comment no. 7 related to a volume limitation under permit condition III, Intro., fifth paragraph).

The discharge permit application submitted by DOE/LANS and NMED's standard application form does not request or require any information regarding the volume of water to be received or treated at RLWTF or a wastewater treatment facility. Indeed, NMED's ground water quality rules and the discharge permit application only require the applicant to provide an "*estimated volume of the discharge*" (*See* 20.6.2.103.A.1 and Part A, page 2 of the application). That is because NMED rules for discharge permits regulate the "discharge" of wastewater and do not regulate the volume received or treated at a wastewater treatment facility. As stated in the discharge permit application, RLWTF is a batch treatment facility and seeks "to discharge" an estimated volume of up to 40,000 gpd of treated effluent.

RLWTF, including the new WMRM tanks, is designed to receive more wastewater than 40,000 gpd. In fact, the six WRWM tanks each hold 50,000 gallons of wastewater and were designed and installed to receive wastewater from emergencies (e.g., fire suppression water). Further, the draft permit application's discharge limitation of 40,000 gpd does not reflect the amount of liquid waste it will treat. As a batch treatment facility, it may be necessary for RLWTF to treat more than 40,000 gpd in a 24-hour period. For these reasons, a volume limitation on receipt and treatment of wastewater will substantially and adversely impact operations and is not authorized by applicable NMED regulations.

DOE/LANS request the following change:

III. Authorization to Discharge.
B. The Permittees are authorized to discharge ~~receive and treat~~ up to 40,000 gpd of low-level and transuranic radioactive industrial waste water using a series of treatment processes as described in Section V(D) of this Discharge Permit in accordance with the Conditions set forth in Section VI of this Discharge Permit.

General Comment No. 3. Permit Condition VI. A.1 (Electronic Posting)

This condition imposes a requirement to post on LANL's Electronic Public Reading room a multitude of documents (approximately 43) as enforceable permit conditions. As an initial matter, NMED has no authority under either the WQA or its implementing regulations to impose such a permit condition. Even if the WQA provided authority to impose such a condition, the condition is unreasonable because, among other reasons, it could subject the permittee to significant fines and penalties (up to $15,000 per day under Section 74-6-10.C of the WQA, and permit condition No. 52) for failure to post (or timely post) a single document. DOE/LANS also recognize that such a permit requirement is unprecedented under the New Mexico Ground Water Regulations. Although DOE/LANS support public involvement, it cannot agree to undertake new requirements without careful review and consideration of existing resources, cost, and practicality.

DOE/LANS have carefully reviewed the type of documents and assessed existing staff level and functions to determine whether this additional work can be implemented. Some categories of documents require significant resources (in cost and human resources) to post and at this time would be unduly burdensome and difficult to post. It is costly and resource-intensive to ensure correct posting of documents; maintain the electronic reading room, and assure proper oversight of this task. For these reasons, DOE/LANS cannot agree to post all of the documents to the Electronic Public Reading Room. As summarized below, DOE/LANS can agree to voluntarily post those documents on the Electronic Public Reading Room web site that would not impose significant financial burden and cost to implement. Further, DOE/LANS could only agree to post certain documents identified below on the explicit condition that the requirement is voluntary and not subject to civil fines and enforcement at $15,000 per day for non-compliance.

DOE/LANS also believe it is important and will facilitate implementation and compliance to explicitly identify the specific documents to be produced in one permit condition. For this reason, and as discussed below, DOE/LANS have identified these documents under Section IV.A.1. Further, DOE/LANS will require transitional time to meet internal requirements associated with such a change. For these reasons, DOE/LANS would propose the following new permit condition:

***E. 49. PUBLIC INVOLEMENT** - Within six (6) months after the effective date of the Permit, the Permittees shall post the following information on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated), where information on the Discharge Permit will be made available: (a) the Annual Update (VI.A.1); (b) Notices of Changes (VI.A.2); (c) Water Tightness Testing (VI.A.8); (d) Summary Report for Settled Solids (VI.A.9); (e) Freeboard Proposal and Responses (VI.A.12); (f) Emergency Plan (VI.A.16); (g) Installation of Flow Meters (VI.A.17); (h) Quarterly Monitoring Reports (VI.B.20); (i) Soil Moisture Monitoring System for the SET (VI.B.26); (j) Ground Water Flow (VI.B.27); (k) Final Closure (VI.D.44); (l) Post-Closure (VI.D.45); and (m) Termination of the Discharge Plan (VI.D.46). The Permittees agree to voluntarily provide the above-information, and as such, this permit condition is not subject to civil or criminal fines and penalties associated with permit requirements under Permit Sections 52 and 53.*

All posting requirements in the draft discharge permit not listed above shall be removed.

4

General Comment No. 4. Permit Condition VI. A.16, Page 21 (Emergency Plan)

The proposed condition requires DOE/LANS to submit an "Emergency Plan" that addresses "actions" to be taken to respond to fires, explosions or any unplanned or non-sudden release of a water contaminant from the Facility to the environment. In addition, the emergency plan must include a "spill prevention and response plan" to address all authorized releases to the environment" and a host of other requirements. As authority, NMED-GWQB cites 20.6.2.3109.C NMAC. The "Emergency Plan," however, appears to have been lifted directly from RCRA requirements at 40 CFR §264.52, which applies to "Contingency Plans."

DOE/LANS do not believe that NMED-GWQB can appropriately rely on 20.6.2.3109.C to impose RCRA requirements for "Contingency Plans" to a new requirement for an "Emergency Plan. " NMED's ground water rules address contingency plan requirements, which the draft Discharge Plan includes: there are numerous and comprehensive permit requirements to address potential contingencies including corrective actions to respond to any unplanned or non-sudden release of a water contaminant from the Facility. These requirements, found in Permit Section C, Contingency Plan, are supported under 20.6.2.3107.C NMAC which provides NMED-GWQB the authority to include in the Discharge Plan "*contingency plans to cope with failure of the discharge permit or system.*" The Emergency Plan, on the other hand, conflicts with and potentially duplicates many of these actions. For these reasons, and as discussed below, DOE/LANS object to the inclusion of this permit condition.

The draft permit at Permit Section C, *Contingency Plan,* contains ten (10) permit conditions related to contingency plan requirements that address corrective actions, corrective action reports, and spills and unauthorized releases from RLWTF. In addition, the draft permit contains permit condition 39, regarding "spills and unauthorized releases," and any failure in the discharge plan not otherwise provided. These requirements are also found in other discharge plans and are supported by NMED's ground water rules at 20.6.2.3109.C NMAC.

NMED's ground water rules, however, do not require a facility seeking a discharge permit to prepare an "Emergency Plan" as described in this permit condition. NMED's rules do not require that an "Emergency Plan" be prepared, distributed within 30-days or distributed to the numerous governmental agencies. DOE/LANS are unaware of another instance where NMED-GWQB has imposed this type of requirement in any other ground water discharge permits.

Further, the Emergency Plan potentially conflicts with or duplicates several permit requirements. For example, the Emergency Plan must address the actions to be taken in response to fires, explosions or any unplanned sudden of non-sudden releases of water contaminates. Permit condition 39, on the other hand, already addresses requirements for "spills and unauthorized releases," which can include "sudden or non-sudden" releases.

For the above reasons, DOE/LANS believe that the Contingency Plan is sufficient, and that this requirement should be deleted in its entirety.

5

General Comment No. 5. Permit Condition VI. C.34, Page 34 (Effluent Exceedance)

NMED's proposed condition requiring permittees to "cease discharges to the system" within 24 hours of becoming aware of a "confirmed [effluent] exceedance" is unsupported by NMED rules and an unprecedented measure for a single effluent sample exceedance alone. Cessation of discharge by the RLWTF is not commensurate with, or supported by, significant potential for harm to human health and the environment. The proposed condition appears to be based on the misplaced assumption that an effluent sample exceedance automatically equates to a ground water sample exceedance (*See* 20.6.2.3109.E NMAC). Other discharge permits, however, have not required cessation of operations even based on evidence that a ground water sample exceeded effluent limitations and state ground water quality standards.

Permittees do not believe it is appropriate to impose conditions requiring cessation of operations at RLWTF based on an effluent exceedance. The SET and MES have secondary containment systems designed to prevent the possibility that a potential release enters the environment. These units are required to be inspected and kept in good condition; no wastewater will be discharged to the environment (other than the potential for solar evaporation). For effluent discharged to Outfall 051, ground water monitoring is conducted at three down gradient wells to ensure that ground water standards are met. This is consistent with other facilities and discharge permits.

DOE/LANS propose the following changes:

> ***34. EFFLUENT EXCEEDANCE-****In the event that analytical result of an effluent sample indicate an exceedance for any of the effluent limits set forth by this Discharge Permit, the Permittees shall collect ~~analyze~~ a subsequent sample for the particular analyte that was in exceedance within 24 hours following receipt of analytical results indicating the exceedance. In the event the analytical results of the subsequent sample confirm that the maximum limitation has been exceeded (i.e., confirmed exceedance), the Permittees shall take the following actions:*
>
> *Within 24 hours of becoming aware of a confirmed exceedance, the Permittees shall:*
>
> a. ~~*cease discharges to the system that limits have been exceeded with the exception of the MES to which a confirmed exceedance shall not require immediate cessation*~~;
> b. *notify the NMED Ground Water Quality Bureau that an effluent limit set forth in this Discharge Permit has been confirmed to be in exceedance; and*
> c. *increase the frequency of effluent sampling to adequately establish quality of all discharges by batch.*

6

General Comment No. 6. Permit Condition VI. D.41, Page 40 (Cessation of Operation of Specific Units)

The draft discharge Permit requires that, within 60 days of the effective date of the permit, the permittees shall permanently cease operation of the listed units (a-e).

Ceasing operation of the listed units is a phased process consisting of the following steps:

- Management decision to stop using the vessels
- Efforts (proposal development, meetings, funding request) to obtain LANS and DOE concurrence for the project
- Design of facility and process changes. (For example, the need to plug all floor drains, the need to re-plumb sinks in the chemical laboratories, the need to pipe tank overflows to tanks other than the 75K)
- Procurement and installation of modifications (For example, the need to procure and install a microfilter that will replace the gravity filter)
- Implementation of process changes

The effort began in mid-2012. DOE/LANS have reached the final phase of the project, implementation of process changes (last in the bulleted list above). The implementation of process changes is itself a major undertaking, for it requires changing a process that has been used for 50 years, from 1963 to the present. The process will be changed in four increments:

1. Startup of the new microfilter: This treatment step has been designed to replace the filtration presently accomplished by the gravity filter and the pressure filters. Startup activities included the development of operating procedures, operator training, a readiness assessment, closure of findings made by the readiness team, and initial activities (as outlined in a formal Startup Plan). done

2. Startup of the WMRM Facility, wherein two of the six influent storage tanks will be used for the daily receipt of LANL radioactive liquid wastes. (The remaining four WMRM influent tanks will be held for emergency use.) Similar startup activities are required: procedures, training, readiness assessment, and startup plan and activities. The goal of this phased step is to shake down procedures and equipment associated with first-ever use of the WMRM Facility.

3. Startup of reaction tanks: Two existing tanks have been converted to chemical reaction tanks for the treatment of low-level influent. These tanks will replace the two clarifiers that have been in service since 1963. This is, perhaps, the most significant of the process changes. done

4. Coordinated use of new process equipment: This final step place the low-treatment operation in the full configuration described in the Discharge Permit DP-1132 Application supplement of August 2012. Influent will be received at the WMRM Facility (instead of at the 75K tank), chemical treatment will take place in the two reaction tanks (instead of in the clarifiers), and filtration be accomplished using the microfilter (instead of the gravity filter).

Each step listed above is dependent upon successful conclusion of the previous step. LANL has recently completed the first of the four process changes, and is prepared to startup the WMRM Facility, pending receipt temporary permission from the NMED. The currently drafted deadline of 60 days is not adequate to complete this process; therefore a 180 day deadline is suggested. This time period should start upon NMED's approval of the request by DOE/LANS for temporary permission to operate WMRM.

7

General Comment No. 7. Permit Condition VI. D.43, Page 41 (Final Closure Plan)

DOE/LANS object to this proposed condition because it imposes requirements that exceed the NMED's statutory authority and that are not reasonable or necessary to ensure compliance with the WQA, considering site-specific conditions.

As an administrative agency, the NMED-GWQB is limited to the power and authority granted by statute. The WQA only authorizes the NMED-GWQB to issue a permit "for the discharge of any water contaminant" with conditions that are both "reasonable and necessary to ensure compliance with the WQA and applicable regulations, considering site-specific conditions." Proposed conditions 43.h and 43.i are beyond the NMED-GWQB's limited authority under the WQA because those conditions purport to regulate DOE/LANS's methods of waste characterization and methods to "remove, transport, recycle or dispose of" wastes generated during closure. Those activities do not pertain to an intention to discharge a contaminant to water and are thus outside the scope of regulation authorized by the WQA. Conditions 43.h and 43.i should be deleted.

Even if proposed conditions 43.h and 43.i were not beyond the NMED-GWQB's statutory authority, those conditions are neither reasonable nor necessary to ensure compliance with the WQA. Requiring the Permittee to describe the methods to be used "to characterize wastes" generated during closure and the methods to be used to "remove, transport, recycle or dispose of" such wastes do not pertain to regulation of water discharges, the sole concern of the WQA.

Similarly, many of the other proposed conditions in VI.A.43 also are unreasonable and are not necessary to ensure compliance with the WQA. Both the 180-day time frame prescribed in the condition for development and submission of the final closure plan and the high level of detail required by the proposed condition are unreasonable and are inconsistent with other discharge permits the agency has issued. In many other discharge permits, the closure plan requirements simply direct that, upon closure, the facility shall (1) remove or plug lines leading to the treatment system so that a discharge can no longer occur, (2) drain and/or evaporate all liquids from all treatment units and dispose of sludge or residue in accordance with all local, state and federal regulations, (3) remove or demolish tanks and re-grade area with clean fill to blend with surface topography and prevent ponding, (4) continue ground water monitoring for two years after closure, and (5) following notification that post-closure monitoring may cease, plug and abandon monitoring wells in accordance with NMED standard conditions. NMED-GWQB has not demonstrated why the substantially more onerous and detailed closure plan requirements proposed in this permit are reasonable and necessary to ensure compliance with the WQA considering site specific conditions. DOE/LANS propose the following Final Closure Plan:

FINAL CLOSURE PLAN

Permanent Facility Closure Conditions

1. *RLWTF: Within 120 days after permanent cessation of discharge to the RLWTF and its collection system (excluding the SET and Outfall 051), the Permittees shall:*
    a) *Remove or plug and abandon in place the lines discharging into the RLWTF collection system so that a discharge can no longer occur;*

b) Drain wastewater from the RLWTF collection system and dispose of that wastewater in accordance with applicable local, state, and federal laws; and

c) Remove solids and sludge from the RLWTF collection system and contain, transport, and/or dispose of that material in accordance with applicable local, state, and federal laws.

Within **[insert appropriate number]** days after permanent cessation of discharge to the RLWTF and its collection system, the Permittees shall:

d) Remove, or permanently plug and abandon in place, all collection system lines leading to the RLWTF;

e) Drain or evaporate any remaining wastewater from the RLWTF, including storage tanks and all other components, and dispose of any drained wastewater in accordance with applicable local, state, and federal laws;

f) Remove solids and sludge from the RLWTF tanks and components and contain, transport, and/or dispose of such material in accordance with applicable local, state, and federal laws; and

g) Remove or demolish all RLWTF components, and re-grade the area with suitable fill to blend with surface topography, promote positive drainage, and prevent ponding.

2. SET: Within **[insert appropriate number]** days after permanent cessation of discharge to the SET, the line leading to the SET shall be plugged so that a discharge can no longer occur and wastewater shall be drained or evaporated from the SET and shall be disposed of in accordance with applicable local, state, and federal laws.

Within **[insert appropriate number]** days after permanent cessation of discharge to the SET, the Permittees shall submit a solids removal and disposal plan to NMED for approval describing how solids will be removed and disposed of in compliance with applicable local, state, and federal laws. Within **[insert appropriate number]** days of NMED approval of the solids removal and disposal plan, the Permittees shall begin implementation of that plan.

Within one year after completion of the solids removal and disposal plan requirements, the Permittees shall:

a) Remove, or permanently plug and abandon in place, all lines leading to and from the SET;

b) Remove the SET's concrete floor, walls, and liners;

c) Re-grade the site with suitable fill to blend with surface topography, promote positive drainage and, prevent ponding; and

d) Submit a closure report to NMED describing the decommissioning and the closure activities, including photographic documentation.

3. NPDES Outfall 051: Within **[insert appropriate number]** days after permanent cessation of the operation of NPDES Outfall 051, the Permittees shall:

a) Remove or plug all lines leading to the NPDES Outfall so that a discharge can no longer occur; and

b) Submit a closure report to NMED describing the NPDES Outfall decommissioning and closure activities, including photographic documentation.

When all closure and post-closure requirements have been completed, the Permittees may submit to NMED a written request for termination of the Discharge Permit.

ENCLOSURE 4

Table A-1 of the NMED Risk Assessment Guidance

ENV-DO-13-0326

LAUR-13-29209

U1302039

Date: DEC 12 2013

See Enclosure 2, Comment No. 25.

Table 1.1. Effluent Quality Limits for Discharges to Outfall 051

20.6.2.7.WW NMAC Toxic Pollutants	CAS #	Table A-1 NMED Soil Screening Levels, June 2012 (ug/L)
1,1,1-trichloroethane	71-55-6	See Table 1[1]
1,1,2,2-tetrachloroethane	79-34-5	See Table 1[1]
1,1,2-trichloroethane	79-00-5	0.42
1,1-dichloroethane	75-34-3	See Table 1[1]
1,1-dichloroethylene	75-35-4	See Table 1[1]
1,2,4,5-tetrachlorobenzene	95-94-3	11
1,2-dichloroethane	107-06-2	See Table 1[1]
1-methylnaphthalene	90-12-0	9.7[1]
2,4,5-trichlorophenol	95-95-4	3650
2,4,6-trichlorophenol	88-06-2	36.5
2,4,6-trinitrotoluene (TNT)	118-96-7	18.3
2,4-dichlorophenol	120-83-2	110
2,4-dinitro-o-cresol	534-52-1	2.9
2,4-dinitrotoluene (2,4,DNT)	121-14-2	2.2
2,6-dinitrotoluene (2,6,DNT)	606-20-2	36.5
2-methylnaphthalene	91-57-6	27[1]
3,4-benzofluoranthene	205-99-2	0.30
acrolein	107-02-8	0.04
acrylonitrile	107-13-1	0.45
aldrin	309-00-2	0.04
alpha-HCH	319-84-6	0.11
anthracene	120-12-7	11000
benzene	71-43-2	See Table 1[1]
benzidine	92-87-5	0.0009
benzo (k) fluoranthene	207-08-9	2.9
benzo-a-pyrene	50-32-8	See Table 1[1]
beta-HCH	319-85-7	0.37
bis (2-chloroethyl) ether	111-44-4	0.12
bis (2-chloroisopropyl) ether	108-60-1	9.6
bis (chloromethyl) ether	542-88-1	0.0006
bromodichloromethane	75-27-4	1.2
bromomethane	74-83-9	8.7
carbon tetrachloride	56-23-5	See Table 1[1]
chlordane	57-74-9	1.35
chloroform	67-66-3	See Table 1[1]
chloromethane	74-87-3	188
cis-1,2-dichloroethylene	156-59-2	73
DDT	50-29-3	2.0
di-2-ethylhexyl phthalate	117-81-7	48
dibutyl phthalate	84-74-2	3650
dichlorobenzene (1,4-)	106-46-7	4.3
dichlorobenzidine	91-94-1	1.5
dichlorodifluoromethane	75-71-8	203
dichloromethane (methylene chloride)	75-09-2	See Table 1[1]
dichloropropenes (1,3-)	542-75-6	4.3
dieldrin	60-57-1	0.04
diethyl phthalate	84-66-2	29208
dimethyl phthalate	131-11-3	365000
dinitrophenols (2,4-dinitrophenol)	51-28-5	730

20.6.2.7.WW NMAC Toxic Pollutants	CAS #	Table A-1 NMED Soil Screening Levels, June 2012 (ug/L)
diphenylhydrazine	122-66-7	0.84
endosulfan	115-29-7	219
endrin	72-20-8	11
ethylbenzene	100-41-4	See Table 1[1]
ethylene dibromide (EDB)	106-93-4	See Table 1[1]
fluoranthene	206-44-0	1460
fluorene	86-73-7	1460
gamma-HCH	58-89-9	0.61
heptachlor	76-44-8	0.15
hexachlorobenzene	118-74-1	0.42
hexachlorobutadiene	87-68-3	8.6
hexachlorocyclopentadiene	77-47-4	219
hexachloroethane	67-72-1	16.8
HMX	2691-41-0	1930
isophorone	78-59-1	707
methyl tertiary butyl ether	1634-04-4	125
monochlorobenzene	108-90-7	91.3
m-xylene	108-38-3	203
naphthalene	91-20-3	1.4
nitrobenzene	98-95-3	1.2
N-nitrosodibutylamine	924-16-3	0.02
N-nitrosodiethylamine	55-18-5	0.001
N-nitrosodimethylamine	62-75-9	0.004
N-nitrosodiphenylamine	86-30-6	137
N-nitrosopyrrolidine	930-55-2	0.32
o-xylene	95-47-6	203
pentachlorobenzene	608-93-5	29.2
pentachlorophenol	87-86-5	1.68
perchlorate	14797-73-0	25.6
phenanthrene	85-01-8	1100
phenol	108-95-2	See Table 1[1]
polychlorinated biphenyls (PCB's)	1336-36-3	See Table 1[1]
p-xylene	106-42-3	203
pyrene	129-00-0	1100
RDX	121-82-4	6.1
technical HCH	608-73-1	0.22[2]
tetrachloroethylene	127-18-4	See Table 1[1]
toluene	108-88-3	See Table 1[1]
toxaphene	8001-35-2	0.61
trans-1,2-dichloroethylene	156-60-5	107
tribromomethane (bromoform)	75-25-2	85
trichloroethylene	79-01-6	See Table 1[1]
trichlorofluoromethane	75-69-4	1290
vinyl chloride	75-01-4	See Table 1[1]
xylenes (total)	1330-20-7	See Table 1[1]

[1] The limits for toxic pollutants listed in in Table 1 of this Discharge Permit are the 20.6.2.3103 NMAC standards for ground water. .
[2] There is no NMED Tap Water Soil Screening Level in Table A-1 for this toxic pollutant. Instead the EPA Region 6 Tap Water Screening Level has been used.

ENCLOSURE 5

Redline-strikeout of the draft Discharge Permit showing all DOE/LANS comments

ENV-DO-13-0326

LAUR-13-29209

U1302039

Date: DEC 12 2013

DRAFT GROUND WATER DISCHARGE PERMIT (DP-1132)
RADIOACTIVE LIQUID WASTE TREATMENT FACILITY
LOS ALAMOS NATIONAL LABORATORY

Table of Contents

I. ACRONYMS:

The following acronyms and abbreviations may be used throughout this Discharge Permit:

BOD_5-biochemical oxygen demand (5-day)
CAS-Chemical Abstract Service
CFR-Code of Federal Regulations
Cl- chloride
CQCAP- Construction Quality Control Assurance Plan
DOE-United States Department of Energy
EPA- United States Environmental Protection Agency
gpd-gallons per day
LANL-Los Alamos National Laboratory
LANS- Los Alamos National Security, LLC
MES-Mechanical Evaporator System
Mg/L-milligrams per liter (or parts per million)
NMAC-New Mexico Administrative Code
NMSA-New Mexico Statues Annotated
NO_3-N-nitrate-nitrogen
NPDES-National Pollutant Discharge Elimination System
PCBs-Polychlorinated Biphenyls
QA/QC-Quality Assurance/Quality Control
RLW-Low-level radioactive waste water
RLWTF-Radioactive Liquid Waste Treatment Facility
SET-Solar Evaporative Tank System
TA-Technical Area
TDS-total dissolved solids
TKN-total Kjeldahl nitrogen
TRU-Transuranic ~~waste water~~
TSS-total suspended solids
WQA-Water Quality Act
WQCC-Water Quality Control Commission

II. DEFINITIONS:

The following is a list of definitions as they pertain specifically to this Discharge Permit:

A. **Average daily flow**- the rate determined by dividing the total monthly volume by the number of days for the reporting period.

B. **Active portion-** the portion of the Facility where treatment, storage or disposal of waste water occurs or has occurred in the past, including those portions of the Facility which are not in use and have not been closed in accordance with the conditions in this Discharge Permit.

C. **Closure-** to permanently discontinue the use of a unit, system, or component of the Facility (partial) or the entire Facility (final).

D. **Construction Quality Control Assurance Plan**- a written plan of activities necessary to ensure that construction and installation meet design criteria. A CQCAP includes practices and procedures for inspections, testing and evaluations of material and workmanship necessary to verify the quality of the constructed unit or system, and corrective actions to be implemented when necessary.

E. **Discharge-** the intentional or unintentional release of an effluent or leachate which may move directly or indirectly into ground water or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property.

F. **Effluent-** a liquid waste product resulting from the treatment or partial treatment of an influent waste stream intended to be discharged.

G. **Exfiltration-** the uncontrolled passage or penetration of waste water or sludge from a structural component of a unit or system through defective pipes, pipe joints, connections, cracks, structural failure, or material incompatibility and enters the surrounding environment.

H. **Flow meter-** a quantitative instrument or device that measures, displays, and records the flow of a fluid in a conduit or an open channel.

I. **Freeboard**-the vertical distance between the crest of the embankment and the carrying capacity level of an open tank, impoundment, or other open unit that contains a liquid or semi-liquid

J. **Impoundment-** a unit which is a natural topographic depression, man-made excavation, or diked area primarily constructed of earthen materials, specifically designed to hold, evaporate or store, an accumulation of liquid or semi-liquid waste.

K. **Industrial waste water-** the liquid wastes from industrial processes or non-household waste water which is generated through activity not solely derived from human excreta, residential sinks, showers, baths, clothes and dish-washing machines; or exceeds the characteristics of a domestic waste as defined in 20.7.3.7.D(6) NMAC; 300 mg/L BOD, 300 mg/L TSS, 80 mg/L total nitrogen or 105 mg/L fats, oils and grease.

L. **Infiltration-** the uncontrolled passage or penetration of liquids or semi-liquids into a unit or system through defective pipes, pipe joints or connections, or manhole walls. cracks, structural failure, or material incompatibility.

M. **Influent collection system-** the infrastructure and associated components (e.g. sumps, pumps) used for the collection and conveyance of waste water from the originator to the Facility's treatment systems.

N. **Influent-** untreated water, waste water or other liquid or semi-liquid flowing into a

reservoir, basin, or treatment plant.

O. **Leak detection system-** a system capable of detecting the failure of either the primary or secondary containment structure or the presence or release of an accumulated liquid in the secondary containment structure. The system must employ operational controls or consist of an interstitial monitoring device designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release into the secondary containment structure.

P. **Maintenance and repair-** all actions associated with keeping a system or component functioning as designed or restoring a system or component to its intended function. Maintenance and repair does not include alterations to a unit or system which change the intended function or design of the unit or alter the treatment process.

Q. **Maximum daily discharge-** the total daily volume of waste water (expressed in gallons per day) authorized for discharge by a discharge permit.

R. **Open unit or system-** a unit or system designed to store, treat or dispose of liquids, semi-liquids or solids to which the uppermost portion of the unit is exposed.

S. **Outfall-** the point where a treated waste water discharges to waters of the United States, or a tributary to waters of the United States.

T. **Peak instantaneous flow-** the highest design flow rate for a unit or system, expressed in gallons per minute or cubic feet per second.

U. **Record drawings-** the official record of the actual as-built conditions of the completed construction, to be held as the permanent record of each unit and system, which shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978).

V. **Secondary containment-** a constructed unit~~, independent of the (primary) unit~~ or system designed to ~~convey, store, treat, or dispose of liquids or semi-liquids, that is designed, constructed and operated to~~ prevent any migration of waste streams or accumulated liquid out of the unit or system to the soil, ground water, or surface water at any time. Secondary containment can include, but is not limited to, double-walled pipes, concrete and floors equipped with sumps and alarm systems to detect potential leaks. ~~must be~~:

- ~~designed, constructed and maintained to surround the primary unit completely;~~
- ~~free of cracks, gaps, or fissures;~~
- ~~constructed of, or lined with, materials that are compatible with the waste streams to be in contact with the unit or system;~~
- ~~placed on a foundation or base capable of withstanding pressure gradients, settling or uplift which may cause failure of the unit or system;~~
- ~~equipped with a leak detection system that is designed and operated so that it will detect the failure of the primary containment structure;~~
- ~~sloped or designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation within a 24 hour time period; and~~
- ~~capable of detecting and collecting releases and accumulated liquids until the collected material can be removed.~~

W. **Settled solids measurement device-** an apparatus for testing settled solids in a liquid suspension for settling rate, compaction of the settled solids, and the resulting clarity of the liquid.

X. **Sludge or settled solids-** a solid or semisolid residue that results from the treatment

or precipitation of solids from a waste stream, or the accumulation of natural sediment and debris settling in an open unit or system.

Y. **Synthetic Liner-** a continuous layer of man-made materials, beneath or on the sides of a unit or system, which restricts the downward or lateral escape of effluent or leachate.

Z. **Tank-** a stationary device, designed to contain an accumulation of waste water which is constructed primarily of non-earthen materials (e.g., concrete, steel, plastic) which provide structural support. Tanks can be further identified as either an **On ground tank** meaning a tank that is situated in such a way that the bottom of the tank is on the same level as the adjacent surrounding surface allowing for visual inspection of the vertical walls but not the external tank bottom, ~~or~~ an **In-ground tank** meaning a tank constructed or installed so that a portion of the tank wall is situated to any degree within the ground, thereby preventing visual inspection of that portion of the external surface area, or an **Above-ground tank** meaning a tank that is completely elevated above the adjacent surrounding surface allowing for visual inspection of the vertical walls and external tank bottom.

AA. **Total Nitrogen**- The ~~cumulative~~ sum of total Kjeldahl nitrogen (TKN) and nitrate-nitrogen (NO_3-N).

BB. **Total Polychlorinated Biphenyls (PCBs) -** the sum of all congeners, sum of all homologs or sum of all aroclors. The total PCB concentration as achieved by summation of the individual and co-eluted compounds.

CC. **Toxic Pollutant**- a water contaminant or combination of water contaminants in concentration(s) which, upon exposure, ingestion, or assimilation either directly from the environment or indirectly by ingestion through food chains, will unreasonably threaten to injure human health, or the health of animals or plants which are commonly hatched, bred, cultivated or protected for use by man for food or economic benefit; as used in this definition injuries to health include death, histopathologic change, clinical symptoms of disease, behavioral abnormalities, genetic mutation, physiological malfunctions or physical deformations in such organisms or their offspring; in order to be considered a toxic pollutant a contaminant must be one or a combination of the potential toxic pollutants identified in the list in 20.6.2.7.WW NMAC and be at a concentration shown by scientific information currently available to the public to have potential for causing one or more of the effects listed above; any water contaminant or combination of the water contaminants identified in the list in 20.6.2.7.WW NMAC creating a lifetime risk of more than one cancer per 100,000 exposed persons is a toxic pollutant.

DD. **Treatment-** any method, technique or process that, through chemical biological and mechanical processes, modify waste water characteristics with the objective to neutralize and reduce or remove organic and inorganic water contaminants which if released to the environment could potentially impact ground water quality or pose a threat to human health.

EE. **Unauthorized Release or spill-** the intentional or unintentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil or other water contaminant not authorized in this Discharge Permit.

FF. **Water Contaminant** - any substance that could alter if discharged or spilled the physical, chemical, biological or radiological qualities of water; "water contaminant"

does not mean source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954.

III. Introduction

The New Mexico Environment Department (NMED) issues this Discharge Permit (Discharge Permit), DP-1132, ~~jointly and severally liable~~ to the United States Department of Energy (DOE) and Los Alamos National Security, LLC (LANS) ~~and the United States Department of Energy (DOE)~~ (collectively the Permittees) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978, §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge, and potential release, of water contaminants from Los Alamos National Laboratory's (LANL's) Radioactive Liquid Waste Treatment Facility (Facility) so as to protect public health, ground water for present and potential future use as a domestic water supply or an agricultural water supply, and those segments of surface water gaining from ground water inflow. In issuing this Discharge Permit, NMED has determined that the requirements of 20.6.2.3109.C NMAC have been or will be met.

The application (i.e., discharge plan) consists of the materials submitted by the Permittees on August 19, 1996, an updated application submitted to NMED on February 16, 2012, an amendment to the application submitted to NMED on August 10, 2012, and materials contained in the administrative record prior to issuance of this Discharge Permit.

The Facility is located within Los Alamos National Laboratory, approximately 1.5 miles south of Los Alamos, New Mexico, in Sections 16, 17, 20, 21 and 22, Township 19N, Range 06E, Los Alamos County. Ground water most likely to be affected ranges from depths of approximately one foot to 1,306 feet and has a total dissolved solids concentration ranging from approximately 162 to 255 milligrams per liter.

The Facility, as it pertains to conditions within this Discharge Permit (DP-1132), is a wastewater treatment facility that is authorized to ~~for the treatment and~~ discharge ~~of~~ up to 40,000 gallons per day (gpd), ~~is~~ specifically described in section V(D) of this Discharge Permit and includes the influent collection system, the low-level radioactive liquid waste treatment system, the transuranic waste water treatment system, the secondary treatment system, the Mechanical Evaporator System (MES), the Solar Evaporative Tank System (SET) and an outfall (Outfall 051) also regulated by a National Pollutant Discharge Elimination System (NPDES) permit issued by the United States Environmental Protection Agency (EPA) pursuant to the federal Clean Water Act Section 402, 33 U.S.C § 1342. The discharge may contain water contaminants with concentrations above the standards of 20.6.2.3103 NMAC and may contain toxic pollutants as defined in 20.6.2.7.WW NMAC.

Pursuant to 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or that the standards of 20.6.2.3103 NMAC are being or may be violated or a toxic pollutant as defined in 20.6.2.7.WW NMAC is present. Such modifications may include, without limitation, the implementation of structural controls,

treatment processes, monitoring criteria, operational processes, changes in discharge activities and the abatement of water pollution and remediation of ground water quality.

Issuance of this Discharge Permit does not relieve the Permittees of the responsibility to comply with the WQA, WQCC Regulations, and all other applicable federal, state, and local laws and regulations.

IV. Findings

In issuing this Discharge Permit, NMED finds:

A. The Permittees are discharging effluent or leachate from the Facility so that such effluent or leachate may move directly or indirectly into ground water within the meaning of 20.6.2.3104 NMAC.

B. The Permittees are discharging effluent or leachate from the Facility so that such effluent or leachate may move into ground water of the State of New Mexico which has an existing concentration of 10,000 mg/L or less of total dissolved solids (TDS) within the meaning of 20.6.2.3101.A NMAC.

C. The discharge from the Facility is within or into a place of withdrawal of ground water for present or reasonably foreseeable future use within the meaning of the WQA, NMSA 1978, § 74-6-5.E.3, and the WQCC Regulations at 20.6.2.3103 NMAC

D. The discharge from the Facility to Outfall 051 is subject to the exemption set forth in 20.6.2.3105.F NMAC, to the extent that effluent limitations (not including monitoring requirements) are imposed, unless the NMED Secretary determines that a hazard to public health may result.

V. Authorization to Discharge

A. Pursuant to 20.6.2.3104 NMAC, it is the responsibility of the Permittees to ensure that discharges authorized by this Discharge Permit are consistent with the terms and conditions herein.

B. The Permittees are authorized to discharge ~~receive and treat~~ up to 40,000 gpd of low-level and transuranic radioactive industrial waste water using a series of treatment processes as described in Section V(D) of this Discharge Permit in accordance with the Conditions set forth in Section VI of this Discharge Permit.

C. The Permittees are authorized to discharge up to 40,000 gpd of treated waste water, in accordance with the Conditions set forth in Section VI of this Discharge Permit. Discharges shall be to either the Mechanical Evaporator System (MES), the synthetically lined Solar Evaporative Tank system (SET), or through an outfall (identified as Outfall 051) also regulated by a National Pollutant Discharge Elimination System (NPDES) permit (Permit No. NM0028355) issued by the United States Environmental Protection Agency [20.6.2.3104 NMAC, 20.6.2.3106.C NMAC, 20.6.2.3109.C NMAC].

D. The Permittees are authorized to use the following defined systems with their associated units for the process of treating and disposing of waste water:

The Influent Collection System is defined herein as all primary and secondary containment lines that convey transuranic or low-level radioactive waste water from Technical Areas TA-03, TA-35, TA-48, TA-50, TA-55, and TA-59 to the Transuranic Waste (TRU) treatment system and the Low-level Radioactive waste water (RLW) treatment system at TA-50. It includes the conveyance lines beginning at the point the pipe emerges from the building or other structure that comprises the site of generation, and extending to the vault immediately upstream of the influent tank at TA-50. It also includes the conveyance of low-level radioactive waste water to the RLW treatment system by truck.

The Low-level Radioactive Waste water (RLW) Treatment System is defined herein as the low-level radioactive waste water influent storage tanks, the associated treatment units (filters, feed tanks, ion exchange columns, reverse osmosis units, etc.) effluent storage tanks, and other associated low-level radioactive waste water components at TA-50. The process by which the individual treatment units within the low-level radioactive treatment system are utilized may, for attaining compliance with the effluent limits set forth in this Discharge Permit, be altered, by-passed, replaced, or removed in accordance with the Conditions set forth in this Discharge Permit. The physical location of each unit and system that conveys, stores, or treats RLW waste streams coming into the low-level radioactive waste water treatment system is within TA-50.

The Transuranic ~~Waste~~ (TRU) Waste Water Treatment System is defined herein as the influent storage tanks for each form of TRU (acidic and caustic) wastestreams, the associated neutralization unit, pressure filters, the final processing tanks, and other associated TRU wastestream conveyance, storage and treatment components at TA-50. ~~All wastestreams associated with TRU shall be disposed of at an off-site facility permitted to receive TRU waste.~~

The Secondary Treatment System is defined herein as the receiving tanks for reverse osmosis concentrate waste water generated through the RLW Treatment System and treated effluent generated from the TRU Treatment System, the treatment process units for secondary reverse osmosis, the rotary vacuum filter, and other associated post-treatment conveyance, storage and treatment components at TA-50 designed to reduce wastestream volumes.

The Mechanical Evaporator System (MES) is defined herein as the units in which treated RLW effluent is disposed of through gas generated mechanical evaporation.

The Solar Evaporative Tank System (SET) is defined herein as the single concrete tank unit at TA-52 that receives treated effluent from the RLW Treatment System, and the conveyance line from TA-50. The SET consists of two cells separated by a single partitioned wall; each cell has a containerized volume of approximately 380,000 gallons. The SET is an unsealed subgrade concrete structure with a single double-lined synthetic liner, and a leak detection system within the synthetic liner.

Outfall 051 is defined herein as the outfall through which treated waste water from the Facility is discharged to Effluent Canyon, which is a tributary to Mortandad

Canyon.
[20.6.2.3104 NMAC, 20.6.2.3106.C NMAC, 20.6.2.3109.C NMAC].

VI. Conditions

NMED issues this Discharge Permit for the discharge of water contaminants subject to the following conditions:

A. Operational Plan

1. **ANNUAL UPDATE**-The Permittees shall submit to NMED and shall post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) an updated Facility Process Description annually by February 1 of each year. The annual Facility Process Description shall include the following:
   a. A schematic of all major structures associated with the Facility, including all influent lines, buildings, exterior tanks, effluent lines, outfalls and discharge locations identified in this Discharge Permit.
   b. A comprehensive flow chart demonstrating the most current processes in operation for the collection, treatment and disposal of waste water for the Facility. The flow chart shall indicate any processes which have been by-passed, decommissioned, or are no longer used for the collection, treatment or final disposal of the waste water.
   c. An associated narrative describing each of the systems and treatment units outlined in the flow chart. This narrative shall include the collection system, primary treatment units, secondary treatment units and any systems used in the disposition of any associated waste streams at the Facility. For each unit or system, the narrative shall include:
      1) the identification of the unit or system;
      2) the physical location;
      3) intended function;
      4) physical description;
      5) operational capacity, if applicable;
      6) the date the unit or system was placed in operation;
      7) origin of waste streams that the unit or system receives;
      8) the unit or system(s) to which it discharges to; and
      ~~9) a summary of maintenance or repairs made during the reporting period.~~
   d. The Annual Update shall also include the following documents to be submitted annually by February 1 of each year.
      1) Summary of maintenance and repairs made during the reporting period.
      2) Water Tightness Testing results (VI.A.8)
      3) Settled Solids measurements (VI.A.9)
      4) Ground Water Flow report (VI.A.27)

[20.6.2.3106.C NMAC]

2. **NOTIFICATION OF CHANGES-**The Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) a written notification of any changes in the Facility's collection, treatment or disposal systems which are not changes associated with "maintenance and repairs" or significant changes required to meet Permit Section VI.A.3, Submittal of Plans and Specifications ~~beyond the scope of maintenance and repair~~. The notification shall be submitted no less than thirty days prior to the date proposed for implementation. The notification shall include, at a minimum, the following items listed herein and others which may be determined to be required by NMED:
   a. date process change is planned to be implemented;
   b. narrative of process change;
   c. justification for making the process change;
   d. units or components being removed from the process;
   e. units or components being incorporated into the process;
   f. operational controls implemented for the change in processes;
   g. intended duration ~~temporal scope~~ of process change (e.g., permanent or limited duration); and
   ~~h. any additional information required by NMED.~~

   [20.6.2.3106.C NMAC]

3. **SUBMITTAL OF PLANS AND SPECIFICATIONS-**The Permittees shall not implement any expansion, process modification, or alteration of a system or unit that would result in any significant modification in the discharge of water contaminants or significant modification to ~~changes~~ the intended function, design or capacity for any of the system, units or components of the Facility's collection, treatment or disposal systems without prior written approval by NMED. Prior to implementing any such changes, the Permittees shall submit to NMED for approval a written proposal, including plans and specifications that describes in detail the proposed changes in the processes or components of the Facility's collection, treatment, or disposal systems. The proposal shall be delivered by certified mail or hand delivery. The Permittees shall not place any waste in a new or changed unit or system unless the Permittees receive prior written approval from NMED. NMED will provide such approval only if it finds that the Permittees have submitted the required elements listed herein in sufficient detail to demonstrate that the unit or system is designed and constructed to minimize the possibility of an unauthorized release of water contaminants which could directly or indirectly impact ground water quality or pose a threat to human health. Should NMED determine that the proposed changes do not conform to activities authorized by this Discharge Permit and/or constitute a modification of the Permittees discharge plan, NMED will inform LANL that a Discharge Permit

modification is required in order to proceed with the proposed change.

The proposal shall include, at a minimum, the following information:

a. identification of all applicable units and a description of how they will be constructed;
    1. a map, to scale, of the Facility, with the location of the proposed unit relative to other identified structures or systems referenced in this Discharge Permit;
    2. specifications for all new unit and system components (e.g., lift stations, valves, transfer lines, process units and associated details); whether new, retrofitted, or proposed for abandonment. All new system components for the collection, treatment or disposal of waste water at the Facility shall be designed to meet the projected needs of the Facility;
    3. plans and specifications for proposed flow meters that will be used to measure the volume of waste water discharged to or from the unit or system;
    4. demonstration that the proposed unit or system is adequately designed for its intended function;
    5. compatibility of the unit or system's constructed material with the proposed waste stream, including, if applicable, information regarding corrosion protection to ensure that it will maintain its structural integrity and not collapse, rupture or fail;
    6. certification that the foundation, structural support, seams, connections, and pressure controls, if applicable, are adequately designed and the unit or system has sufficient structural strength to convey, store, treat or dispose of the intended waste stream;
    7. certification for all plans and specifications attesting to the capacity of the unit or system including, without limitation, waste water flow data derived using both average daily flow and peak instantaneous flow. Computations should be presented in a tabular form showing depths and velocities at minimum, design average, and peak instantaneous flow for all new system components;
    8. water balance calculations for the capacity and evaporative potential for units which are subject to exposure to the environment and to which precipitation events may impact total capacity of the unit. The unit shall be designed such that two feet of freeboard or an NMED approved alternative is maintained at all times;
    9. design specifications for secondary containment for all units or systems intended to convey, store, treat, or dispose of liquid or semi-liquid waste streams;
    10. design specifications for leak detection systems associated with systems designed to convey, store, treat, or dispose of liquid or

semi-liquid waste streams, which demonstrate the capability of detecting the failure of either primary or secondary containment or the presence of any release of any accumulated liquid in the secondary containment system within 24 hours of initial release~~;~~ or at the earliest practicable time if the permittees can demonstrate that the existing detection technologies or site conditions will not allow detection of a release within 24-hours.

11. proposed leakage tests shall be specified for all new unit or system components with direct contact to treated or untreated waste water. This may include appropriate water or low pressure air testing. The use of a camera or other visual methods used for documentation of the inspection, prior to placing the unit or system in service is recommended;
12. design specifications for all units or systems designed to convey, store, treat, or dispose of liquid or semi-liquid waste streams, which demonstrate the ability to remove liquids and semi-liquids from the area of containment within 24 hours of a release~~;~~ or at the earliest practicable time if the permittees can demonstrate that the existing detection technologies or site conditions will not allow detection of a release within 24-hours; and
13. a Construction Quality Control Assurance Plan (CQCAP) assuring that the proposed unit or system will meet or exceed all design criteria and specifications.

Plans and specifications shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978). The Permittees' proposal proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.1202 NMAC, 20.6.2.3106.C NMAC, 20.6.2.3109.C NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]

4. **CONSTRUCTION REPORT**-Within 90 days following completion of construction for a unit or system that requires NMED approval, the Permittees shall prepare a final construction report that contains the following:
   a. A complete copy of record drawings, specifications, final design calculations, addenda, and change orders, as applicable;
   b. Description of the procedures and results from all inspection and tests that occur before, during, and after construction to ensure that the construction materials and the installed unit or system components meet the design specifications; and
   c. A complete copy of the Operation and Maintenance Manual specific to the unit or system being constructed.

The Permittees' proposal final construction report along shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.1202 NMAC, 20.6.2.3109.C NMAC, 20.6.2.3106.C NMAC, 20.6.2.3107.C NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]

5. **RESTRICTING ENTRY**-The Permittees shall, at all times, prevent the unauthorized entry of persons, wildlife, or livestock into the active portions of this Facility so that physical contact with the waste streams, structures and equipment is restricted. Means to control unauthorized access shall include an artificial or natural barrier which completely surrounds the active portions of the Facility and a means to control entry, at all times, through gates or other entrances to the active portions of the Facility (e.g., locks, surveillance system).

   [20.6.2.3109.C NMAC]

6. **SIGNS**-The Permittees shall post and maintain signs at the ~~each~~ entrance to the TA-50 RLWTF and the TA-25 SET ~~active portions of the Facility and at other locations, in sufficient numbers to be seen from any approach to the active portions of the Facility~~ stating that access is limited to Authorized Personnel only. ~~Unauthorized Personnel is prohibited.~~ All signs shall be ~~posted in English and Spanish and be~~ legible from a distance of at least 25 feet.

   [20.6.2.3109.C NMAC]

7. **VERIFICATION OF SECONDARY CONTAINMENT**-Within 180 days following the effective date of this Discharge Permit (by DATE), the Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) verification demonstrating all units and systems intended to convey, store, treat or dispose of liquid or semi-liquid waste streams meet the requirements of secondary containment as defined in this Discharge Permit. Verification must also include certification of an operational leak detection system for the unit or system.

   [20.6.2.3106.C NMAC, 20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

8. **WATER TIGHTNESS TESTING**-Within 540 days following the effective date of this Discharge Permit (by DATE), and every 540 days thereafter, the Permittees shall demonstrate that each unit and system intended to convey, store, treat or dispose of a liquid or semi-liquid waste stream without secondary containment is not leaking and is otherwise fit for use. To make

the demonstration, the Permittees shall conduct both a visual test, for those units and systems that are above-ground and visually inspectable, and a quantifiable test.

For units and systems that are above-ground and visually inspectable, ~~T~~the visual assessment shall be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. If necessary, the Permittees shall remove the stored waste from the unit or system to allow the condition of internal surfaces to be assessed.

The quantifiable assessment for units and systems that are used to store, treat or dispose of liquid or semi-liquid waste streams shall consist of obtaining tank level measurements over at least a 36 hour period during which no liquid or semi-liquid is added to or removed from the unit. The exfiltration or infiltration rate shall not exceed 0.07 gallons per hour per thousand gallons of capacity for the unit or system.

The quantifiable assessment for units and systems designed to convey a liquid or semi-liquid waste stream shall be determined through passive testing for leakage exfiltration and infiltration. The infiltration or exfiltration rate shall not exceed 50 gallons per mile per consecutive 24 hour period for any section of the system. Infiltration and exfiltration tests for conveyance lines shall be conducted as follows:

a. Prior to testing for infiltration, the conveyance lines shall be isolated and evacuated so that maximum infiltration conditions exist at the time of testing. The Permittees shall measure and document the volume of infiltration entering each section of the conveyance line being tested. The cumulative results for the entire collection system shall not be a satisfactory method for gauging infiltration compliance. Each sewer section between manholes shall not exceed the maximum infiltration rate.

b. Prior to testing for exfiltration, the conveyance lines shall be isolated and filled with water to a level that produces, at minimum, two feet of hydrologic head above the uppermost point of the section being tested. The cumulative results for the entire collection system shall not be a satisfactory method for gauging exfiltration compliance. Each sewer section between manholes shall not exceed the maximum exfiltration rate.

Demonstration of water tightness shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978). The Permittees shall submit to NMED, and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated), the procedures and findings of the evaluation by February 1 of each year immediately following the date when the water tightness test was performed. In the event that inspection reveals that the criteria for leakage is greater than permissible in this Discharge Permit, the Permittees shall

implement the contingency plan set forth in this Discharge Permit.

[20.6.2.3106.C NMAC, 20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

9. **SETTLED SOLIDS-**The Permittees shall inspect and measure the thickness of the settled solids, on an annual basis for all open units and systems that are designed to store or dispose of a liquid or semi-liquid through evaporation. The Permittees shall measure the thickness of settled solids in accordance with the following procedure:
   a. The total surface area of the unit or system shall be divided into nine equally sized areas.
   b. A settled solids measurement device shall be utilized to obtain one settled solids thickness measurement (to the nearest half-foot) per area.
   c. The individual settled solids depths for each of the nine measurement areas shall be averaged.

   The Permittees shall record all measurements in an inspection log which must include, at a minimum, the following:
   a. date and time of the inspection;
   b. the name of the inspector;
   c. identification of the unit;
   d. the location of the unit;
   e. the estimated total volume of liquid or semi-liquid in the unit or system at the time of inspection;
   f. the total depth capacity of the unit or system (with respect to freeboard requirements);
   g. the method used to determine the settled solids depth; and
   h. The average measured depth of settled solids in the unit.

   The Permittees shall not allow settled solids to accumulate in any open unit or system used to convey, store, treat, or dispose of liquid or semi-liquid at a volume greater than one foot. In the event that settled solids volumes exceed the volumes defined in this Discharge Permit or upon implementation of any settled solids removal activity, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

   The Permittees shall keep the inspection log on site for a minimum of five years from the date of inspection. The Permittees shall submit a summary report of all settled solids depth results to NMED by February 1 of each year. The Permittees' summary report shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

   [20.6.2.3107.A NMAC]

10. **FACILITY INSPECTIONS-**The Permittees shall inspect the Facility for

malfunctions, deterioration, leaks ~~operator errors and discharges~~ which may be causing, or may lead to, an unauthorized release to the environment or pose a threat to human health.

The inspection shall be performed at the frequency prescribed for each unit or system in this Discharge Permit or based on the rate of deterioration of the equipment and the probability of an environmental or human health incident for those units and systems not specifically described herein.

a. The Permittees shall inspect and test all leak detection systems to ensure performance within manufacturer specifications on a monthly basis.
b. The Permittees shall inspect all externally observable portions of units and systems conveying, treating or storing liquids, semi-liquids, or solids including any secondary containment areas on a weekly basis. The Permittees shall examine for evidence of deterioration or failure of the units and systems. The visual portions of all synthetic liners used to store or dispose of liquids or semi-liquids shall be inspected for uniformity, damage, imperfections, punctures, blisters, and evidence of seam or joint failure.
c. The Permittees shall inspect, on a weekly basis through indirect observation, all units and systems conveying, processing, or storing liquids, semi-liquids, or solids that are inaccessible or otherwise cannot be directly observed. The Permittees shall identify the unit or system and note any potential findings which may suggest a breach or failure of containment.
d. The Permittees shall inspect all open units and systems which contain a liquid or semi-liquid, on each day during which the Facility is in operation, to ensure capacity of the unit or system is not exceeded.

The Permittees shall record all inspections in an inspection log which shall be kept on site for a minimum of five years from the date of inspection. At a minimum, these inspections shall include the date and time of the inspection, the name of the inspector, identification of the unit, the location of the unit, the total volume of liquid or semi-liquid in the unit or system at the time of inspection, a notation of the observations made, and the date and nature of any maintenance and repairs made.

In the event that inspection findings reveal significant damage likely to affect the structural integrity of a unit or system or any of its associated components, or its ability to function as designed, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

[20.6.2.3107.A NMAC]

11. **MAINTENANCE and REPAIR-**The Permittees shall maintain the function and structural integrity of the Facility at all times except during maintenance or repair. All routine maintenance and repair actions shall be

noted in a maintenance log which shall be kept on site for a minimum of five years. Maintenance and repair of a unit or system required due to potential malfunction which could lead to an unauthorized discharge to the environment or pose a threat to human health shall be corrected as soon as possible, but no later than 30 days from the date of the observed malfunction. For good cause, NMED may approve a longer period. The Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) a report which summarizes and describ~~esing~~ the maintenance and repair activities performed on the Facility as part of the quarterly monitoring reports.

In the event that routine maintenance and repair reveal significant damage likely to affect the structural integrity of a unit or system or any of its associated components, or its ability to function as designed, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

[20.6.2.3107.A NMAC]

12. **FREEBOARD**-The Permittees shall maintain two feet of freeboard in all open units and systems that contain a liquid or semi-liquid. If the Permittees determine that two feet of freeboard cannot be maintained, the Permittees shall submit to NMED for approval a written request for alternate freeboard requirements. In the request the Permittees shall, at a minimum, propose freeboard levels that will be maintained and propose demonstrated spill prevention controls and overfill prevention controls that include the prevention of overtopping by wave, wind or precipitation events. The Permittees' proposal proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

    In the event that established freeboard is not maintained, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

    [20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

13. **EFFLUENT LIMITS: OUTFALL 051**-The Permittees shall not discharge treated waste water to Outfall 051 that exceeds the following limits (or is outside the following pH range):

    a. All water contaminants and their associated limits as listed in Table 1.

Table 1. Effluent Quality Limits for Discharges to Outfall 051

Inorganic Chemicals:	CAS#	mg/L
Aluminum (dissolved)	7429-90-5	5.0
Arsenic (dissolved)	7440-38-2	0.1
Barium (dissolved)	7440-39-3	1.0

Organic Chemicals:	CAS#	mg/L
Benzene (total)	71-43-2	0.01
Benzo (a) pyrene (total)	50-32-8	0.0007
Carbon tetrachloride (total)	56-23-5	0.01

Boron (dissolved)	7440-42-8	0.75
Cadmium (dissolved)	7440-43-9	0.01
Chromium (dissolved)	7440-47-3	0.05
Chloride (dissolved)	7647-14-5	250.0
Cobalt (dissolved)	7440-48-4	0.05
Copper (dissolved)	7440-50-8	1.0
Cyanide (dissolved)	57-12-5	0.2
Fluoride(dissolved)	16984-48-8	1.6
Iron (dissolved)	7439-89-6	1.0
Lead (dissolved)	7439-92-1	0.05
Manganese (dissolved)	7439-96-5	0.2
Molybdenum (dissolved)	7439-98-7	1.0
Mercury (total)	92786-62-4	0.002
Nickel (dissolved)	7440-02-0	0.2
Perchlorate (total)	14797-73-0	~~0.011~~, 0.0256
pH (total)		6 – 9
Selenium (dissolved)	7782-49-2	0.05
Silver (dissolved)	7440-22-4	0.05
Sulfate (dissolved)		600.0
Total Dissolved Solids (dissolved)		1000.0
Uranium (dissolved)	7440-61-1	0.03
Zinc (dissolved)	9029-97-4	10.0

Chloroform (total)	67-66-3	0.1
1,1-Dichloroethane (total)	75-34-3	0.025
1,2-Dichloroethane (total)	107-06-2	0.01
1-1-Dichloroethylene (total)	75-35-4	0.005
1,1,2,2-Tetrachloroethylene (PCE) (total)	127-18-4	0.02
1,1,2-Trichloroethylene (TCE) (total)	86-42-0	0.1
Ethylbenzene (total)	100-41-4	0.75
Ethylene dibromide (total)	1106-93-4	0.0001
Naphthalene plus monomethylnaphthalenes (total)	91-20-3, 90-12-0, 91-57-6	0.03
Methylene chloride (total)	75-09-2	0.1
Total PCBs (total)		0.001
Phenols (total)	108-95-2	0.005
Toluene (total)	108-88-3	0.75
1,1,1-Trichloroethane(total)	74552-83-3	0.06
1,1,2-Trichloroethane (total)	79-00-5	0.01
1,1,2,2-Tetrachloroethane (total)	79-34-5	0.01
Vinyl Chloride (total)	75-01-4	0.001
Xylenes (total)(total)	108-38-3, 1330-20-7, 95-47-6, 106-42-3	0.62

Radioactivity:		**pCi/L**
Combined Radium-226 & Radium-228 (total)		30

Nitrogen Compounds:		**mg/L**
Total Nitrogen (sum of TKN+NO_3-N) (total)		15

b. Until the new treatment units at the RLWTF are operational on or before September 30, 2015, the following Total Nitrogen effluent limit shall be effective for discharges to Outfall 051:

- Daily Maximum: 45 mg/L
- Quarterly Average: 15 mg/L

~~b.~~c. For any water contaminant that is not listed in Table 1 of this Discharge Permit but is listed as a toxic pollutant in 20.6.2.7.WW NMAC, the limit shall be the concentration listed in Table A-1 of NMED, Risk Assessment

Guidance for Site Investigation and Remediation (most recent edition). For any water contaminant that is not listed in Table 1 of this Discharge Permit or in Table A-1 of the Risk Assessment Guidance, the limit shall be the most recent EPA Regional Screening Level (RSL) for residential tap water. If an RSL is applicable for a carcinogenic water contaminant, the limit shall be adjusted to represent a lifetime risk of no more than one cancer occurrence per 100,000 persons (i.e., a cancer risk of $1^{*} \times 10^{-5}$).

Table 1.1. Effluent Quality Limits for Discharges to Outfall 051

20.6.2.7.WW NMAC Toxic Pollutants	CAS #	Table A-1 NMED Soil Screening Levels Volume 1, June 2012 (ug/L)
1,1,1-trichloroethane	71-55-6	See Table 1[1]
1,1,2,2-tetrachloroethane	79-34-5	See Table 1[1]
1,1,2-trichloroethane	79-00-5	0.42
1,1-dichloroethane	75-34-3	See Table 1[1]
1,1-dichloroethylene	75-35-4	See Table 1[1]
1,2,4,5-tetrachlorobenzene	95-94-3	11
1,2-dichloroethane	107-06-2	See Table 1[1]
1-methylnaphthalene	90-12-0	9.7[1]
2,4,5-trichlorophenol	95-95-4	3650
2,4,6-trichlorophenol	88-06-2	36.5
2,4,6-trinitrotoluene (TNT)	118-96-7	18.3
2,4-dichlorophenol	120-83-2	110
2,4-dinitro-o-cresol	534-52-1	2.9
2,4-dinitrotoluene (2,4,DNT)	121-14-2	2.2
2,6-dinitrotoluene (2,6,DNT)	606-20-2	36.5
2-methylnaphthalene	91-57-6	27[1]
3,4-benzofluoranthene	205-99-2	0.30
acrolein	107-02-8	0.04
acrylonitrile	107-13-1	0.45
aldrin	309-00-2	0.04
alpha-HCH	319-84-6	0.11
anthracene	120-12-7	11000
benzene	71-43-2	See Table 1[1]
benzidine	92-87-5	0.0009
benzo (k) fluoranthene	207-08-9	2.9
benzo-a-pyrene	50-32-8	See Table 1[1]
beta-HCH	319-85-7	0.37
bis (2-chloroethyl) ether	111-44-4	0.12
bis (2-chloroisopropyl) ether	108-60-1	9.6
bis (chloromethyl) ether	542-88-1	0.0006
bromodichloromethane	75-27-4	1.2
bromomethane	74-83-9	8.7
carbon tetrachloride	56-23-5	See Table 1[1]
chlordane	57-74-9	1.35

chloroform	67-66-3	See Table 1[1]
chloromethane	74-87-3	188
cis-1,2-dichloroethylene	156-59-2	73
DDT	50-29-3	2.0
di-2-ethylhexyl phthalate	117-81-7	48
dibutyl phthalate	84-74-2	3650
dichlorobenzene (1,4-)	106-46-7	4.3
dichlorobenzidine	91-94-1	1.5
dichlorodifluoromethane	75-71-8	203
dichloromethane (methylene chloride)	75-09-2	See Table 1
dichloropropenes (1,3-)	542-75-6	4.3
dieldrin	60-57-1	0.04
diethyl phthalate	84-66-2	29208
dimethyl phthalate	131-11-3	365000
dinitrophenols (2,4-dinitrophenol)	51-28-5	730
diphenylhydrazine	122-66-7	0.84
endosulfan	115-29-7	219
endrin	72-20-8	11
ethylbenzene	100-41-4	See Table 1
ethylene dibromide (EDB)	106-93-4	See Table 1
fluoranthene	206-44-0	1460
fluorene	86-73-7	1460
gamma-HCH	58-89-9	0.61
heptachlor	76-44-8	0.15
hexachlorobenzene	118-74-1	0.42
hexachlorobutadiene	87-68-3	8.6
hexachlorocyclopentadiene	77-47-4	219
hexachloroethane	67-72-1	16.8
HMX	2691-41-0	1930
isophorone	78-59-1	707
methyl tertiary butyl ether	1634-04-4	125
monochlorobenzene	108-90-7	91.3
m-xylene	108-38-3	203
naphthalene	91-20-3	1.4
nitrobenzene	98-95-3	1.2
N-nitrosodibutylamine	924-16-3	0.02
N-nitrosodiethylamine	55-18-5	0.001
N-nitrosodimethylamine	62-75-9	0.004
N-nitrosodiphenylamine	86-30-6	137
N-nitrosopyrrolidine	930-55-2	0.32
o-xylene	95-47-6	203
pentachlorobenzene	608-93-5	29.2
pentachlorophenol	87-86-5	1.68
perchlorate	14797-73-0	25.6
phenanthrene	85-01-8	1100
phenol	108-95-2	See Table 1
polychlorinated biphenyls (PCB's)	1336-36-3	See Table 1
p-xylene	106-42-3	203
pyrene	129-00-0	1100

RDX	121-82-4	6.1
technical HCH	608-73-1	0.22[1]
tetrachloroethylene	127-18-4	See Table 1
toluene	108-88-3	See Table 1
toxaphene	8001-35-2	0.61
trans-1,2-dichloroethylene	156-60-5	107
tribromomethane (bromoform)	75-25-2	85
trichloroethylene	79-01-6	See Table 1
trichlorofluoromethane	75-69-4	1290
vinyl chloride	75-01-4	See Table 1

[1] The limits for toxic pollutants listed in in Table 1 of this Discharge Permit are the 20.6.2.3103 NMAC standards for ground water.

[2] There is no NMED Tap Water Soil Screening Level in Table A-1 for this toxic pollutant. Instead the EPA Region 6 Tap Water Screening Level has been used.

In the event that effluent limits are exceeded, the Permittees shall enact the contingency plan set forth in this Discharge Permit. Water contaminants that are subject to effective and enforceable limitations in NPDES Permit No. NM0028355 for discharges to Outfall 051 are exempt from the limits set forth in this Condition.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

14. **EFFLUENT LIMITS: MES and SET**-The Permittees shall not discharge treated waste water to either the MES or SET that exceeds the following limits (or is outside the following pH range):

All water contaminants and their associated limits as listed in Table 2.

Table 2. Effluent Quality Limits for Discharges to the MES and SET

Inorganic Chemicals:	CAS#	mg/L
Aluminum (dissolved)	7429-90-5	5.0
Arsenic (dissolved)	7440-38-2	0.1
Barium (dissolved)	7440-39-3	2.0
Boron (dissolved)	7440-42-8	0.75
Cadmium (dissolved)	7440-43-9	0.01
Chromium (dissolved)	7440-47-3	0.1
Chloride (dissolved)	7647-14-5	250.0
Cobalt (dissolved)	7440-48-4	0.05
Copper (dissolved)	7440-50-8	1.3
Cyanide (dissolved)	57-12-5	0.2
Fluoride(dissolved)	16984-48-8	1.6
Iron (dissolved)	7439-89-6	1.0

Inorganic Chemicals:	CAS#	mg/L
Lead (dissolved)	7439-92-1	0.05
Manganese (dissolved)	7439-96-5	0.2
Molybdenum (dissolved)	7439-98-7	1.0
Mercury (total)	92786-62-4	0.002
Nickel (dissolved)	7440-02-0	0.2
Perchlorate (total)	04797-73-0	~~0.011~~ 0.0256
pH (total)		6 – 9
Selenium (dissolved)	7782-49-2	0.05
Silver (dissolved)	7440-22-4	0.1
Sulfate (dissolved)		600.0
Total Dissolved Solids (dissolved)		1000.0
Uranium (dissolved)	7440-61-1	0.03
Zinc (dissolved)	9029-97-4	10.0

Radioactivity:		pCi/L

Nitrogen Compounds:		mg/L

Combined Radium-226 & Radium-228 (total)		30	NO_3-N (dissolved)		10

a. Until the new treatment units at the RLWTF are operational on or before September 30, 2015, the following NO_3-N effluent limit shall be effective for discharges to the MES and SET:
   - Daily Maximum: 30 mg/L
   - Quarterly Average: 10 mg/L

In the event that effluent limits are exceeded, the Permittee shall enact the contingency plan set forth in this Discharge Permit.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

15. **PERSONNEL QUALIFICATIONS**-Personnel responsible for the operation and maintenance and repair of the Facility shall successfully complete a program of classroom instruction or on-the-job training that provides the skills required to ensure the Facility is operated and maintained in a manner that complies with this Discharge Permit and all applicable local, state and federal laws and regulations. At a minimum, the operators shall be competent in the following:
    a. management procedures for hazardous waste materials;
    b. conducting inspections;
    ~~c. repairing or replacing automatic waste feed cut-off systems;~~
    ~~d.~~c. communications or alarm systems;
    ~~e.~~d. emergency response due to unauthorized releases, fire, explosions, or other potential unauthorized releases from the Facility and threat to human health; and
    ~~f.~~e. emergency shutdown operations.

    The operations and maintenance and repair of all or any part of the Facility shall be performed by, or under the direct supervision of, qualified personnel. Facility personnel shall review training and certifications on an annual basis to ensure training and certifications are current with any changes to the Facility's processes.

    The Permittees shall maintain the following documents and records at the Facility for current personnel until closure of the Facility:
    a. The job title for each position at the Facility with a narrative of the position responsibilities, reporting hierarchy, requisite skill, education and other qualifications assigned to the position.
    b. The name of the individual who holds each position and all records documenting training and job experience demonstrating the qualifications of that individual to hold the position.

    The Permittees shall maintain all documents and records pertaining to the

training of operation and maintenance personnel, including former employees, for a period of five years and shall make such documents and records available to NMED upon request.

[20.6.2.3106.C NMAC, 20.7.4 NMAC]

~~16. **EMERGENCY PLAN**-The Permittees shall keep an emergency response plan at the Facility at all times. At a minimum, the plan shall include the following:~~

~~a. Actions Facility personnel must take in response to fires, explosions or any unplanned sudden or non-sudden release of a water contaminant from the Facility to the environment.~~

~~1. A spill prevention and response plan to address all unauthorized releases to the environment or those that pose a threat to human health, chronic or acute.~~

~~2. Communications and collaboration with local, state and federal emergency response personnel.~~

~~3. Names, addresses and phone numbers for all persons qualified to act as an emergency coordinator.~~

~~4. A list of all emergency equipment at the Facility that may be utilized in the event of an emergency, its intended function and physical location.~~

~~5. An evacuation plan for all Facility personnel which describes signals to be used to notify personnel of an evacuation, routes to evacuated the Facility and alternate evacuation routes.~~

~~The emergency response plan shall be reviewed, and updated as necessary, by the Permittees on no less than an annual basis or in the event the plan fails during an emergency, the Facility changes design, construction, or accessibility, key personnel changes or the list of equipment changes. The Permittees shall submit a written summary of the plan and any amendments to NMED no more than 30 days following finalization of the amended plan. The Permittees' written summary shall be provided to the Los Alamos County Emergency Management Coordinator, Los Alamos Fire Department, Los Alamos County Police, Los Alamos Medical Center, New Mexico's Department of Homeland Security and Emergency Management (DHSEM), Pueblo of San Ildefonso, Pueblo of Santa Clara, Pueblo of Jemez and Pueblo of Cochiti, and shall be posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).~~

~~[20.6.2.3109.C NMAC]~~

~~17.~~16. **INSTALLATION OF FLOW METERS**-Within 180 days following the effective date of this Discharge Permit, (by DATE), the Permittees shall install the following flow meters:

a. One flow meter to be installed on the RLW influent line to the Facility at a

location that will capture and measure all influent to the Facility including waste water conveyed to the Facility by alternative methods (e.g. truck).

b. One flow meter to be installed on the effluent line to the SET and to outfall 051 at a location that will capture and measure all discharges of treated water to the SET and Outfall 051. Permittees shall record in a discharge log book the volume discharged to each respective location.

c. One flow meter to be installed on the effluent line to the MES at a location that will capture and measure all discharges of treated water to the MES.

~~d. One flow meter to be installed on the discharge line to Outfall 051 at a location that will capture and measure all effluent discharges to Outfall 051.~~

Within 60 days following the installation of flow meters, and within 240 days following the effective date of this Discharge Permit (by DATE), the Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) written confirmation of the meter installation, describing the type, calibration, and location of each flow meter. The flow meters shall be operational except during repair or replacement. Should a meter fail, it shall be repaired or replaced as soon as practical, but no later than 30 days from the date of the failure. During repair or replacement, an alternative method for determining the volume of RLW influent and effluent shall be used until the meter is repaired or replaced.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

~~18.~~17. **CALIBRATION OF FLOW METERS**-All flow meters referenced in this Discharge Permit (Condition No. 17) shall be capable of having their accuracy ascertained under actual working (field) conditions. A field calibration method shall be developed for each flow meter and that method shall be used to check the accuracy of each respective meter. Field calibrations shall be performed within 180 days following the effective date of this Discharge Permit (by DATE) and, at a minimum, on an annual basis thereafter, and immediately upon repair or replacement of a flow meter.

Flow meters shall be calibrated to within plus or minus 10 percent of actual flow, as measured under field conditions. Field calibrations shall be performed by an individual knowledgeable in flow measurement and in the installation and operation of the particular device in use. A calibration report shall be prepared for each flow meter at the frequency calibration is required.

The flow meter calibration report shall include the following information:

a. the meter location and identification;
b. the method of flow meter field calibration employed;

c. the measured accuracy of each flow meter prior to adjustment indicating the positive or negative offset as a percentage of actual flow as determined by an in-field calibration check;
d. the measured accuracy of each flow meter following adjustment, if necessary, indicating the positive or negative offset as a percentage of actual flow of the meter; and
e. any flow meter repairs made during the previous year or during field calibration.

The Permittees shall maintain records of flow meter calibration at a location accessible for review by NMED during Facility inspections.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC, 20.6.2.3109.H NMAC]

B. Monitoring and Reporting

~~19.~~18. **METHODOLOGIES-**Unless otherwise approved in writing by NMED, the Permittees shall conduct sampling and analysis in accordance with the most recent edition of the following documents:
a. American Public Health Association, Standard Methods for the Examination of Water and Waste water;
b. U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste;
c. U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey;
d. American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water;
e. U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition;
f. Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations; or
g. Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy;

[20.6.2.3107.A NMAC, 20.6.2.3107.B NMAC]

~~20.~~19. **MONITORING REPORTS-**The Permittees shall submit monitoring reports to NMED on a quarterly basis and shall post all reports on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated). Quarterly sampling and analysis as required in this Discharge Permit shall be performed within the following periods and reports shall be submitted as described below:
a. Sampling and analysis completed between January 1 and March 31– report to be submitted to NMED by May 1;
b. Sampling and analysis completed between April 1 and June 30 – report to

be submitted to NMED by August 1;
c. Sampling and analysis completed between July 1 and September 30– report to be submitted to NMED by November 1;
d. Sampling and analysis completed between October 1 and December 31– report to be submitted to NMED by February 1.

[NMSA 1978, § 74-6-5.D, 20.6.2.3109.B NMAC, 20.6.2.3109.C NMAC, 20.6.2.3107.A NMAC]

~~21.~~20. **INFLUENT VOLUMES RLW**-The Permittees shall measure the volume of all RLW influent waste water being conveyed to the Facility on a daily basis using the flow meter required to be installed by this Discharge Permit.

The total daily and monthly volumes of RLW influent conveyed to the Facility shall be submitted to NMED in the quarterly monitoring reports and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC, 20.6.2.3109.H NMAC]

~~22.~~21. **INFLUENT VOLUMES TRU**-The Permittees shall estimate the volume of TRU influent waste water being conveyed to the Facility using electronic sensors which measure tank levels in both the acid waste and caustic waste influent tanks.

The electronic sensors on these tanks shall be operational except during repair or replacement. Should a sensor used to calculate TRU influent volumes fail, it shall be repaired or replaced as soon as practical, but no later than 30 days from the date of the failure. During repair or replacement, an alternative method for determining the flow of TRU influent shall be used until the defective sensor is repaired or replaced.

Volumes shall be determined by calculation using the head change and tank size. Operators shall record changes in influent tank levels whenever a batch of TRU waste water is conveyed to the Facility. The total daily and monthly volumes of TRU influent received by the Facility shall be submitted to NMED in the quarterly monitoring reports and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC, 20.6.2.3109.H NMAC].

~~23.~~22. **DISCHARGE VOLUMES**-The Permittees shall measure and record the volume of treated waste water discharged to the SET, MES and Outfall 051 on a daily basis. The Permittees shall determine effluent volumes as follows:
a. Discharge volumes to the SET shall be determined by daily totalized meter readings on the flow meter required in this Discharge Permit, located on the

effluent line to the unit.

b. Discharge volumes to Outfall 051 shall be determined by daily totalized meter readings on the flow meter required in this Discharge Permit, located on the effluent line to the outfall.
c. Discharge volumes to the MES shall be determined by daily totalized meter readings on the flow meter required in this Discharge Permit, located on the effluent line to the unit.

The daily and monthly discharge volumes shall be submitted to NMED in the quarterly monitoring reports and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC, 20.6.2.3109.H NMAC]

~~24.~~23. **WASTE TRACKING-**The Permittees shall maintain written or electronic records of all waste streams conveyed to the Facility. At a minimum, the Permittees shall record the following information:

a. The name of the generator and a unique waste stream identification number.
b. The time period that the Permittee approves the generator to convey the wastestream to the Facility.
c. The location where the waste stream was generated.
d. Estimated volume and duration of the waste stream, including:
   - estimated number of days per year discharge will occur;
   - average daily volume received by the Facility when discharge occurs;
   - maximum daily volume received by the Facility each year when discharge occurs; and
   - estimated total volume discharged to the facility each year.
e. The waste stream characterization (i.e., analytical data or knowledge of process).
f. The names of the personnel that approved the receipt of the waste at the Facility (e.g., Waste Certifying official, RCRA Reviewer, and Facility Reviewer).

The Permittees shall maintain all waste tracking records required by this Condition for five years from the date of the final discharge from the generator of that waste stream. The Permittees shall furnish upon request, and make available at all reasonable times for inspection, the waste tracking records required in this Discharge Permit.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

~~25.~~24. **EFFLUENT SAMPLING -**The Permittees shall sample and analyze effluent waste streams discharged to Outfall 051, the SET, and the MES.

Treated effluent samples shall be collected once per calendar month for any

month in which a discharge occurs to Outfall 051. The Permittees shall collect a grab sample of treated effluent which shall be analyzed for all water contaminants listed in 20.6.2.3103 NMAC, TKN and all toxic pollutants as defined in 20.6.2.7.WW NMAC.

Treated effluent samples shall be collected once per calendar month for any month in which a discharge occurs to the MES or SET. The Permittees shall collect a grab sample of treated effluent which shall be analyzed for TKN, NO_3-N, TDS, Cl, F and perchlorate.

The Permittees shall collect and analyze effluent samples once per quarter for any quarterly period in which a discharge occurs to the MES or SET. The Permittees shall collect a grab sample of treated effluent which shall be analyzed for all water contaminants listed in 20.6.2.3103 NMAC and all toxic pollutants as defined in 20.6.2.7.WW NMAC.

All samples shall be properly prepared, preserved, transported and analyzed in accordance with the parameters and methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the quarterly monitoring reports and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated). For any calendar month during which no discharge occurs, the Permittees shall submit to NMED a report so stating.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

~~26.~~25. **SOIL MOISTURE MONITORING SYTEM FOR THE SET**-Within 120 days following the effective date of this Discharge Permit (by DATE), the Permittees shall submit to NMED for approval a proposed workplan, design and schedule for the installation of a moisture monitoring system for the detection of unauthorized releases from the SET. The system shall be designed to detect, at a minimum, absolute variations in volumetric soil moisture content below the SET within a precision of 2%. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

The Permittees shall install the moisture monitoring boreholes in accordance with the final workplan, design and schedule approved by NMED.

The Permittees shall use neutron moisture probes to log the moisture monitoring boreholes following installation to establish baseline conditions and to develop a calibration data set for the probe and a soil moisture action level, to be approved by NMED, which indicates that moisture is being detected below the SET at levels that are above baseline conditions.

Within 90 days following acceptance of the final construction of the moisture monitoring boreholes by the Permittees, the Permittees shall submit to NMED for approval the following items:

a. Confirmation that the moisture monitoring borehole installation has been completed.
b. Record drawings of the final design of the completed installation.
c. Reports on the baseline moisture condition and neutron probe calibration.
d. A proposed action level to be used to indicate that elevated moisture has been detected beneath the SET.

Upon approval or approval with conditions by NMED, of the completed installation and soil moisture action level, the Permittees shall perform quarterly soil moisture monitoring in the moisture monitoring boreholes. The Permittees' submittals along with any NMED response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

In the event that the soil moisture content beneath the SET exceeds the NMED approved action level, the Permittees shall enact the contingency plan set forth in this Discharge Permit.

The moisture monitoring boreholes and neutron probes shall be maintained so that the boreholes remain accessible for monitoring and the probe remains operational. Should the system or a component of the system fail, it shall be repaired or replaced as soon as possible, but no later than 90 days from the date of the failure. For good cause, NMED may approve a longer period.

The Permittees shall maintain all documents and records pertaining to the quarterly monitoring events and maintenance or repair of the soil moisture monitoring system for a period of five years and shall make such documents and records available to NMED upon request.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

~~27.~~26. **GROUND WATER FLOW**-The Permittees shall submit a ground water flow direction report to NMED on an annual basis. The report shall contain regional, intermediate and alluvial aquifer ground water depth-to-water measurements, existing interconnections with other aquifers (if any are known), a narrative description of the known characteristics of the ground water elevation and flow direction within each aquifer and, to the extent practicable, ground water elevation contour map(s) for the aquifers underlying Sandia, Pajarito, Ten-site and Mortandad Canyons.

The ground water elevation contour maps shall depict the ground water flow direction based on the most recent representative ground water elevation data

from monitoring wells located in the subject areas. Ground water elevations shall be estimated using common interpolation methods to a contour interval approved by NMED and appropriate to the available data. Ground water elevation contour maps shall depict the water table and potentiometric surfaces, ground water flow directions, and the location and name of each monitoring well and discharge location unit associated with this Discharge Permit.

The ground water flow direction report shall be submitted to NMED in the monitoring report due on February 1 of each year and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.C]

~~28.~~27. **GROUND WATER MONITORING-**The Permittees shall collect ground water samples from the following ground water monitoring wells on a quarterly basis and analyze the samples for TKN, NO_3-N, TDS, Cl, F and perchlorate.

a. **MCO-4B~~MCO-3~~**- previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.
b. **MCO-7**-previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.
c. **MCOI-6**-previously constructed and located in the intermediate aquifer presumed to be hydrologically downgradient of Outfall 051.

The Permittees shall collect ground water samples from the following ground water monitoring wells on an annual basis and analyze the samples for all water contaminants listed in 20.6.2.3103 NMAC and all toxic pollutants listed in 20.6.2.7.WW.

a. **MCO-4B~~MCO-3~~**- previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.
b. **MCO-7**-previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.
c. **MCOI-6**-previously constructed and located in the intermediate aquifer presumed to be hydrologically downgradient of Outfall 051.
d. **R-46-** previously constructed and located in the regional aquifer, downgradient of the RLWTF.
e. **R-60-** previously constructed and located in the regional aquifer, downgradient of the RLWTF.

Sampling shall be done in accordance with the methods authorized in this Discharge Permit and using the following procedure:

a. Measure the ground-water surface elevation, to the nearest hundredth (0.01) of a foot, from the top of the casing, each time ground water is sampled.

~~b. Measure the total depth of the monitoring well to the nearest hundredth (0.01) of a foot.~~

~~c.~~b. Calculate total volume of water within the monitoring well using the most recent total depth measurement.

~~d.~~c. For intermediate and regional aquifer wells, ~~P~~purge three well volumes of water from the monitoring well prior to sampling, using an adequate pumping system. For alluvial wells, purge well for a minimum of one well volume and until filed parameters stabilize.

~~e.~~d. Collect samples from the well using appropriate methods to avoid cross-contamination of the samples and sources.

~~f.~~e. Prepare the Chain-of-Custody, preserve the sample and transport samples in accordance with methods authorized in this Discharge Permit.

~~g.~~f. Samples shall be analyzed by an analytical laboratory using methods authorized in this Discharge Permit.

The Permittees may submit to NMED for approval a written proposed alternate monitoring well sample collection plan that would apply in lieu of this Permit Condition. The Permittees shall provide a justification for all proposed changes. Upon NMED approval or partial approval of such alternate plan, the approved plan or portion thereof shall apply and be fully enforceable in lieu of this Permit Condition. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

The Permittees shall use sampling and analytical methods that ensure the production of accurate and reliable data indicative of ground water quality in all ground water that may be affected by any discharges from the Facility. The Permittees shall prepare ground water monitoring reports describing, in detail, the sampling and analytical methods used. The ground water monitoring reports shall contain, at minimum, the following information:

a. date sample was collected;
b. time sample was collected;
c. individuals collecting sample;
d. monitoring well identification;
e. physical description of monitoring well location;
f. ground-water surface elevation ;
g. total depth of the well;
h. total volume of water in the monitoring well prior to sample collection;
i. total volume of water purged prior to sample collection;
j. description of sample methods (i.e., constituent being sampled for, container used, preservation methods);
k. chain-of custody; and
l. map, to scale, identifying monitoring wells and their location.

The ground water monitoring report shall be submitted to NMED with the

quarterly monitoring report required in this Discharge Permit and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

C. Contingency Plans

~~29.~~28. **CONTAINMENT**-The Permittees shall institute corrective actions, as necessary, to ensure the protection of ground water and human health. In the event that a unit or system or secondary containment for a unit or system reveals damage that could result in structural failure or a release to the environment, the Permittees shall take the following actions:

a. The Permittees shall remove the unit or system from service immediately.
b. The Permittees shall take immediate, and if necessary temporary, corrective actions to minimize the potential for a release.
c. If failure of the unit or system or secondary containment resulted in a release to the environment, the Permittees shall provide NMED oral notification of the release in 20.6.2.1203 NMAC within 24 hours of learning of the release and take subsequent corrective actions as required in this Discharge Permit.
d. Within 90 days following identification of the potential failure or release, the Permittees shall submit to NMED for approval a written corrective action report to include, at minimum, the following:
    1) Identification of the unit or system, or secondary containment for a unit or system in which the failure was observed.
    2) The date and time the failure was observed and the date and time it was estimated to have begun.
    3) The potential cause of the failure.
    4) For units in which a release occurred to secondary containment but was not released to the environment, the rate at which the release occurred and total volume released to the secondary containment.
    5) The characteristics of the waste stream being treated, stored or conveyed by the unit or system, with analytical results from waste stream samples taken with date, time, technical staff collecting the sample and the QA/QC lab report.
    6) The corrective actions taken to remediate the failure or release with a timeline of when actions were implemented.
    7) Long-term actions, if any, that are proposed to be employed for maintaining the integrity of the secondary containment and the schedule for implementing such actions.
    8) Ongoing measures for monitoring, inspecting, and determining structural integrity of the secondary containment.
    9) Proposed operation and maintenance and repair protocol, if applicable, to be instated to prevent future failures.

Upon NMED approval of the corrective action report, the Permittees shall implement any approved long-term actions to maintain the integrity of the secondary containment, and any other approved measures or protocols, according to the approved schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC]

~~30.~~29. **WATER-TIGHTNESS**-In the event that any unit or system does not demonstrate water-tightness in accordance with this Discharge Permit, or should inspection reveal damage to the unit that could result in structural failure, the Permittees shall take the following actions:

a. If the unit or system failure resulted in an unauthorized release, either through a primary or secondary containment unit or system, the Permittees shall provide NMED oral notification of the release in 20.6.2.1203 NMAC within 24 hours of learning of the release.

1. If the failed unit or system does not have secondary containment the Permittees shall take the following corrective actions:

1) the Permittees shall remove the unit or system from service immediately; and
2) as soon as possible following the failure of the unit or system, the Permittees shall submit to NMED for approval a written proposal including a schedule for corrective actions to be taken to repair or permanently cease operation of the unit or system.

2. If the failed primary unit or system has secondary containment, the Permittees shall submit to NMED for approval a written proposal for corrective actions, within 90 days following the failure of the unit or system. The corrective action proposal shall include a schedule for corrective actions to be taken to repair or to permanently cease operation of the unit or system.

If repair or replacement of a unit or system requires construction, the Permittees shall submit plans and specifications to NMED with the proposed corrective actions. The Permittees' proposal shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated). Plans and specifications shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978).

Upon NMED approval, the Permittees shall implement the approved corrective actions according to the approved schedule. The Permittees shall post NMED's response on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

Prior to placing a repaired or replaced unit or system back into service, the Permittee shall repeat the water-tightness testing in accordance with Condition 8 to verify the effectiveness of the repair or replacement, and submit a report detailing the completion of the corrective actions to NMED. The report shall include the date of the test, the name of the individual that performed the test, written findings, photographic documentation of the unit's interior and water tightness test results. If notified to do so by NMED, the Permittees shall also submit record drawings that include the final, construction details of the unit. Record drawings shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978). The Permittees' submittal shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC]

~~31.~~30. **SETTLED SOLIDS REMOVAL-**In the event the average settled solids accumulation in an open unit or system exceeds one foot, or in the event that the Permittees otherwise plan to initiate removal of settled solids from an open unit or system, the Permittees shall propose a plan for the removal and disposal of the settled solids from the unit or system. Within 120 days following the determination of settled solids depth, and prior to any settled solids removal, the Permittees shall submit to NMED for approval a written settled solids removal and disposal plan. The plan shall include characterization of the settled solids, the estimated volume of settled solids to be removed, a method for removal throughout the unit or system in a manner that is protective of the structural integrity of the unit or system, a schedule for completing the settled solids removal and disposal, and a description of how the settled solids will be contained, transported, and disposed of in accordance with all local, state, and federal laws and regulations. Upon NMED approval, the Permittees shall implement the plan according to the approved schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC,]

~~32.~~31. **DAMAGE TO STRUCTURAL INTEGRITY-**In the event that an inspection required in this Discharge Permit, or any other observation, reveals significant damage likely to affect the structural integrity of a unit or system or any of its associated components, or its ability to function as designed, the Permittees shall propose the repair or replacement of the treatment system or its associated components. Within 90 days after discovery by the Permittees or following notification from NMED that corrective action is required, the Permittees shall submit to NMED for approval a written corrective action plan that includes a schedule for implementation and completion. Upon NMED

approval, the Permittees shall implement the plan according to the approved schedule. The Permittees shall remedy any deterioration or malfunction of equipment or structures which are discovered during inspection. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC]

~~33.~~32. **FREEBOARD EXCEEDANCE**-In the event that freeboard, two feet or an NMED approved alternative, is not maintained in an open tank, impoundment or other open unit or system that contains a liquid or semi-liquid, the Permittees shall take immediate corrective actions to restore the required freeboard.

In the event that the required freeboard cannot be restored within a period of 72 hours following discovery, the Permittees shall submit to NMED for approval a proposed corrective action plan to restore the required freeboard within 15 days following the date when exceedance of the required freeboard was initially discovered. The plan shall include a schedule for completion of corrective actions and quantifiable assessments to demonstrate preservation of the required freeboard for a period no less than five years. Upon NMED approval, the Permittees shall implement the corrective action plan according to the approved schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC]

~~34.~~33. **EFFLUENT EXCEEDANCE**-In the event that analytical result of an effluent sample indicate an exceedance for any of the effluent limits set forth by this Discharge Permit, the Permittees shall collect ~~analyze~~ a subsequent sample for the particular analyte that was in exceedance within 24 hours following receipt of analytical results indicating the exceedance. In the event the analytical results of the subsequent sample confirm that the maximum limitation has been exceeded (i.e., confirmed exceedance), the Permittees shall take the following actions:

Within 24 hours of becoming aware of a confirmed exceedance, the Permittees shall:

~~a. cease discharges to the system that limits have been exceeded with the exception of the MES to which a confirmed exceedance shall not require immediate cessation;~~

~~b.~~a. notify the NMED Ground Water Quality Bureau that an effluent limit set forth in this Discharge Permit has been confirmed to be in exceedance; and

~~c.~~b. increase the frequency of effluent sampling to adequately establish quality of all discharges by batch.

Within one week of becoming aware of a confirmed exceedance, the Permittees shall:

a. submit copies of the analytical results for the initial and subsequent sample confirming the exceedance to NMED;
b. examine the internal operational procedures, and maintenance and repair logs, required by Condition 11 of this Discharge Permit, for evidence of improper operation or function of the units and systems; and
c. conduct a physical inspection of the treatment system to detect abnormalities, and correct any abnormalities.

A report detailing the corrections made shall be submitted to NMED within 30 days following correction. The Permittees' report shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

In the event that analytical results from any two independent monthly effluent samples indicate an exceedance of the effluent limits for all discharge systems set forth in this Discharge Permit within any 12-month period, the Permittees shall propose to modify operational procedures or upgrade the treatment process to achieve the effluent limits. Within 90 days of receipt of the second sample analysis in which effluent limits have been exceeded, the Permittees shall submit to NMED for approval a corrective action plan. The plan shall include a schedule for completion of corrective actions. Upon NMED approval, the Permittees shall implement the corrective action plan according to the approved schedule. The Permittees' corrective action plan along with NMED's response shall be posted by the Permittees on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

When analytical results from three consecutive months of effluent sampling do not exceed the maximum limitations set forth by this Discharge Permit, the Permittees are authorized to return to a monthly or quarterly monitoring frequency as required in this Discharge Permit.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3107.C NMAC]

~~35.~~34. **SOIL MOISTURE DETECTION SYSTEM EXCEEDANCE**-In the event that the soil moisture detection system for the SET detects a soil moisture increase beneath the SET that exceeds the NMED approved action level, the Permittees shall take the following corrective actions:

a. Notify the NMED Ground Water Quality Bureau within 15 days following the date when the soil moisture was initially discovered to exceed the action level.

b. Propose the source of the increased soil moisture beneath the SET to NMED within 60 days following the date when the soil moisture was initially discovered to exceed the action level. Include the basis for the determination.

In the event the source of the soil moisture exceedance is demonstrated to be associated with failure of the SET, the Permittees shall cease discharges to the SET and submit a corrective action plan to NMED, for approval, within 120 days following the date when the soil moisture was initially discovered to exceed the action level. At a minimum, the corrective action plan shall include the following:

a. removal of all standing liquid from one or both basins (as appropriate);
b. a proposal for repairing or replacing the synthetic liners within the SET, if leakage through the synthetic liners is found to be the source, or for other repairs;
c. a plan for re-instituting soil moisture monitoring following repairs to the SET to demonstrate that the repairs resolved the source of the increased soil moisture beneath the SET; and
d. a schedule for implementation of the corrective action plan elements.

In the event the source of the soil moisture exceedance is demonstrated to be associated with an occurrence other than a failure of the SET, the Permittees shall submit a corrective action plan to NMED, for approval, within 120 days following the date when the soil moisture was initially discovered to exceed the action level. The corrective action plan shall include any actions necessary to ensure the soil moisture detection system is operating within its intended function as required by this Discharge Permit including, but not limited to, re-calibration.

Upon NMED approval, or approval with conditions, the Permittees shall implement the corrective action plan according to the approved schedule. The Permittees' corrective action plan along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.E NMAC]

~~36.~~35. **MONITORING WELL LOCATION-**In the event that ground water flow information obtained pursuant to this Discharge Permit indicates that a monitoring well is not located hydrologically downgradient of the discharge location it is intended to monitor, NMED may require the Permittees to install a replacement well or wells. Within 30 days following receipt of such notification from NMED, the Permittees shall submit to NMED for approval a well installation work plan, describing each proposed well location, drilling methods and well specifications, and proposing a schedule for construction. Upon NMED approval, the Permittees shall construct the replacement well or

wells according to the approved work plan and schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

Within 90 days following well completion, the Permittees shall survey the elevation and location of the newly installed replacement monitoring well or wells. Within 120 days following well completion, the Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) construction and lithologic logs, survey data, and a ground water elevation contour map.

Replacement wells shall be located, installed, and completed in accordance with the attachment titled: *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions, Revision 1.1*, March 2011.

[NMSA 1978, § 74-6-5.D, 20.6.2.3109.B NMAC]

~~37.~~36. **MONITORING WELL CONSTRUCTION**-In the event that information available to NMED indicates that a well is not constructed in a manner consistent with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Guidelines, Revision 1.1*, March 2011; contains insufficient water to effectively monitor ground water quality; or is not completed in a manner that is protective of ground water quality, NMED may require the Permittees to install a replacement well or wells. Within 90 days following receipt of such notification from NMED, the Permittees shall submit to NMED for approval a well installation work plan, describing each proposed well location, drilling methods, well specifications, and proposed schedule for construction. Upon NMED approval, the Permittees shall construct the replacement well or wells according to the approved work plan and schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

Within 90 days following well completion, the Permittees shall survey the elevation and location of the newly installed replacement monitoring well or wells. Within 120 days of well completion, the Permittees shall submit to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) construction and lithologic logs, survey data, and a ground water elevation contour map.

Replacement wells shall be located, installed, and completed in accordance with the attachment titled: *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions, Revision 1.1*, March 2011.

Upon completion of the replacement monitoring well, the monitoring well

requiring replacement shall be properly plugged and abandoned. Well plugging, and abandonment and documentation of the abandonment procedures shall be completed in accordance with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions, Revision 1.1*, March 2011, and all applicable local, state, and federal laws and regulations. The well abandonment documentation shall be submitted to NMED and posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) within 60 days of completion of well plugging activities.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC]

~~38.~~37. **GROUND WATER EXCEEDANCE-** NMED reviews ground water data that is generated by the Permittees from samples collected from the monitoring wells identified in this Discharge Permit and other monitoring wells in the vicinity of the Facility. The Permittees report newly detected ground water quality standard exceedances or the newly detected toxic pollutants (as defined in this Discharge Permit and in 20.6.2.7.WW NMAC) in ground water for the entire Laboratory to NMED. If NMED determines that a ground water quality standard is exceeded or that a toxic pollutant is present in ground water, potentially due to a discharge associated with the Facility or defined systems in this Discharge Permit, the Permittees shall submit a ground water investigation/source control workplan to NMED for approval within 60 days following notification to do so by NMED. The Permittees' workplan along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).
At a minimum, the ground water investigation/source control workplan shall include the following elements:

a. a proposal to investigate the source, nature and extent of the ground water contamination, if unknown, which may utilize existing ground water monitoring wells or may propose the installation of new monitoring wells, as appropriate;
b. a proposal to mitigate the discharge or mobilization of the water contaminant which might be causing ground water contamination, as appropriate; and
c. a schedule for implementation of the workplan and submittal of a report to NMED.

Upon NMED approval of the ground water investigation/source control workplan, or approval of the plan with conditions, the Permittees shall implement the workplan and submit a written report to NMED and post on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated) in accordance with the approved schedule.

Should the findings of the ground water investigation reveal that a discharge associated with the Facility or defined systems in this Discharge Permit is a source of the ground water contamination, the Permittees shall abate water pollution pursuant to 20.6.2.4000 through 20.6.2.4115 NMAC, following notification from NMED.

This Permit Condition does not apply to an exceedance of ground water quality standard or the presence of a toxic pollutant in ground water unrelated to a discharge associated with the Facility or defined systems in this Discharge Permit, to the extent that abatement of such ground water contamination is occurring, or will occur, pursuant to and in accordance with the March 1, 2005 Compliance Order on Consent (Consent Order) agreed to by NMED, DOE, and the Regents of the University of California (predecessor to LANS).

[NMSA 1978, § 74-6-5.D, 20.6.2.3109.E NMAC, 20.6.2.3107.A NMAC]

~~39.~~38. **SPILL OR UNAUTHORIZED RELEASE**-In the event that a release not authorized in this Discharge Permit occurs, the Permittees shall take measures to mitigate damage from the unauthorized discharge and initiate the notifications and corrective actions required in 20.6.2.1203 NMAC and summarized below.

Within 24 hours following discovery of the unauthorized discharge, the Permittees shall orally notify NMED and provide the following information:

a. the name, address, and telephone number of the person or persons in charge of the Facility;
b. the identity and location of the Facility;
c. the date, time, location, and duration of the unauthorized discharge;
d. the source and cause of unauthorized discharge;
e. a description of the unauthorized discharge, including its estimated chemical composition;
f. the estimated volume of the unauthorized discharge; and
g. any actions taken to mitigate immediate damage from the unauthorized discharge.

Within one week following discovery of the unauthorized discharge, the Permittees shall submit written notification to NMED with the information listed above and any pertinent updates.

Within 15 days following discovery of the unauthorized discharge, the Permittees shall submit to NMED for approval a corrective action report and plan describing any corrective actions taken and to be taken to address the unauthorized discharge that includes the following:

a. a description of proposed actions to mitigate damage from the unauthorized discharge;

b. a description of proposed actions to prevent future unauthorized discharges of this nature; and
c. a schedule for completion of proposed actions.

Upon NMED approval of the corrective action report and plan, the Permittees shall implement the approved actions according to the approved schedule. The Permittees' corrective action report and plan along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

In the event that the unauthorized discharge causes or may with reasonable probability cause water pollution in excess of the standards and requirements of 20.6.2.4103 NMAC, and the water pollution will not be abated within 180 days after notice is required to be given pursuant to 20.6.2.1203.A(1) NMAC, the Permittees may be required to abate water pollution pursuant to 20.6.2.4000 through 20.6.2.4115 NMAC.

Nothing in this condition shall be construed as relieving the Permittees of the obligation to comply with all requirements of 20.6.2.1203 NMAC.

[NMSA 1978, § 74-6-5.D, 20.6.2.1203 NMAC, 20.6.2.3109.B NMAC]

~~40.~~39. **FAILURES IN DISCHARGE PLAN/DISCHARGE PERMIT**-In the event that NMED or the Permittees identify any failure of the discharge plan or this Discharge Permit not specifically set forth herein, NMED may require the Permittees to submit for its approval a corrective action plan and a schedule for completion of corrective actions to address the failure. Additionally, NMED may require a Discharge Permit modification to achieve compliance with Part 20.6.2 NMAC. The Permittees' corrective action plan along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[20.6.2.3107.A NMAC, 20.6.2.3109.E NMAC]

D. Closure

~~41.~~40. **CESSATION OF OPERATION OF SPECIFIC UNITS-** Within ~~60~~180 days of the effective date of this Discharge Permit (by DATE), the Permittees shall permanently cease operation of the following units:

a. the 75,000 gallon concrete influent storage tank (75K tank);
b. the 100,000 gallon steel influent storage tank (100K tank);
c. the two 26,000 gallon concrete clarifiers located within Building 1 of TA-50;
d. the two 25,000 gallon concrete effluent storage tanks (WM2-N, WM2-S); and

e. the gravity filter located within Building 1 of TA-50.

Upon the cessation of operation of these specific units, the Permittees shall implement the requirements for stabilization of the individual units, systems and components in accordance with this Discharge Permit.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.E NMAC]

~~42.~~41. **STABILIZATION OF INDIVIDUAL UNITS AND SYSTEMS -** Within 90 days from the permanent cessation of operation of a unit or system, the Permittees shall submit to NMED for approval a written work plan for the stabilization of the unit or system for which operation has ceased. The work plan shall identify steps necessary to ensure that the unit or system can no longer receive a discharge and that no further releases of water contaminants occur as a result of the unit or system. At a minimum, the work plan shall include the following:

a. identification of the unit or system in which cessation of use has occurred;
b. a detailed description of the function of the unit or system;
c. a detailed description of the historic influent waste streams to the unit or system;
d. a detailed description of all conveyance lines leading to the unit or system and a description of how the lines will be terminated, plugged, re-routed or bypassed so that a discharge to the unit or system can no longer occur;
e. identification of those portions of the approved Final Closure Plan required in Condition 42 of this Discharge Permit that will be implemented;
f. a description of all proposed interim measures, actions and controls that will be implemented until such time of final removal of the unit, system or component to prevent the release of water contaminants into the environment; to prevent water contaminants, including storm water run-on and run-off, from moving into ground water; and to prevent water contaminants from posing a threat to human health; and
g. a schedule for implementation.

Upon NMED approval of the work plan, the Permittees shall implement the plan according to the approved schedule.

Within 60~~30~~ days following the completion of all interim measures, actions and controls, the Permittees shall submit to NMED for approval a final written report on the actions taken to implement the partial closure. The Permittees' workplan and final written report along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.E NMAC]

~~43.~~42. **FINAL CLOSURE PLAN -**

Permanent Facility Closure Conditions

1. RLWTF: Within 120 days after permanent cessation of discharge to the RLWTF and its collection system (excluding the SET and Outfall 051). The permittees shall:

a. Remove or plug and abandon in place the lines discharging into the RLWTF collection system so that a discharge can no longer occur;
b. Drain wastewater from the RLWTF collection system and dispose of that wastewater in accordance with applicable local, state, and federal laws; and
c. Remove solids and sludge from the RLWTF collection system and contain, transport, and/or dispose of that material in accordance with applicable local, state, and federal laws.

Within **[Insert appropriate number]** days after permanent cessation of discharge to the RLWTF and its collection system, the Permittees shall:

d. Remove, or permanently plug and abandon in place, all collection system lines leading to the RLWTF;
e. Drain or evaporate any remaining wastewater from the RLWTF, including storage tanks and all other components, and dispose of any drained wastewater in accordance with applicable local, state, and federal laws;
f. Remove solids and sludge from the RLWTF tanks and components and contain, transport, and/or dispose of such material in accordance with applicable local, state, and federal laws; and
g. Remove or demolish all RLWTF components, and re-grade the area with suitable fill to blend with surface topography, promote positive drainage, and prevent ponding.

2. -SET: Within **[insert appropriate number]** days after permanent cessation of discharge to the SET, the line leading to the SET shall be plugged so that a discharge can no longer occur and wastewater shall be drained or evaporated from the SET and shall be disposed of in accordance with applicable local, state, and federal laws.

Within **[insert appropriate number]** days after permanent cessation of discharge to the SET, the Permittees shall submit a solids removal and disposal plan to NMED for approval describing how solids will be removed and disposed of in compliance with applicable local, state, and federal laws. Within **[insert appropriate number]** days of NMED approval of the solids removal and disposal plan, the Permittees shall begin implementation of that plan.

Within one year after completion of the solids removal and disposal plan

requirements, the Permittees shall:

a. Remove, or permanently plug and abandon in place, all lines leading to and from the SET;
b. Remove the SET's concrete floor, walls, and liners;
c. Re-grade the site with suitable fill to blend with surface topography, promote positive drainage and, prevent ponding; and
d. Submit a closure report to NMED describing the decommissioning and the closure activities, including photographic documentation.

3. NPDES Outfall 051: Within **[insert appropriate number]** days after permanent cessation of the operation of NPDES Outfall 051, the Permittees shall:

a. Remove or plug all lines leading to the NPDES Outfall so that a discharge can no longer occur; and
b. Submit a closure report to NMED describing the NPDES Outfall decommissioning and closure activities, including photographic documentation.

When all closure and post-closure requirements have been completed, the Permittees may submit to NMED a written request for termination of the Discharge Permit.

~~44. **FINAL CLOSURE PLAN** Within 180 days from the effective date of this Discharge Permit (by DATE), the Permittees shall submit to NMED for approval a written closure plan for the Facility. The closure plan shall identify steps necessary to perform final closure of the Facility, including all units and systems at the Facility. At a minimum, the closure plan shall include the following:~~

~~h. A detailed description of how each unit and system at the Facility will be closed.~~
~~i. A detailed description of the actions to be taken to decommission, demolish, and remove each unit, system, and other structure, including any secondary containment system components.~~
~~j. A detailed description of the actions and controls that will be implemented during closure to prevent the release of water contaminants into the environment; to prevent water contaminants, including run-on and run-off, from moving into ground water; and to prevent water contaminants from posing a threat to human health.~~
~~k. A detailed description of the methods to be used for decontamination of the site and decontamination of equipment used during closure.~~
~~l. A detailed description of the actions that will be taken to reclaim the site, including placement of clean fill material and re-grading to blend with surrounding surface topography, minimize run-on and run-off, and prevent ponding of water, and re-vegetation.~~
~~m. A detailed description of all monitoring, maintenance and repair, and~~

~~controls that will be implemented after closure, and of all actions that will be taken to minimize the need for post-closure monitoring, maintenance and repair, and controls.~~

~~n. A ground-water monitoring plan to detect water contaminants that might move directly or indirectly into ground-water after closure, which shall provide for, at a minimum, eight consecutive quarters of ground-water monitoring after completion of closure.~~

~~o. A detailed description of the methods that will be used to characterize all wastes generated during closure, including treatment residues, contaminated debris, and contaminated soil, in compliance with all local, state, and federal laws and regulations.~~

~~p. A detailed description of the methods that will be used to remove, transport, treat, recycle, and dispose of all wastes generated during closure in compliance with all local, state, and federal laws and regulations.~~

~~q. A detailed schedule for the closure and removal of each unit and system, which lists each proposed action and the estimated time to complete it.~~

~~If the Permittees make any changes to the Facility that would affect the implementation of the approved Closure Plan, the Permittees shall submit to NMED for approval a written notification and an amended Closure Plan. All documents required to be submitted to NMED in this Condition by the Permittees along with NMED's responses shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).~~

~~[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.E NMAC]~~

~~45.~~43. **FINAL CLOSURE**-Upon cessation of operation of the Facility, the Permittees shall implement the approved Final Closure Plan according to the approved schedule therein.

Once closure begins, and until all closure requirements (excluding post-closure ground water monitoring) are completed, the Permittees shall submit to NMED, with the monitoring reports required in this Discharge Permit, quarterly status reports describing the closure actions taken during the previous reporting period and the actions scheduled for the next reporting period. Within 90 days following the completion of the closure, the Permittees shall submit to NMED for approval a final written report on the actions taken to implement closure. The Permittees' quarterly status reports and final written report, along with NMED's response, shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.E NMAC]

~~46.~~44. **POST-CLOSURE GROUND WATER MONITORING-** After closure has been completed and approved by NMED, the Permittees shall continue ground water monitoring of any wells dedicated to the Facility according to the approved Closure Plan to confirm that the standards of 20.6.2.3103 NMAC are not exceeded and toxic pollutants in 20.6.2.7.WW NMAC are not present in ground water. Such monitoring shall continue for a minimum of eight consecutive quarters.

If monitoring results show that a ground water quality standard in 20.6.2.3103 NMAC is exceeded or a toxic pollutant in 20.6.2.7.WW NMAC is present in ground water, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

Upon demonstration confirming ground water quality does not exceed the standards of 20.6.2.3103 NMAC and does not contain a toxic pollutant in 20.6.2.7.WW NMAC, the Permittees may submit a written request to cease ground water monitoring activities. The Permittees' request for cessation of ground water monitoring along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

Following notification from NMED that post-closure monitoring may cease, the Permittees shall plug and abandon the monitoring well in accordance with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions, Revision 1.1,* March 2011.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.F NMAC, 20.6.2.4103.D NMAC]

~~47.~~45. **TERMINATION-** When all closure and post-closure requirements have been met, the Permittees may submit to NMED a written request for termination of the Discharge Permit. The Permittees' request to terminate along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

If the Discharge Permit expires or is terminated for any reason and any standard of 20.6.2.3103 NMAC is or will be exceeded, or a toxic pollutant in 20.6.2.7.WW NMAC is or will be present in ground water, NMED may require the Permittees to submit an abatement plan pursuant to 20.6.2.4104 NMAC.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.F NMAC, 20.6.2.4103.D NMAC]

E. General Terms and Conditions

~~48.~~46. **APPROVALS -** Upon receipt of a work plan, written proposal, report, or other document subject to NMED approval, NMED will review the document and may either approve the document, approve the document with conditions, or disapprove the document. Upon completing its review, NMED will notify the Permittees in writing of its decision, including the reasons for any conditional approval or disapproval.

[20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

~~49.~~47. **RECORD KEEPING -** The Permittees shall maintain a written record of the following information and shall make it available to NMED upon request:

a. Information and data used to prepare the application for this Discharge Permit.
b. Records of any releases or discharges not authorized in this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC.
c. Records, including logs, of the operation and maintenance and repair of all Facility and equipment used to treat, store or dispose of waste water.
d. Facility record drawings (plans and specifications) showing the actual construction of the Facility and shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978).
e. Copies of monitoring reports completed and submitted to NMED pursuant to this Discharge Permit.
f. The volume of waste water or other wastes discharged pursuant to this Discharge Permit.
g. Ground water quality and waste water quality data collected pursuant to this Discharge Permit.
h. Copies of construction records (well logs) for all ground water monitoring wells required to be sampled pursuant to this Discharge Permit.
i. Records of the maintenance and repair, replacement, and calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit.
j. Data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit.

With respect to sampling and laboratory analysis, the Permittees shall record and maintain following information and shall make it available to NMED upon request:

a. The dates, location and times of sampling or field measurements;
b. The name and job title of the individuals who performed each sample collection or field measurement.
c. The sample analysis date of each sample.
d. The name and address of the laboratory, and the name of the signatory authority for the laboratory analysis.

e. The analytical technique or method used to analyze each sample or collect each field measurement.
f. The results of each analysis or field measurement, including raw data;
g. The results of any split, spiked, duplicate or repeat sample.
h. All laboratory analysis chain-of-custody forms and a description of the quality assurance and quality control procedures used.

The written record shall be maintained by the Permittees at a location accessible during a Facility inspection by NMED for a period of at least five years from the date of application, report, collection or measurement and shall be made available to NMED upon request.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.D NMAC, 20.6.2.3109.B NMAC]

48. **PUBLIC INVOLVEMENT** - Within six (6) months after the effective date of the Permit, the Permittees shall post the following information on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated), where information on the Discharge Permit will be made available: (a) the Annual Update (VI.A.1); (b) Notices of Changes (VI.A.2); (c) Water Tightness Testing (VI.A.8); (d) Summary Report for Settled Solids (VI.A.9); (e) Freeboard Proposal and Responses (VI.A.12); (f) Emergency Plan (VI.A.16); (g) Installation of Flow Meters (VI.A.17); (h) Quarterly Monitoring Reports (VI.B.20); (i) Soil Moisture Monitoring System for the SET (VI.B.26); (j) Ground Water Flow (VI.B.27); (k) Final Closure (VI.D.44); (l) Post-Closure (VI.D.45); and (m) Termination of the Discharge Plan (VI.D.46). The Permittees agree to voluntarily provide the above-information, and as such, this permit condition is not subject to civil or criminal fines and penalties associated with permit requirements under Permit Sections 52 and 53.

~~50.~~49. **INSPECTION AND ENTRY** – The Permittees shall allow inspection by NMED of the Facility and its operations which are subject to this Discharge Permit and the WQCC regulations. NMED may upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which are located any records required to be maintained by regulations of the federal government or the WQCC.

The Permittees shall allow NMED to have access to and reproduce any copy of the records, and to perform assessments, sampling or monitoring during an inspection for the purpose of evaluating compliance with this Discharge Permit and the WQCC regulations.

Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED in the WQA, the WQCC Regulations, or any other local, state or federal laws and regulations.

[NMSA 1978, §§ 74-6-9.B and 74-6-9.E, 20.6.2.3107.D NMAC]

~~51.~~50. **DUTY TO PROVIDE INFORMATION** - The Permittees shall, upon NMED's request, allow NMED to inspect and duplicate any and all records required by this Discharge Permit and furnish NMED with copies of such records.

Nothing in this Discharge Permit shall be construed as limiting in any way the authority of NMED to gather information as stipulated in the WQA, the WQCC Regulations, or any other local, state or federal laws and regulations.

[NMSA 1978, §§ 74-6-5.D, 74-6-9.B, and 74-6-9.E, 20.6.2.3107.D NMAC, 20.6.2.3109.B NMAC]

51. **EXTENSIONS OF TIME** – The Permittees may seek an extension of time in which to perform an obligation under this Permit, for good cause, by sending a written request for extension of time that states the length of the requested extension and describes the basis for the request. The Department will respond in writing to any request for extension within fourteen (14) days following receipt of the request. If the Department denies the request for extension, it will state the reasons for the denial.

52. **MODIFICATIONS AND AMENDMENTS** – In the event the Permittees propose a change to the Facility or the Facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated or discharged by the Facility, the Permittees shall notify NMED prior to implementing such changes. The Permittees shall obtain written approval (which may require modification of this Discharge Permit) from NMED prior to implementing such changes.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.C NMAC, 20.6.2.3109.E NMAC,]

53. **CIVIL PENALTIES** - Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or Facility, or any refusal or failure to provide NMED with records or information, may subject the Permittees to a civil enforcement action. Pursuant to WQA 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to WQA 74-6-10.C and 74-6-10.1, civil penalties of up to $15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to $10,000 per day of

noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the Permittees waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit.

[NMSA 1978, §§ 74-6-10 and 74-6-10.1]

54. **CRIMINAL PENALTIES** – The WQA provides that no person shall:
    a. make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained in the WQA;
    b. falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained in the WQA; or
    c. fail to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation.

    Any person who knowingly violates or knowingly causes or allows another person to violate the requirements of this condition is guilty of a fourth degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who is convicted of a second or subsequent violation of the requirements of this condition is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition or knowingly causes another person to violate the requirements of this condition and thereby causes a substantial adverse environmental impact is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition and knows at the time of the violation that he is creating a substantial danger of death or serious bodily injury to any other person is guilty of a second degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15.

    [NMSA 1978, §§ 74-6-10.2.A through 74-6-10.2.F]

55. **COMPLIANCE WITH OTHER LAWS** - Nothing in this Discharge Permit shall be construed in any way as relieving the Permittees of the obligation to comply with all applicable federal, state, and local laws, regulations, permits or orders.

    [20.6.2 NMAC]

56. **LIABILITY**- The Permittees shall be jointly and severally liable for all their obligations in this Discharge Permit.

    [NMSA 1978, §§ 74-6-5.A and 74-6-10]

57. **RIGHT TO APPEAL -** The Permittees may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC, shall be filed within thirty days of the receipt of this Discharge Permit, and shall include a statement of the issues to be raised and the relief sought. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review.
[NMSA 1978, § 74-6-5.O]

58. **TRANSFER OF OWNERSHIP-** Prior to the transfer of any ownership, control, or possession of this Facility or any portion thereof, the Permittees shall:
    a. notify the proposed transferee in writing of the existence of this Discharge Permit;
    b. include a copy of this Discharge Permit with the notice; and
    c. deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee.

    Until both ownership and possession of the Facility have been transferred to the transferee, the Permittees shall continue to be responsible for any discharge from the Facility.

    [20.6.2.3104 NMAC, 20.6.2.3111 NMAC]

59. **PERMIT FEES-** Payment of permit fees is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date.

    Permit fees are associated with issuance of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the Permittees of the obligation to pay all permit fees assessed by NMED. If the Permittees cease discharging at or from the Facility during the term of the Discharge Permit, they shall nevertheless pay all permit fees assessed by NMED. An approved Discharge Permit shall be suspended or terminated if the Permittees fail to remit payment when due.

    [20.6.2.3114.F NMAC, NMSA 1978, § 74-6-5.K]

VII. Permit Term and Signature

EFFECTIVE DATE: [effective date]
TERM ENDS: [expiration date]
[20.6.2.3109.H NMAC, NMSA 1978, § 74-6-5.I]

JERRY SCHOEPPNER
Chief, Ground Water Quality Bureau
New Mexico Environment Department

12/13

Appendix A
To CCW, TWU and Individual Public Comments and Hearing Request - DP-1132

Deficiencies in Ground Water Protection in the Draft Ground Water DP-1132 Permit, by Independent Registered Geologist Robert H. Gilkeson

The five groundwater monitoring wells in the draft discharge permit for the LANL TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF) are not reliable to detect:

1. groundwater contamination from past, present or future leaks below the RLWTF, which began operations in 1963;
2. groundwater contamination from waste water discharged from the 051 outfall located 1,100 feet to the north of the RLWTF (Outfall 051 began discharges in 1963); or
3. groundwater contamination from leaks below the Solar Evaporative Tank System (SET) at Technical Area 52 located a considerable distance to the east of the RLWTF.

The factors necessitating replacement of the wells are described below. The New Mexico Environment Department (NMED) is required to order the Permittees (the Department of Energy (DOE) and Los Alamos National Security, LLC (LANS)) to replace the wells. Significantly, the five groundwater monitoring wells in the draft discharge permit do not comply with the NMED well construction requirements. *See generally*, NMED GWQB, *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1* (March 2011).

The five groundwater monitoring wells are listed on page 29 in the Draft Discharge Permit for the TA-50 RLWTF as follows:

a. **MCO-3-** previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.

b. **MCO-7-** previously constructed and located in the alluvial aquifer presumed to be hydrologically downgradient of Outfall 051.

c. **MCOI-6-** previously constructed and located in the intermediate aquifer presumed to be hydrologically downgradient of Outfall 051.

d. **R-46-** previously constructed and located in the regional aquifer, downgradient of the RLWTF.

e. **R-60-** previously constructed and located in the regional aquifer, downgradient of the RLWTF.

Figure 1 on the top of page 3 displays the locations of the five monitoring wells. Figure 1 shows the location of the LANL RLWTF in TA-50 approximately 400 feet north of the center of the LANL waste disposal dump known as Material Disposal Area (MDA) C. Figure 1 also shows the location of Outfall 051 approximately 1,400 feet north of the RLWTF. Outfall 051 discharges to Effluent Canyon; a tributary to Mortandad Canyon. Discharges to Outfall 051 began in 1963 coincident with the start of the treatment of radioactive liquid wastes at the RLWTF (see Figure 2).

Figure 1 is a contour map of groundwater flow at the water table of the regional aquifer below and away from MDA C, the RLWTF, and Outfall 051. The elevation of the water table of the regional aquifer is displayed on Figure 1 by the blue contour lines. The direction of groundwater flow at the water table is perpendicular to the contour lines along a trend from higher to lower elevations. From west to east on Figure 1, the bold blue contour lines show the elevation of the water table declines by 100 feet from 5950 feet above mean sea level (ft amsl) to 5850 ft amsl.

However, Figure 1 does not provide accurate knowledge of the direction of groundwater flow away from MDA C, the RLWTF, or Outfall 051. For example, the uncertainty in the direction of groundwater travel in the regional aquifer east of MDA C is displayed by the pair of red arrows on Figure 1. They show that the actual direction of groundwater travel at the water table may be to the northeast or to the southeast. The great uncertainty in the direction of groundwater travel in the vicinity of MDA C, the RLWTF and Outfall 051 is due to the lack of an adequate number of monitoring wells installed at the water table in the regional aquifer.

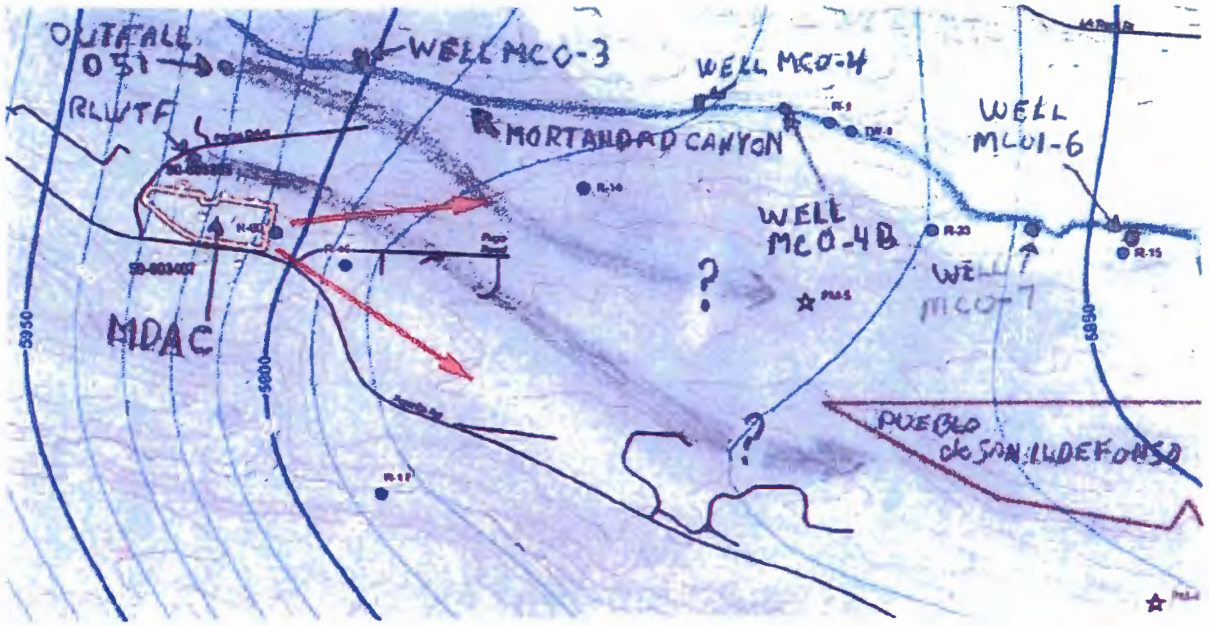
Indeed, the LANL September 2012 report titled *Corrective Measures Evaluation Report for Material Disposal Area C, Solid Waste Management Unit 50-009 at Technical Area 50* (LA-UR-12-24944) on page F-2 described the need for monitoring wells in the vicinity of the RLWTF and Outfall 051 as follows:

> Groundwater flow directions and magnitudes that control contaminant transport in the aquifer are generally dictated by the shape of the regional water table. However, the groundwater flow directions in the regional aquifer beneath MDA C are uncertain because of the low density of existing wells in the vicinity of MDA C; more specifically, the water-level data for defining regional flow directions west and north of MDA C are limited.

NMED is required to order the Permittees to install the necessary number of additional monitoring wells for accurate knowledge of the direction and speed of groundwater travel at the water table for MDA C, RLWTF, and Outfall 051. *See generally*, NMED GWQB, *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1* (March 2011).

Regional aquifer monitoring wells R-46 and R-60 do not monitor groundwater contamination from the TA-50 RLWTF or from Outfall 051. The draft discharge permit has made a serious mistake to describe wells R-46 and R-60 as hydraulically downgradient from the RLWTF. The information on Figure 1 is irrefutable evidence that wells R-46 and R-60 are **NOT** hydraulically downgradient of the TA-50 RLWTF or Outfall 051. The two gray groundwater flow lines on Figure 1 show that there are no LANL monitoring wells installed in the regional aquifer at appropriate locations to detect contaminated groundwater from the LANL RLWTF or from outfall 051.

Figure 1. Locations of the existing regional monitoring wells near MDA C, including the elevation of the regional water table representative of September 2010. Reproduced with additional annotations from *Corrective Measures Evaluation Report for Material Disposal Area C, Solid Waste Management Unit 50-009 at Technical Area 50* (LA-UR-12-24944, September 2012) at Figure F-1.0-1.



Scale 0----------1,000 Feet North is toward the top of the page

– The red arrows east of MDA C represent the large uncertainty in the direction of groundwater flow at the water table of the regional aquifer east of MDA C, RLWTF, and Outfall 051.

– The blue contour lines on Figure 1 are the elevation of the water table of the regional aquifer. The water table declines by more than 100 feet from west to east. The blue contour lines are based on the network of R-wells installed in the regional aquifer. The spacing of the blue contour lines is close below MDA C, the RLWTF, and Outfall 051 with a wide spacing of the contour lines in the region to the east. The close spacing identifies a high hydraulic gradient present in the immediate vicinity of MDA C, the RLWTF and Outfall 051.

– Accurate knowledge of the hydraulic gradient is necessary to calculate an accurate speed of groundwater travel in the regional aquifer. The high hydraulic gradient requires installation of a minimum of two monitoring wells at the water table of the regional aquifer immediately east of the RLWTF and immediately east of Outfall 051. This is demonstrated on Figure 1 by the location of well R-60 close to the eastern side of MDA C and well R-46 located 800 feet east of well R-60.

— Figure 1 shows that Outfall 051 is located close to the confluence of Effluent Canyon with Mortandad Canyon.

– On Figure 1, the upper gray flow line shows the direction of groundwater flow at the water table of the regional aquifer below and away from Outfall 051 is toward Los Alamos County Drinking Water Well PM-5. The very large amount of waste water discharged from Outfall 051 displayed in Figure 2 for the years 1963 to 2000 may have caused groundwater

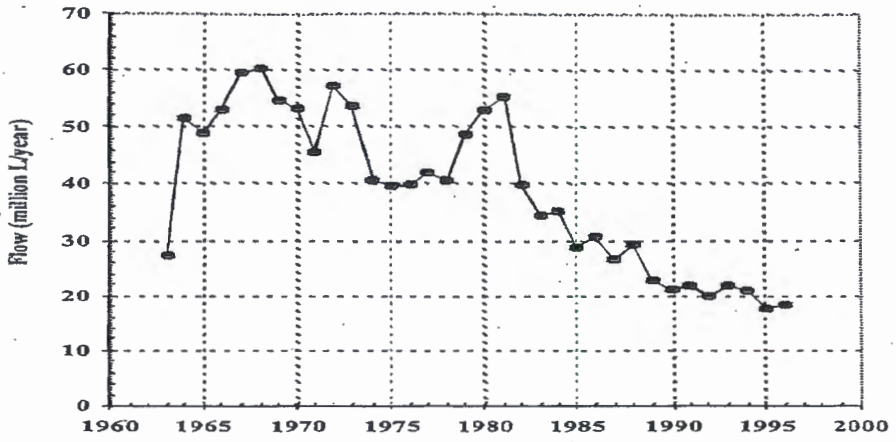
contamination in the regional aquifer. The requirement to install a minimum of two monitoring wells in the regional aquifer close to the east side of Outfall 051 was described earlier.

--The distance from Outfall 051 to well Los Alamos County Drinking Water Well PM-5 is approximately 6,100 feet. There is a requirement to install two monitoring wells in the regional aquifer close to the west side of well PM-5. One well installed at the water table of the regional aquifer and the second well installed at the depth of the top of the well screen in well PM-5. The two monitoring wells will provide important information on the hydraulic interaction of pumping well PM-5 on the elevation of the water table of the regional aquifer in the vicinity of well PM-5. The two wells will also serve as sentry wells for the detection of contaminated groundwater. LANL has already installed two sentry wells, R-35a and R-35b, close to Los Alamos County Drinking Water Well PM-3 in order to provide early knowledge of the migration of the large chromium plume to well PM-3. The request duplicates LANL efforts to provide an early warning for the Los Alamos County drinking water wells.

– On Figure 1, the lower gray flow line shows the direction of groundwater flow at the water table of the regional aquifer below and away from the RLWTF toward the property of the Pueblo de San Ildefonso.[1] The distance from the RLWTF to the Pueblo property line is approximately 6,800 feet. The requirement to install two monitoring wells in the regional aquifer close to the eastern side of the RLWTF because of the high hydraulic gradient was described earlier. In addition, there is a minimum requirement to install two monitoring wells at the water table in the regional aquifer close to the boundary of the Pueblo de San Ildefonso. The two wells are necessary because of the great uncertainty in the actual direction of groundwater flow below and away from the RLWTF.

-Outfall 051 discharged large volumes of liquid wastes from the LANL RLWTF into Effluent Canyon for more than 50 years beginning in 1963. Treated RLWTF effluent volumes were as much as 60 million liters per year. *See* Figure 2 below.[2]

FIGURE 2



Treated effluent in Mortandad Canyon (1963-1996)[1]

[1] References herein to Pueblo de San Ildefonso are solely for the purpose of describing the direction of ground water flow from the LANL property.

[2] D. Moss et al., *Elimination of Liquid Discharge to the Environment from the TA-50 Radioactive Liquid Waste Treatment Facility,* LA-13452-MS, UC-902 (1998) at Figure 1, "Treated RLWTF Effluent to Mortandad Canyon (1963 – 1996)."

In summary: Figure 1 shows that there are no monitoring wells at appropriate locations to detect groundwater contamination in:

1. the shallow alluvial aquifer close to and downgradient from Outfall 051;
2. in perched aquifers close to and downgradient of Outfall 051;
3. at the water table in the regional aquifer close to and downgradient from Outfall 051; and
4. at the water table in the regional aquifer close to the western side of Los Alamos County Well PM-5.

The immediate installation of monitoring wells to address the above four omissions is a requirement in Section VI.C.36 and 37 for the draft discharge permit for the TA-50 RLWTF.

Further, Figure 1 also shows that there are no monitoring wells at appropriate locations to detect groundwater contamination in:

1. perched zones below the RLWTF;
2. at the water table in the regional aquifer below and downgradient of the RLWTF;
3. at the water table of the regional aquifer on the property of the Pueblo de San Ildefonso; and
4. at the water table in the regional aquifer close to the western side of Los Alamos County Well PM-4.

The immediate installation of monitoring wells to address the above four omissions is a requirement as described above for the draft discharge permit for the TA-50 RLWTF.

The NMED Ground Water Quality Bureau (GWQB) made a serious mistake by identifying wells R-46 and R-60 as ***"previously constructed and located in the regional aquifer, downgradient of the RLWTF."*** There is substantial information on record in LANL reports that the two wells are NOT hydraulically downgradient of the RLWTF.

In fact, Section VI.C.36 in the draft RLWTF Discharge Permit describes the replacement process to be followed when information shows a monitoring well is not located hydrologically downgradient of the discharge location it is intended to monitor as follows:

> 36. **MONITORING WELL LOCATION** - In the event that ground water flow information obtained pursuant to this Discharge Permit indicates that a monitoring well is not located hydrologically downgradient of the discharge location it is intended to monitor, NMED may require the Permittees to install a replacement well or wells. Within 30 days following receipt of such notification from NMED, the Permittees shall submit to NMED for approval a well installation work plan, describing each proposed well location, drilling methods and well specifications, and proposing a schedule for construction. Upon NMED approval, the Permittees shall construct the replacement well or wells according to the approved work plan and schedule. The Permittees'

Proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

Section VI.C.36 requires the NMED GWQB to take action now, before a public hearing on the draft permit, to require the Permittees to install the required monitoring wells in the regional aquifer hydraulically downgradient of the RLWTF, Outfall 051 and also the Solar Evaporator Tank System (SET). The requirement for monitoring wells in the regional aquifer at the SET is described below.

Monitoring wells in the regional aquifer are required at the location of the SET. The draft RLWTF discharge permit includes discharge of large volumes of waste water to the "unsealed subgrade concrete structure with a single double-lined synthetic liner, and a leak detection system within the synthetic liner" for solar evaporation. *See* Section V.D. The soil moisture monitoring tubes do not provide adequate monitoring of leakage from the unsealed concrete tanks. **Protection of precious groundwater resources require installation of a minimum of three monitoring wells at the water table of the regional aquifer at locations close to the SET.** *See* Section VI.B.26.

Monitoring Wells MCO-3, MCO-7 and MCOI-6 require replacement. The NMED GWQB report, *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1 (*March 2011), requires that the monitoring wells MCO-3, MCO-7 and MCOI-6 in Mortandad Canyon be plugged, abandoned, and replaced with new monitoring wells. The locations of the three wells are displayed on Figure 1. These wells must be replaced before a public hearing on the draft discharge permit.

Alluvial Aquifer Monitoring Wells MCO-3 and MCO-7. The details on drilling and installation of wells MCO-3 and MCO-7 are provided in Purtymun, W.D., *Geologic and Hydrologic Records of Observation Wells, Test Holes, Test Wells Supply Wells, Springs, and Surface Water Stations in the Los Alamos Area,* LA-12883-MS (1995) ("Purtymun report").

The Purtymun report states, in pertinent part:

> The earlier holes [from 1960 to 1973] were augered using a 4.5-in.-diam bit. For casing, 2-in.-diam and 3-in.-diam plastic pipe was used. These wells were not gravel packed. The casing was placed in the hole, and the annulus between the casing and the hole wall was sealed with cuttings from the hole. . . The screen section of the plastic pipe was perforated with a 1/4-in. drill bit. At the surface the hole was sealed with cement and a security cap installed. Geologic logs and construction data are shown in Table VI-B.

Id. at 69. A table in the report set forth as follows:

Observation Well MCO-3

Geologic Log	Thickness (ft)	Depth (ft)
Alluvium		
Sand and gravel in a matrix of silt and clay		

Tuff (weathered in place)
Silt and clay with some lenses of sand and gravel 11 18

Construction
12 ft of 3-in.-diam plastic pipe, lower 10 ft perforated.

Observation Well MCO-7

Geologic Log	Thickness (ft)	Depth (ft)
Alluvium		
Sand and gravel in a silt and clay matrix		
Tuff (weathered in place)		
Silt and clay with lenses of sand and gravel	22	77

Construction
69 ft of 3-in.-diam plastic pipe, lower 30 ft perforated.

Id. at Table VI.B.

Well MCO-3: The information provided in the Purtymun report shows that well MCO-3 was installed in 1967 in a borehole with diameter of 4.5 inches to a total depth of 12 feet. The well screen was formed by perforating the 3 inch plastic casing with a ¼-inch drill bit over the 10 foot interval from 2 feet to 12 feet below ground surface.

Well MCO-7: The information provided in the Purtymun report shows that well MCO-7 was installed in 1960 in a borehole with diameter of 4.5 inches to a total depth of 69 feet. The well screen was formed by perforating the 3 inch plastic casing with a ¼-inch drill bit over the 30 foot interval from 39 feet to 69 feet below ground surface.

There are many factors that show the construction of wells MCO-3 and MCO-7 are not in compliance with the well construction specifications in the NMED GWQB *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1.* Examples are as follows:

Specification 2. The borehole diameter must be drilled a minimum of 4 inches larger than the casing diameter to allow for the emplacement of sand and sealant.

– For wells MCO-3 and MCO-7, the borehole diameter was only 1.5 inches larger than the casing diameter. The required annular space was not provided for the emplacement of sand and sealant.

Specification 6. A 20-foot section of continuous slot, machine slotted, or other manufactured PVC or stainless steel well screen or well screen of an alternate appropriate material that has been approved for use by NMED must be installed across the water table. Screens created by cutting slots into solid casing with saws or other tools must not be used. The screen material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. . . The well screen slots must be appropriately sized for the formation materials and should be selected to retain 90 percent of the filter pack. A slot size of 0.010 inches is generally adequate for most installations.

– For wells MCO-3 and MCO-7, we are not aware of a document from NMED for approval of the alternate plastic pipe that was used for the well casing and well screen.

– For wells MCO-3 and MCO-7, the screens were created by drilling slots in the solid plastic casing, a screen construction practice that is not allowed by Specification 6.

– For wells MCO-3 and MCO-7, there is no documentation that the chemistry of the plastic casing was compatible with the chemistry of the groundwater and appropriate for the contaminants of interest at the RLWTF.

– The slot size of 0.25 inches from the drill bit was much too large to retain the clay rich drill cuttings that were used as the filter pack in wells MCO-3 and MCO-7.

Specification 7. Casing and well screen must be centered in the borehole by placing centralizers near the top and bottom of the well screen.

– Centralizers were not installed near the top and bottom of the slotted plastic casing in wells MCO-3 and MCO-7. No measures were taken to center the "well screen" in the borehole.

Specification 8. A filter pack must be installed around the screen by filling the annular space from the bottom of the screen to 2 feet above the top of the screen with clean silica sand.

– For wells MCO-3 and MCO-7 a filter pack of clean silica sand was not installed in the annular space surrounding the field fabricated well screens. Instead, the well screens were surrounded by the drill cuttings produced from the boreholes.

Specification 9. A bentonite seal must be constructed immediately above the filter pack by emplacing bentonite chips or pellets (3/8-inch size or smaller) in a manner that prevents bridging of the chips/pellets in the annular space. The bentonite seal must be 3 feet in thickness and hydrated with clean water. Adequate time should be allowed for expansion of the bentonite seal before the installation of the annular space seal.

– The required bentonite seal was not installed above the screened intervals in wells MCO-3 and MCO-7. Instead, the interval immediately above the well screens was filled with the borehole cuttings.

Specification 10. The annular space above the bentonite seal must be sealed with cement grout or a bentonite-based sealing material acceptable to the State Engineer pursuant to 19.27.4 NMAC. A tremie pipe must be used when placing sealing materials at depths greater than 20 feet below the ground surface. Annular space seals must extend from the top of the bentonite seal to the ground surface.

– For wells MCO-3 and MCO-7, the annular space above the well screens was not sealed with a cement grout or a bentonite-based sealing material. Instead, the

annular space was filled with the borehole cuttings. A tremie pipe was not used to place sealing materials at well MCO-7 which has a total dept of 69 feet.

Specification 11. For monitoring wells finished above grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the shroud and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the wellhead.

– For wells MCO-3 and MCO-7, the Purtymun report also states, "At the surface the hole was sealed with cement and a security cap installed." There is no information provided on the radius or thickness of the cement seal or that the cement seal was sloped to direct rainfall and runoff away from the wellhead.

In summary, there is substantial evidence that establishes the requirement to plug and abandon wells MCO-3 and MCO-7 because they do not meet the basic NMED GWQB requirements. Specifically, there is not a seal to prevent rainfall, snowmelt, or stormwater from entering the unsealed annular space. Further, the clay-rich drill cuttings used as filter pack around the field site fabricated screens have properties to prevent collection of reliable and representative groundwater samples for contaminants of concern.

The NMED GWQB must require the Permittees to install new monitoring wells at locations close to the locations of wells MCO-3 and MCO-7 before any public hearing on the draft discharge permit.

Two new monitoring wells installed at the locations of wells MCO-3 and MCO-7 are not sufficient to monitor groundwater contamination in the shallow alluvium along Mortandad Canyon from the large volume of treated waste water discharged from Outfall 051.

First, new monitoring wells are required to be installed because the distance from Outfall 051 to Well MCO-3 is too great, at approximately 1,100 feet. NMED is required to order the Permittees to install a monitoring well in the shallow alluvium in Effluent Canyon north of Outfall 051 near the confluence with Mortandad Canyon before the public hearing on the discharge permit.

Second, the distance from well MCO-3 to MCO-7 is too great at approximately 7,700 feet. There is a large zone of highly contaminated alluvial sediments in the Mortandad Canyon stream section between MCO-3 and MCO-7 that is not monitored. The discharge of large volumes of treated waste water from Outfall 051 will remobilize the contamination that is presently bound up on the alluvial sediments in this zone.

On Figure 1, wells MCO-4 and MCO-4B are within the large zone of highly contaminated sediments. Groundwater samples are not collected by the Permittees from the two wells because of low water levels. The wells must be replaced. *See* Section VI.C.37.

The highly contaminated alluvial sediments at well MCO-4 are documented by the contaminated groundwater samples collected from well MCO-4 as described in the LANL *Hydrogeologic Workplan*, LA-UR-01-6511 (1998) as follows:

[a]lluvial well MCO-4 which contains elevated concentrations or activities of NO3 [nitrate], tritium, strontium-90, cesium-137, plutonium-238, plutonium-239, 240 and americium-241.

Id. at 4-92. The highly contaminated alluvial sediments at well MCO-4B are documented in the LANL report, *Demonstration of a Multi-Layered Permeable Reactive Barrier in Mortandad Canyon at Los Alamos National Laboratory* (LA-UR-03-7320), as follows:

Table 3-1. Summary of Groundwater Data for Mortandad Canyon

Constituent	Concentration	Action Level	Comment
^{90}Sr	80 pCi/L	8 pCi/L	DCG
^{238}Pu	1.182 pCi/L	1.6 pCi/L	DCG
$^{239,240}Pu$	0.61 pCi/L	1.2 pCi/L	DCG
^{241}Am	1.53 pCi/L	1.2 pCi/L	DCG
Nitrate (N)	5.7 mg/L	10 mg/L	MCL
Perchlorate	120-250 ppb	4 µg/L	Proposed EPA MCL

Data from monitoring well MCO-4B upgradient from the multiple PRB (LANL, 2002). DCG is derived concentration guideline from DOE. MCL = maximum contaminant level.

Id. at Table 3-1. Indeed, Section VI.C.37 in the draft RLWTF Discharge Permit requires that Permittees install new monitoring wells as described above in the alluvial aquifer:

37. MONITORING WELL CONSTRUCTION-In the event that information available to NMED indicates that a well is not constructed in a manner consistent with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Guidelines, Revision* 1.1, March 2011; contains insufficient water to effectively monitor ground water quality; or is not completed in a manner that is protective of ground water quality, NMED may require the Permittees to install a replacement well or wells. Within 90 days following receipt of such notification from NMED, the Permittees shall submit to NMED for approval a well installation Work plan, describing each proposed well location, drilling methods, well specifications, and proposed schedule for construction. Upon NMED approval, the Permittees shall construct the replacement well or wells according to the approved work plan and schedule. The Permittees' proposal along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lan1.gov/oppie/service (or as updated).

In summary, the RLWTF draft discharge permit requires that Permittees:

1. plug and abandon wells MCO-3 and MCO-7 with installation of new replacement wells;
2. install a new monitoring well in Effluent Canyon at an appropriate location north of Outfall 051 close to the confluence with Mortandad Canyon; and
3. install a minimum of two alluvial monitoring wells at the locations of wells MCO-4 and MCO-4B that are not sampled at the present time because of low water levels.

Section VI.C.37 requires the NMED GWQB to take action now to require LANL and DOE to install the required monitoring wells in the alluvial sediments in Effluent Canyon and in Mortandad Canyon before any public hearing.

Perched Zone Monitoring Well MCOI-6 requires replacement. Well MCOI-6 is not reliable to detect groundwater contamination because of:

1. the deep placement of the top of the well screen below the water table of the perched zone of saturation; and
2. the drilling method allowed organic drilling fluids to flow into the strata surrounding the well screen.

The deep placement of the well screen in well MCOI-6. The NMED GWQB report, *Monitoring Well Construction and Abandonment Guidelines, Revision 1.1* (March 2011), requires well screens in monitoring wells to be installed across the water table. The requirement is in Specification 6 as follows:

> **Specification 6.** A 20-foot section (maximum) of continuous-slot, machine slotted, or other manufactured PVC or stainless steel well screen or well screen of an alternate appropriate material that has been approved for use by NMED must be installed across the water table.

However, the water level data in the LANL Intellus data base shows that the water level in the perched zone at the location of well MCOI-6 was 27.5 feet above the top of the screen for the most recent water level measurement reported on August 22, 2013. For the previous 12 month period, the water levels varied from 27.1 feet to 29.4 feet above the top of the well screen. The deep placement of the well screen does not provide groundwater samples that are representative of contaminated groundwater at top of the perched zone of saturation.

Characterization well MCOI-6 was installed as an activity of the LANL Hydrogeologic Work Plan with well drilling and well installation performed over the period from January 3 to January 13, 2005. The LANL characterization well MCOI-6 was drilled with methods that allowed a large volume of organic water-based drilling fluids to flow into the strata surrounding the depth interval where the well screen was installed. The organic drilling fluids form a new chemistry in the sampling zone with strong properties to conceal accurate knowledge of many LANL contaminants in the groundwater samples collected from the impacted wells.

The National Academy of Sciences issued a report entitled "Plans and Practices of Groundwater Protection at Los Alamos National Laboratory" in 2007 that described the requirement to replace many and possibly all of the LANL characterization wells.[3] The NAS report states in pertinent part:

> Many if not all of the wells drilled into the regional aquifer [and into perched zones of saturation] under the LANL Hydrogeologic Workplan appear to be compromised in

[3] See http://www.nap.edu/catalog.php?record_id=11883

their ability to produce water samples that are representative of ambient groundwater for the purpose of monitoring.

Id. at 49. Further on in the NAS report we find the following recommendation:

> ***Recommendation:*** *LANL should design and install new monitoring wells with the following attributes:*
>
> • *A borehole drilled through the monitoring zone without the introduction of drilling muds or additives (i.e., use air or water).*

Id. at 60.

In November 2010, the NMED Hazardous Waste Bureau (HWB) issued *General Response to Comment on the LANL Renewal RCRA Permit.* [4] In that report, the NMED HWB agreed with the conclusions in the NAS 2007 Report about the greater than 40 LANL characterization wells installed for the LANL Hydrogeologic Work Plan. The NMED described the LANL characterization wells as not meeting the requirement to be monitoring wells for the NMED 2005 Consent Order or the NMED 2010 Renewal of the Federal Resource Conservation and Recovery Act (RCRA) Permit for LANL.

For example, in the NMED 2010 General Response to Comment it states in pertinent part:

> The Department agrees with many of the conclusions in the referenced National Academy of Sciences (NAS) Report; however the report is based on conditions at the time that the NAS conducted the evaluation. Since that time, the Permittees have installed, replaced and rehabilitated numerous wells completed in the intermediate perched aquifers and the regional aquifer at the Facility. The NAS report does not account for the additional groundwater characterization and actions taken to address deficient wells.
>
> The NAS report references wells that were installed as part of LANL's groundwater characterization efforts that were conducted in accordance with their Hydrogeologic Work Plan (1998). These [characterization] wells were not installed for contaminant detection or groundwater monitoring. Therefore, these wells have limited relevance to groundwater protection goals set forth by the March 1, 2005 Consent Order [Emphasis supplied].

Id. at 31. There was no effort to rehabilitate characterization well MCOI-6. Further, the attempt to rehabilitate many of the LANL characterization wells was categorically unsuc-cessful and a great misspending of financial resources that should have been used to replace the wells. The NMED GWQB has a duty to require the Permittees to plug and abandoned characterization well MCOI-6 and replaced with a new monitoring well before any public hearing takes place.

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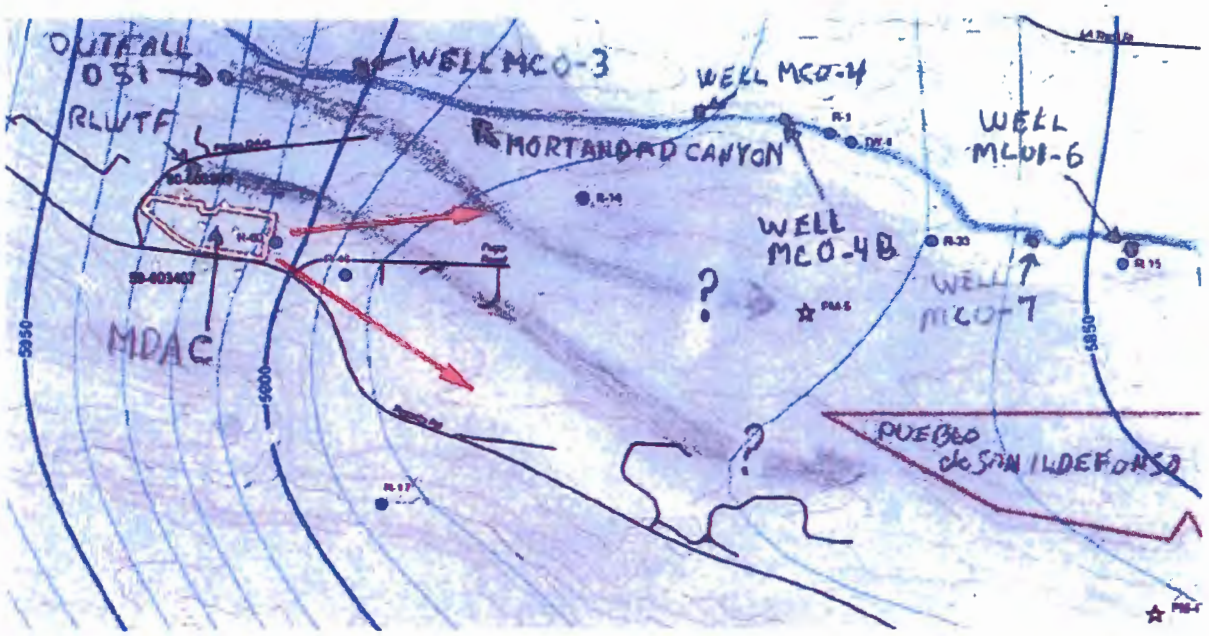
[4] See http://www.nmenv.state.nm.us/HWB/Permit.htm On the NMED webpage under the heading "Renewal Permit," click on the topic "General Response to Comments."

Figure 1. Locations of the existing regional monitoring wells near MDA C, including the elevation of the regional water table representative of September 2010. Reproduced with additional annotations from *Corrective Measures Evaluation Report for Material Disposal Area C, Solid Waste Management Unit 50-009 at Technical Area 50* (LA-UR-12-24944, September 2012) at Figure F-1.0-1.



Scale 0---------1,000 Feet North is toward the top of the page

– The red arrows east of MDA C represent the large uncertainty in the direction of groundwater flow at the water table of the regional aquifer east of MDA C, RLWTF, and Outfall 051.

– The blue contour lines on Figure 1 are the elevation of the water table of the regional aquifer. The water table declines by more than 100 feet from west to east. The blue contour lines are based on the network of R-wells installed in the regional aquifer. The spacing of the blue contour lines is close below MDA C, the RLWTF, and Outfall 051 with a wide spacing of the contour lines in the region to the east. The close spacing identifies a high hydraulic gradient present in the immediate vicinity of MDA C, the RLWTF and Outfall 051.

– Accurate knowledge of the hydraulic gradient is necessary to calculate an accurate speed of groundwater travel in the regional aquifer. The high hydraulic gradient requires installation of a minimum of two monitoring wells at the water table of the regional aquifer immediately east of the RLWTF and immediately east of Outfall 051. This is demonstrated on Figure 1 by the location of well R-60 close to the eastern side of MDA C and well R-46 located 800 feet east of well R-60.

— Figure 1 shows that Outfall 051 is located close to the confluence of Effluent Canyon with Mortandad Canyon.

– On Figure 1, the upper gray flow line shows the direction of groundwater flow at the water table of the regional aquifer below and away from Outfall 051 is toward Los Alamos County Drinking Water Well PM-5. The very large amount of waste water discharged from Outfall 051 displayed in Figure 2 for the years 1963 to 2000 may have caused groundwater

Bill Scott suggested Language?

24. **WASTE TRACKING**-The Permittees shall maintain written or electronic records of all ~~all the following~~ waste streams conveyed to ~~or from~~ the Facility.~~: Radioactive Liquid Waste Bottoms, low-level sludge, TRU sludge and low-level solid waste (PPE, sample bottles, filters, membranes, etc).~~ At a minimum, the Permittees shall record the following information:
    a. The name of the generator and a unique waste stream identification number.
    b. The time period that the Permittee approves the generator to convey the waste stream to the Facility.
    c. The location where the waste stream was generated.
    d. Estimated volume and duration of the waste stream, including:
        - Estimated number of days per year discharge will occur;
        - Average daily volume received by the Facility when discharge occurs;
        - Maximum daily volume received by the Facility each year when discharge occurs; and
        - Estimated total volume discharged to the facility each year.
    e. The waste stream characterization (i.e., analytical data or knowledge of process).
    f. The names of the personnel that approved the receipt of the waste at the Facility (e.g., Waste Certifying official, RCRA Reviewer, and Facility Reviewer).

    Permittees shall maintain written or electronic records of the following waste streams conveyed from the Facility: Radioactive Liquid Waste Bottoms, low-level sludge, TRU sludge, and low-level solid waste (PPE, sample bottles, filters, membranes, etc). The Permittee shall allow NMED or an authorized representative to have access to and copy, at reasonable times, records that must be kept under this condition.

    The Permittees shall maintain all waste tracking records required by this Condition for five years from the date of the final discharge from the generator of that waste stream. The Permittees shall furnish upon request, and make available at all reasonable times for inspection, the waste tracking records required in this Discharge Permit.

    [NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.C NMAC]

generally no content Change except details on disposal? can't tie waste in to waste out - cradle ≠ grave

36. **SOIL MOISTURE DETECTION SYSTEM EXCEEDANCE**- In the event that the soil moisture detection system for the SET detects a soil moisture increase beneath the SET that exceeds the NMED approved action level, the Permittees shall take the following corrective actions:
   a. Notify the NMED Ground Water Quality Bureau within 15 days following the date when the soil moisture was initially discovered to exceed the action level.
   b. ~~Propose~~Identify the source of the increased soil moisture beneath the SET to NMED within 60 days following the date when the soil moisture was initially discovered to exceed the action level. Include the basis for the determination.

In the event the source of the soil moisture exceedance is demonstrated to be associated with failure of the SET, the Permittees shall cease discharges to the SET and submit a corrective action plan to NMED, for approval, within ~~120~~ 30 days following the date when the Permittees identify the source of the increased soil moisture beneath the SET to NMED~~soil moisture was initially discovered to exceed the action level~~. At a minimum, the corrective action plan shall include the following:

a. Removal of all standing liquid from one or both basins (as appropriate);
b. A proposal for repairing or replacing the synthetic liners within the SET, if leakage through the synthetic liners is found to be the source, or for other repairs;
c. A plan for re-instituting soil moisture monitoring following repairs to the SET to demonstrate that the repairs resolved the source of the increased soil moisture beneath the SET; and
d. A schedule for implementation of the corrective action plan elements.

In the event the source of the soil moisture exceedance is demonstrated to be associated with an occurrence other than a failure of the SET, the Permittees shall submit a corrective action plan to NMED, for approval, within 120 days following the date when the soil moisture was initially discovered to exceed the action level. The corrective action plan shall include any actions necessary to ensure the soil moisture detection system is operating within its intended function as required by this Discharge Permit including, but not limited to, re-calibration.

Upon NMED approval, or approval with conditions, the Permittees shall implement the corrective action plan according to the approved schedule. ~~The Permittees' corrective action plan along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).~~

43. STABILIZATION OF INDIVIDUAL UNITS AND SYSTEMS - Within 1290 days from the permanent cessation of operation of a unit or system, the Permittees shall submit to NMED for approval a written work plan for the stabilization of the unit or system for which operation has ceased. ~~.~~ The work plan shall identify ~~characterization~~ activities to be taken, and steps necessary to ensure that the unit or system can no longer receive a discharge and that no further releases of water contaminants occur as a result of the unit or system. At a minimum, the work plan shall include the following:

a. Identification of the unit or system in which cessation of use has occurred;
b. A detailed description of the function of the unit or system;
c. A detailed description of the historic influent waste streams to the unit or system;
d. A detailed description of all conveyance lines leading to the unit or system and a description of how the lines will be terminated, plugged, re-routed or bypassed so that a discharge to the unit or system can no longer occur;
e. Identification of those portions of the ~~approved~~ Closure Plan required in Condition 4~~3~~ of this Discharge Permit that will be implemented;
f. A description of all proposed interim measures, actions and controls that will be implemented until such time of final removal of the unit, system or component to prevent the release of water contaminants into the environment; to prevent water contaminants, including storm water run-on and run-off, from moving into ground water; and to prevent water contaminants from posing a threat to human health;
~~f. A detailed description of the actions that will be taken to investigate and characterize, to the extent possible given site constraints, the potential impact to soil and groundwater from the facility, system, or individual unit; and~~
g. A schedule for implementation.

no tie to Consent agreement

Upon NMED approval of the work plan, the Permittees shall implement the plan according to the approved schedule.

Within 30 days following the completion of all interim measures, actions and controls as required by this condition, the Permittees shall submit to NMED for approval a final written report on the actions taken to implement the partial closure. The Permittees' workplan and final written report along with NMED's response shall be posted, by the Permittees, on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).

[NMSA 1978, § 74-6-5.D, 20.6.2.3107.A NMAC, 20.6.2.3109.B NMAC, 20.6.2.3109.E NMAC]

Fullam Docs 083014 / Comments / LANL / LANL emails

Fullam, Jennifer, NMENV

From: Kathy Sanchez TWU <wanpovi@hotmail.com>
Sent: Thursday, December 12, 2013 5:03 PM
To: j block; Schoeppner, Jerry, NMENV; Fullam, Jennifer, NMENV; Brian Shields; Rachel Conn; J. G. Sanchez; Marian Naranjo; 'mariannaranjo@icloud.com'; bob gilkeson; joni arends
Subject: RE: got it ..2d Set of Comments and Hrg. Reg. from CCW, TWU and Individuals on DP 1132 for the RLWTF at LANL

Thank you so much..Got it.. Many blessings for all the much needed work. Thank you thank you.thankyou....

Kathy WanPovi

Date: Thu, 12 Dec 2013 16:36:36 -0700
From: jblock@nmelc.org
To: jerry.schoeppner@state.nm.us; Jennifer.Fullam@state.nm.us; bshields@amigosbravos.org; rachel.conn@gmail.com; wanpovi@hotmail.com; tewacowboy@hotmail.com; Mariann2@windstream.net; mariannaranjo@icloud.com; rhgilkeson@aol.com; jarends@nuclearactive.org
Subject: 2d Set of Comments and Hrg. Reg. from CCW, TWU and Individuals on DP 1132 for the RLWTF at LANL

Hello, Jerry and Jennifer:
As promised, here is the above referenced continuation of
the group and individual comments you received on 12/6/2103.

Again, thank you for your work on this matter.

Best,

Jon

--
J.M. Block, Staff Attorney
New Mexico Environmental Law Center
1405 Luisa Street, Ste. 5
Santa Fe, NM 87505
(505) 989-9022

Fullam Docs 030714/caseloads/LANL/DP1132-TA-50 RLWTF/DP1132 Comments Summary 121213

	Comments on LANL RLWTF Draft Discharge Permit (DP-1132)							
	Drafted for NMED GWQB INTERNAL PURPOSES ONLY							
#	Commenter	Date Submitted	Reference in Permit		General Comment	Reasoning for commant	Response	
63	Communities for Clean Water et. al	12.12.13	12.06.13 Comments II.A.4 (there is no II.A.4 in comments provided)	Comment	LANL should be seeking "zero discharge" and permitted under RCRA as a hazardous waste treatment facility		Regardless if the facility eliminates the NPDES outfall and becomes subject to RCRA regulation, a GWQB Discharge Permit would still be required. Obtaining a Discharge Permit does not effect other federal regulatory processes	
64	Communities for Clean Water et. al	12.12.13	12.06.13 Comments II.A.5 (there is no II.A.4 in comments provided)	Comment	Concerns regarding air emmissions of tritium from evaporation units		Although there may be additional regulatory agencies which would oversee these emmissions, it is not within the authority of the GWQB to enforce	
100	DOE/LANS	12.12.13	Acronyms	Request	Change language for TRU	Not all TRU waste is waste water. See proposed language	Following review, it is appropriate and consistent to describe the TRU as Transuranic waste (not wastewater).	
118	DOE/LANS	12.12.13	Authorization to Discharge	Request	Removal of language refering to the volume authorized to receive and treat.	The WMRM tanks are designed to receive more than 40,000 gpd.	The WMRM tanks have a total capacity of 300,000 gallons. The two tanks converted to influent tanks total 100,000 gallons. If the facility were receiving more than 40,000 gpd, the influent tanks would reach capacity in less than two days. The facility, as far as NMED hes evaluated, is not designed to recieve or treat more than 40,000 gpd.	
119	DOE/LANS	12.12.13	Authorization to Discharge	Request	Removal of language refering to the volume authorized to receive and treat.	The facility processes in batches and can treat more than 40,000 in a 24-hour period	If the facility is treating more than 40,000 gpd then it would also be discharging more than 40,000 gpd even with the holding tanks just prior to discharge.	
40	Communities for Clean Water et. al	12.06.13	Condition 10(b)-Facility Inspections	Request	The Permit should state the term for inspection of the synthetic liners	Inconsistent with other parts	The condition does require weekly inspections	
139	DOE/LANS	12.12.13	Condition 10-Facility Inspections	Request	Remove language regarding the requirement to inspect for operator errors and discharges and replace with "leaks"	Inspecting for operator errors is not consistent with this condition nor is the use of the word "discharges"		
140	DOE/LANS	12.12.13	Condition 10-Facility Inspections	Request	Remove language regarding the requirement to inspect for operator errors and discharges and replace with "leaks"	Language proposed by NMED is not common with other Discharge Permits		
141	DOE/LANS	12.12.13	Condition 11-Maintenance and Repair	Request	Requesting that the report include a summary and description instead of just a "report"	The report as required under Condition 18 states a "report" describing the maint and repair be submitted on a quarterly basis whereas Condition 1 for the Annual report provide a summary of maint and repair. The difference between a summary and a report was not identified and is not clear		
42	Communities for Clean Water et. al	12.06.13	Condition 13 Table 1-Effluent Limits Outfall 051	Request	Perchlorate limit should be at least as low as CA, or be 10x lower than proposed or preferably 0.00	Perchlorate standards are 3x higher than the 2005 permit. Perchlorate standards are 2x higher than the CA standard.		
43	Communities for Clean Water et. al	12.06.13	Condition 13 Table 1-Effluent Limits Outfall 051	Request	Mercury limit should be more stringent and protective of occupational and public health and safety	Mercury limits (0.0022 mg/L) are higher than proposed in 2005 (0.00077 mg/L).	Standard under 20.6.2.3103. Unknown source for limits set in 2005 draft	
44	Communities for Clean Water et. al	12.06.13	Condition 13 Table 1-Effluent Limits Outfall 051	Request	Zinc limit should be more stringent and protective of occupational and public health and safety	Zinc limits (10 mg/L) are higher than proposed in 2005 (4.37 mg/L).	Standard under 20.6.2.3103. Unknown source for limits set in 2005 draft	
45	Communities for Clean Water et. al	12.06.13	Condition 13 Table 1-Effluent Limits Outfall 051	Request	Radioactivity limit should be more stringent and protective of occupational and public health and safety	Limits for radioactivity (30 mg/L) are higher than proposed in 2005 (15 mg/L). This comment seems to imply that tritium would be included in the totals for radioactivity although the permit only identifies Ra-226 & Ra-228		
48	Communities for Clean Water et. al	12.06.13	Condition 13 Table 1-Effluent Limits Outfall 051	Request	The language should identify that the lower limit (federal or state) should be the enforceable limit		The language actually reflects the request by the commenter however it is not in accordance with state and federal law as 20.6.2 has an exemption for NPDES	
46	Communities for Clean Water et. al	12.06.13	Condition 13 Table 1-Effluent Limits Outfall 051 & Condition 14 Table 2-Effluent Limits MES and SET	Request	A tritium limit of 20nCi/L should be included	There is no limit for tritium in the current Discharge Permit (the 2005 permit had a limit). LANL goal for zero discharge of tritium. Concerns regarding tritium evaporation from SET and MES		
142	DOE/LANS	12.12.13	Condition 13-Effluent Quality Limits Outfall 051	Request	Proposes effluent limit for Perchlorate to be increased to 0.256 mg/L (from 0.011 mg/L)	Limits in the table with the exception of perchlorate are derived from 20.6.2.3103. There is no citation for the limit set for perchlorate.	NMED will have to review the request and discuss	Need to look up EPA HHSL and discussions with LANL re: limit
143	DOE/LANS	12.12.13	Condition 13-Effluent Quality Limits Outfall 051	Request	Proposes effluent limit for Perchlorate to be increased to 0.256 mg/L (from 0.011 mg/L)	Condition 13.b states that limits not listed in the Table are derived from A-1 NMED Risk Assessment Guidance where the perchlorate limit is 0.0256 mg/L	NMED will have to review the request and discuss	Need to look up EPA HHSL and discussions with LANL re: limit
144	DOE/LANS	12.12.13	Condition 13-Effluent Quality Limits Outfall 051	Request	Proposes effluent limit for Perchlorate to be increased to 0.256 mg/L (from 0.011 mg/L)	The working draft Discharge Permit for DP-857 has a perchlorate limit of 0.256 mg/L	NMED will have to review the request and discuss	Need to look up EPA HHSL and discussions with LANL re: limit
145	DOE/LANS	12.12.13	Condition 13-Effluent Quality Limits Outfall 051	Request	Proposed new language regarding Nitrogen limits for the Outfall, MES and SET	LANL cannot meet the limits established in the Discharge Permit until new treatment units are established (MES and SET may be operable by September 2015)	Outfall 051 has direct hydrologic connection and will not be increased. MES and SET limitations would require NMED to review and discuss further	
146	DOE/LANS	12.12.13	Condition 13-Effluent Quality Limits Outfall 051	Request	Attach Table A-1 as stated in the language for Condition 13b	Table A-1 which lists the NMED Risk Assessment Guidance for Site Investigation and Remediation is not included in the draft	NMED can provide the most recent version of the referenced Table	
147	DOE/LANS	12.12.13	Condition 13-Effluent Quality Limits Outfall 051	Request	Attach Table A-1 as stated in the language for Condition 13b	DP-857 has a Table listing all numerical limits for the toxic pollutants list	NMED can provide the most recent version of the referenced Table	

Comments on LANL RLWTF Draft Discharge Permit (DP-1132)

Drafted for NMED GWQB INTERNAL PURPOSES ONLY

#	Commenter	Date Submitted	Reference in Permit		General Comment	Reasoning for comment	Response	
148	DOE/LANS	12.12.13	Condition 13-Effluent Quality Limits Outfall 051	Request	Attach Table A-1 as stated in the language for Condition 13b	The inclusion of the limits would formally document the limits	NMED can provide the most recent version of the referenced Table	
149	DOE/LANS	12.12.13	Condition 14-Effluent Quality Limits MES & SET	Request	Proposes effluent limit for Perchlorate to be increased to 0.256 mg/L (from 0.011 mg/L)	Limits in the table with the exception of perchlorate are derived from 20.6.2.3103. There is no citation for the limit set for perchlorate.	NMED will have to review the request and discuss	
150	DOE/LANS	12.12.13	Condition 14-Effluent Quality Limits MES & SET	Request	Proposes effluent limit for Perchlorate to be increased to 0.256 mg/L (from 0.011 mg/L)	Condition 13.b states that limits not listed in the Table are derived from A-1 NMED Risk Assessment Guidance where the perchlorate limit is 0.0256 mg/L	NMED will have to review the request and discuss	
151	DOE/LANS	12.12.13	Condition 14-Effluent Quality Limits MES & SET	Request	Proposes effluent limit for Perchlorate to be increased to 0.256 mg/L (from 0.011 mg/L)	The working draft Discharge Permit for DP-857 has a perchlorate limit of 0.256 mg/L	NMED will have to review the request and discuss	
152	DOE/LANS	12.12.13	Condition 15c- Personnel Qualification	Request	Removal of subpart c "repairing or replacing automatic waste feed cut-off systems	Automatic waste feed cut-off systems are componenets of hazardous waste combustors and are not components of the RLWTF treatment system	NMED will have to review the request and discuss	
153	DOE/LANS	12.12.13	Condition 16-Emergency Plan	Request	Removal of Condition in it's entirety	20.6.2.3109.C does not support the requirements of this Condition to impose RCRA requirements	Under 20.6.2.3109.B, NMED has the authority to impose Conditions to ensure protection of ground water and human health. Due to the unique nature of the facilities activities, the requirement requiring a response plan is warranted and fully within NMEDs authority.	
154	DOE/LANS	12.12.13	Condition 16-Emergency Plan	Request	Removal of Condition in it's entirety	Potential issues are already addressed under the Contigency Conditions of the draft Discharge Permit and is therefore conflicting and duplicative of actions under the Contingencies (e.g. Spills or unauthorized releases)	The emergency plan, as required, addresses potential responses to those types of emergencies that could result in an unauthorized release which could pose an immediate threat to ground water or human health. The Contingency plan covers those reporting actions which must be adhered to following an unauthorized release.	
155	DOE/LANS	12.12.13	Condition 16-Emergency Plan	Request	Removal of Condition in it's entirety	NMED regulations (or other DPs) do not require an Emergency Plan be prepared, distributed within 30-days or diestributed to the numerous governmental agencies	Although not specifically required under other Discharge Permits, following an unauthorized release, NMED has routinely required a facility to implement management practices to ensure minimization of impacts from potential future releases	
49	Communities for Clean Water et. al	12.06.13	Condition 17- Installation of Flow Meters	Request	Requests meters be installed within 30 days of the effective date of the Discharge Permit		The length of time for a hearing and appeal will supercede even the 6 mos required in the orginally proposed draft	
156	DOE/LANS	12.12.13	Condition 17- Installation of Flow Meters	Request	Removal of language requiring the installation of a flow meter to Outfall 051	Proposing to have one meter to measure discharges to Outfall 051 and the SET. LANL states that they would record volumes discharged to each location, which would be available to NMED to inspect on-site	No. See discussion with LANL technical staff on reasoning and concurrence for installing independent meters	
50	Communities for Clean Water et. al	12.06.13	Condition 18-Calibration of Flow Meters	Request	Calibration of the meters should be completed within 30 days of the effective date			
157	DOE/LANS	12.12.13	Condition 18-Calibration of Flow Meters	Request	Inclusion of language clarifying that calibration of flow meters is limited to those referenced under this Discharge Permit	As written, it is not clear that this condition is limited to those meters required under the Discharge Permit and not all meters throughout the Laboratory	NMED may be able to incorporate the additional language as proposed.	
125	DOE/LANS	12.12.13	Condition 1-Annual Update	Request	Proposed change in language to include a summary of all deliverables due at the time the annual summary is required	The Permit has several conditions which require submittal at the time of the annual update and incorporating them into a single condition would facilitate compliance and ease implementation of the Permit	The annual update is a separate enforceable deliverable required for compliance and is not interchangeable with other conditions of the Discharge Permit. NMED may be able to accommodate the Permittee with a summary of deliverables and the dates in which they are due. This is customarily provided to facilities on an as-need basis and may not fulfill all reporting requirements as determined through the Discharge Permit	
51	Communities for Clean Water et. al	12.06.13	Condition 24-Waste Tracking	Request	Requests the Permit include the date the waste stream is conveyed as well as when it was approved			
19	Nuclear Watch New Mexico	12.12.13	Condition 25-Effluent Sampling	Request	Requests effluent samples for outfall be taken for each discharge, not monthly	Variations in influent can dramatically change quality of effluent		
52	Communities for Clean Water et. al	12.06.13	Condition 25-Effluent Sampling	Request	PCB analysis should be required for monthly and quarterly effluent sampling for NPDES, MES and SET		The Permittee is required to sample for PCB's in any month discharges occurred at the NPDES outfall and every quarter that there were discharges to the MES or SET.	
65	Communities for Clean Water et. al	12.12.13	Condition 25-Effluent sampling	Request	Permittees should be required to post their submittal to NMED when no discharge occurs for any calendar month		This could be changed to clarify that discharge volumes (even when they are zero) must be submitted to NMED	
68	Communities for Clean Water et. al	12.12.13	Condition 26-Soil Moisture Monitoring System for the SET	Request	The Permit should only allow for 30 days for LANL to repair a failure of the moisture monitoring boreholes and neutron probes		NEED TO CHECK WHY WE DETERMINED THE TIME WE DID...PERHAPS BECAUSE THEY ARE ONLY GOING OUT ON A QUARTERLY BASIS	
69	Communities for Clean Water et. al	12.12.13	Condition 26-Soil Moisture Monitoring System for the SET	Request	LANL should be required to establish a baseline for the probe and soil moisture action level		LANL is required to establish a baseline and action level for the soil moisture probe 90 days following construction of the boreholes. Stabilization of ambient soil moisture in the boreholes and implementation of a baseline warrants a longer 90 day period to ensure Applicability of the system to detect leaks	

Comments on LANL RLWTF Draft Discharge Permit (DP-1132)

Drafted for NMED GWQB INTERNAL PURPOSES ONLY

#	Commenter	Date Submitted	Reference in Permit		General Comment	Reasoning for comment	Response	
67	Communities for Clean Water et. al	12.12.13	Condition 26-Soil Moisture Monitoring System for the SET, Condition 27-Ground Water Flow, Condition 28-Ground Water Monitoring and other portions dealing with ground water monitoring system	Request	Request replacement of existing GW monitoring network to adequately monitor potential impacts from the SET	The current GW Monitoring network is antiquated and not conducive for assessing impacts (from the SET?)	There is no GW Monitoring for the SET as the hydrogeologic conditions do not warrant real-time assessments (travel time to nearest aquifer may be over decades). The monitoring system for the SET is based on routine assesment of the soil moisture below the unit for real-time evaluation of the strucutral integrity of the system	
18	Nuclear Watch New Mexico	12.12.13	Condition 28- Ground Water Monitoring	Comment	Wells may not be suitable to monitor outfall 051	Screen is at 1,330 bgs and could not monitor discharges from outfall		
158	DOE/LANS	12.12.13	Condition 28-Ground Water Monitoring	Request	Replace the requirement to monitor MCO-3 with MCO-4b	During recent flooding events, MCO-3 was destroyed	Although the overall screen length for MCO-4 meets the requirements of NMED's guidance, NMED is aware that the well does not have adequate water and would not provide necessary data to determine ground water quality. NMED was aware of the inadequate construction of the wells in the vicinity of the Outfall and as found in the contingency, MCO-3 would have to be replaced and constructed in accordance with NMED guidelines. With the new information regarding the condition of MCO-3, language will be changed to reflect that a new well must be constructed. This language includes the addition of Conditions.	
159	DOE/LANS	12.12.13	Condition 28-Ground Water Monitoring	Request	Replace the requirement to monitor MCO-3 with MCO-4b	LANL proposed MCO-4B be used for monitoring downgradient of Outfall 051 in 2012	Upon evaluation, it was determined that use of MCO-4B would not be adequate for monitoring ground water impacts from discharges originating from Outfall 051. If MCO-3 has been destroyed, LANL will be required to replace it in accordance with NMED's well guidance. With the new information regarding the condition of MCO-3, language will be changed to reflect that a new well must be constructed. This language includes the addition of Conditions.	
160	DOE/LANS	12.12.13	Condition 28-Ground Water Monitoring	Request	Removal of language requiring the measurement of total depth and replacing it with the most recent total depth measurement	LANL does not take total depth measurements due to the placement of dedicated pumps in each well.	NMED will have to review the request and discuss. Need to know how often total depths are taken, especially if considering wells that were constructed in a manner which may cause infiltration of sediments	
161	DOE/LANS	12.12.13	Condition 28-Ground Water Monitoring	Request	Proposed alternate language regarding purge volumes for alluvial wells	LANL does not take three well volumes for alluvial wells as they often go dry prior to obtaining the three well volumes. Standard practice, as provided by the comments, states one well volume is purged and samples taken after field parameters are stable	NMED will have to review the request and discuss. The types of field parameters need to be identified and included in the language, if the proposed language is found to be satisfactory	
53	Communities for Clean Water et. al	12.06.13	Condition 29-Containment	Question	What consitutes appovable "long-term" corrective actions should be specified in the Permit.			
54	Communities for Clean Water et. al	12.06.13	Condition 29-Containment	Comment	Any proposed corrective action should be open for public comment and public meeting			
55	Communities for Clean Water et. al	12.06.13	Condition 29-Containment	Request	Any proposal for corrective action should be posted on the public reading room at the beginning of proposal (as written now it implies that it will be posted after NMED approval)			
126	DOE/LANS	12.12.13	Condition 2-Notification of Changes	Request	Proposed change in language to clarify what changes DOE/LANS is required to notify NMED of	As written it was unclear of the intent. See proposed language change	NMED may consider the language as proposed by DOE/LANS	
127	DOE/LANS	12.12.13	Condition 2-Notification of Changes	Request	Remove language regarding "temporal scope" and replace with "duration"	The meaning of temporal scope is unclear	NMED will have to review the request and discuss. Potentially re-wording to make clear as to the intent of the requirement (duration does not capture the full extent)	
128	DOE/LANS	12.12.13	Condition 2-Notification of Changes	Request	Remove language regarding subpart h. referencing the requirement to submit any additional information requested by NMED	Item h is non-specific nor definable as written and can not be comprehensibly addressed by the Permittee. Because of the language above that says "at a minimum"	NMED may be able to re-word the condition to put the "any additional information" language above the list of de-minimus requirements to clarify this requirement	
56	Communities for Clean Water et. al	12.06.13	Condition 32-Damage to Structural Integrity	Request	Request to include oral notification to NMED within 24 hours of identification of damage to structural integrity		Under 20.6.2.1203 only those incidents that result in an unauthorized release are required to be reported orally within 24 hours of identification. Staff availablity to receive, document and respond to potential reporting volumes	
162	DOE/LANS	12.12.13	Condition 34-Effluent Exceedance	Request	proposed language to replace "analyze" to collect	LANL is unable to analyze a sample within 24 hours. They can collect a subsequent sample within the timeframe but not get the analysis	NMED will have to review the request and discuss. May need to add an additional part in which the collected sample is to be analyzed for the particular analyte	
163	DOE/LANS	12.12.13	Condition 34-Effluent Exceedance	Request	remove subpart a which requires cessation of discharges to the system in which the exceedance was confirmed	The requirement to cease discharges is unsuported under NMED WQCC Regulations		
164	DOE/LANS	12.12.13	Condition 34-Effluent Exceedance	Request	remove subpart a which requires cessation of discharges to the system in which the exceedance was confirmed	Unprecedented for a single effluent sample exceedance and unsupported by NMED rules	Other facilities, such as domestic WWTP, are required to cease discharges if effluent limits are exceeded. This argument is unfounded. The requirement is supported by 3107.C and 3106.C(7) and 3107.A(8-10)	
165	DOE/LANS	12.12.13	Condition 34-Effluent Exceedance	Request	remove subpart a which requires cessation of discharges to the system in which the exceedance was confirmed	Misplaced assumption that an effluent sample exceedance automatically equates to a ground water sample exceedance.	20.6.2.3106.C.7 and 20.6.2.3109.C both refer to no potential threat to ground water or human health. Any exceedance in effluent (especially given the hydrologic connection from Outfall 051 discharges and the alluvial aquifer) would potentially threaten ground water.	

Comments on LANL RLWTF Draft Discharge Permit (DP-1132)								
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166	DOE/LANS	12.12.13	Condition 34-Effluent Exceedance	Request	remove subpart a which requires cessation of discharges to the system in which the exceedance was confirmed	Other Discharge Permits have not requred cessation of operations even based on evidence that ground water had exceedances.	Other facilities have been required to seek contingencies in order to obtain source control upon determination that ground water had been impacted.	
167	DOE/LANS	12.12.13	Condition 34-Effluent Exceedance	Request	remove subpart a which requires cessation of discharges to the system in which the exceedance was confirmed	SET and MES have secondary containment systems designed to prevent a potential release. These units are required to be inspected and kept in good condition.	First, the MES does not require cessation in the event of an exceedance. Contrary to DOE/LANS comments, the SET does not have a secondary containment system as defined under this Discharge Permit and is not inspectable (which is why indirect metholdologies have been implemented to measure potential releases). The design of the system is less than ideal for ensuring no unauthorized discharges occur. Even with these mechanisms, discharges to the SET and quarterly soil moisture analysis are only required to be sampled on a quarterly basis. In the event that discharges in exceedance of the limits were authorized to be discharged for a full quarter (40,000 gpd), the potential for ground water impacts could be substantial.	
168	DOE/LANS	12.12.13	Condition 34-Effluent Exceedance	Request	remove subpart a which requires cessation of discharges to the system in which the exceedance was confirmed	The Outfall 051 has three monitoring wells to ensure that ground water standards are met.	The purpose of the Discharge Permit is to attempt to prevent impacts to ground water by placing conditions in which ground water will not be impacted. Based on the type of facility and activities occuring, and the data which identifies a direct hydrologic connection between the Outfall 051 and the alluvial aquifer (and subsequently perched intermediate and regional) it is within the authority of NMED to ensure that effluent limits are satisfied and discharges don't imact ground water. The downgradient monitoirng wells are used to ensure the Conditions imposed in the Discharge Permit are meeting the scope of the regulations. There are several analytes under 20.6.2.3103 that have values less conservative then what would be considered protective in accordance with EPA HHSL or the NM Screening Limits for residential tap water. Instead of requiring the Permittee to meet these limits (which are more applicably protective of human health and ground water), NMED has determined the limits under 3103 would be obtainable and protective to the extent possible.	
76	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Comment	There are no wells to detect groundwater contamination in the shallow alluvial aquifer close to and downgradient from Outfall 051		The wells proposed in the draft have been identified and meet the criteria for detecting impacts from outfall 051	
77	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Comment	There are no wells to detect groundwater contamination in the perched aquifers close to and downgradient to Outfall 051		There has been no identification of perched aquifers within the hydrologic area with the exception of MCOI-6 which is hydrologically downgradient of Outfall 051 and most likely hydrologically connected to the alluvial aquifer upgradient	
78	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Comment	there are no monitoirng wells to detect groundwater contamination at the water table in the regional auqifer close to and downgradient from Outfall 051		It is the intent of capturing potential impacts at the alluvial and intermediate aquifers prior to them reaching the regional aquifer for Outfall 051. The monitoring of these wells is a more conservative approach and directly influenced by discharges from Outfall 051.	
79	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Comment	The language in Condition 36 & 37 would require immediate replacement of the wells proposed in the Permit because they are not hydrologically downgradient nor are they constructed correctly		NMED believes that based on the information available including the information provided in the comments submitted, the wells intended to monitor ground water impacts from the discharges to Outfall 051 are hydrologically downgradient and meet the requirements to be considered constructed correctly. This is further supported through deta obtained through Intellus.	
80	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Comment	There are no monitoring wells to detect groundwater contamination in perched zones below the RLWTF		There are no identified perched zones on the mesa in which Building 1 is located. The first water which is believed to be impacted through discharges from building 1 would be in the regional aquifer.	
81	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Comment	There are no monitoring wells to detect groundwater contamination at the water table in the regional aquifer below and downgradient of the RLWTF		NMED has identified R-46 and R-60 as applicable for determination of ground water impacts from releases at Building 1. The area just south of Building 1 is a material disposal area which has known contaminants that have impacted ground water. It is believed that due to the proximity of Building 1 to MDA-C, any releases would also be identified. This is presumptive on hydraulic gradient and preferential contaminants specific to Building 1. Through thourough evaluation, it is not feasible or reliable to require additional wells for Building 1.	
82	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Comment	There are no monitoring wells to detect groundwater contamination at the water table of the regional auqifer on the property of the Pueblo de San Ildefonso		The purpose of the Discharge Permit is to attempt to prevent impacts to ground water by placing conditions in which ground water will not be impacted. The DP is not a remediation mechanism nor does it assess long term impacts of historical discharges. This is most applicably suited under the authority of the Consent Order	
83	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Comment	There are no monitoring wells to detect groundwater contamination at the water table of the regional aquifer close to the western side of Los Alamos County Well PM-4		Is the request for monitoring wells near PM-4 or PM-5 (as discussed earlier)? In either case, this would be an action more appropriately required and enforced through the Safe Drinking Water Act or the Hazardous Waste Bureau's Consent Order	

Comments on LANL RLWTF Draft Discharge Permit (DP-1132)								
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84	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Request that new wells be proposed for the SET, Outfall 051 and RLWTF prior to a public hearing on the draft Discharge Permit.	Monitoring wells R-46 and R-60 are not hydrologically downgradient of the RLWTF and in accordance with Condition 36 new wells must be proposed.	The comment refers to substantial evidence truthing this claim however; limited information has been provided supporting such. In fact, the information submitted in the comments supports that any discharges that may occur at Building 1 may very well be detected in R-46 and R-60. The wells proposed hydrologically downgradient of the Oufall 051 are adequate and there are no wells proposed for the SET as alternative methods for determining releases has been proposed.	
85	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring wells MCO-3 and MCO-7 are not constructed properly and must be plugged, abandoned and replaced prior to a hearing	Borehole diameter is not 4" larger than casing to provide room for placement of packing and sealant.	This well was constructed prior to the Monitoring Well Guidance referenced and prior to the regulations for ground water protection. In general, NMED does not require replacement of a monitoring well already constructed prior to the guidance unless the information obtained identifies a failure of the well. The borehole diameter is required for placement of filter materials and although not the currently required 4" it has been filled and sealed and has not shown any sign of failure. The slotting was constructed with a tool now considered unacceptable however; the reasoning for this current condition is to prevent uneven slotting, potential introduction of contaminants on the tools and large slots which would eventually cause the well to fill in with packing material. It does not appear that any of these have occured or had a negative impact on the ability to sample and obtain ground water quality data. The use of plastic piping is not clearly violated as the guidance does allow for PVC piping which is a plastic. There has been no evidence that the piping has inhibited ground water monitoring. If anything the plastic piping could potentially present false positives in analytical sampling. The centralizers for deeper wells with a larger borehole and sand packing (different from natural geologic fill) are important to ensure homogeneity when purging. This is not as critical for obtaining ground water samples with alluvial wells that have narrow annular space filled with native pack. For the purposes soley related to the Discharge Permit, data has not supported that ground water data has been compromised by the construction of Monitoring wells MCO-3 or MCO-7	
86	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring wells MCO-3 and MCO-7 are not constructed properly and must be plugged, abandoned and replaced prior to a hearing	Slotting was constructed with a 1/4" drill bit. Slot sizing is not adequate to prevent packing material from entering casing.		
87	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring wells MCO-3 and MCO-7 are not constructed properly and must be plugged, abandoned and replaced prior to a hearing	Plastic piping was used for the casing (no information on the type of plastic or if it is PVC) it is uncertain that the material used is compatible with the chemistry of the groundwater and appropriate for the contaminants of concern from RLWTF.		
88	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring wells MCO-3 and MCO-7 are not constructed properly and must be plugged, abandoned and replaced prior to a hearing	Centralizers were not installed near the top and bottom of the casing and the casing was not centered.		
89	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring wells MCO-3 and MCO-7 are not constructed properly and must be plugged, abandoned and replaced prior to a hearing	Filter pack of clean silica sand was not installed in the annular space surrounding the screens. The annular space used drill cuttings instead		
90	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring wells MCO-3 and MCO-7 are not constructed properly and must be plugged, abandoned and replaced prior to a hearing	The wells do not have a betonite seal directly above the screened interval. These wells used borehole cuttings		
91	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring wells MCO-3 and MCO-7 are not constructed properly and must be plugged, abandoned and replaced prior to a hearing	The annular space above the well screens was not sealed with a cement grout or bentonite -based sealing material as required. These wells have annular space filled with borehole cuttings. MCO-7 did not use a tremie pipe to place sealing materials		
92	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring wells MCO-3 and MCO-7 are not constructed properly and must be plugged, abandoned and replaced prior to a hearing	There is inadequate information regarding the size of the cap placed on the wells. Information should include the slope of the pad, radius and thickness to ensure compliance with the guidance (2' radius pad with 4" min thickness)		
93	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring Wells MCO-3 and MCO7 are not located correctly and should be plugged and abandoned and replaced closer to effluent canyon prior to a hearing	The location of MCO-3 and MCO-7 are inadequate to monitor groundwater contamination in the shallow alluvium along Mortandad Canyon given the large volume of wastewater from O51. The Distance to MCO-3 is 1,100 feet, too far to monitoring discharges from Outfall 051.		

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94	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Monitoring Wells MCO-3 and MC07 are not located correctly and should be plugged and abandoned and replaced closer to effluent canyon prior to a hearing	Distance between MCO-3 and MCO-7 is too great given the contaminated soils between the two wells. The discharges from 051 will mobilize these contaminants	If there is mobilization of these contaminants, MCO-7 would be the MW which would detect such an event. This well is required to be monitored to ensure discharges don't cause an effluent or leachate to impact ground water.	
95	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	MCO-4 and MCO-4B should be replaced	MCO-4 and MCO-4B are in a zone of contaminated sediments and do not have water levels to collect samples.	The Discharge Permit does not require sampling or monitoring of MCO-4 or MCO-4B. Although the overall screen length was satisfactory, NMED is aware that the well does not have adequate water and would not provide necessary data to determine ground water quality. The contingency refers to those wells required under the Discharge Permit, not all wells. Even if they were required to be part of the Permit, it appears that there is an inadequate alluvial aquifer in the vicinity of MCO-4 to monitor	
96	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	MCOI-6 should require replacement	the top of the screen is below the water table	The screen is identified to be 23 feet below the DTW.	
97	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	MCOI-6 should require replacement	the drilling method allowed organic drilling fluids to enter the strata surrounding the well screen	This well was identified to have been drilled in 2004. It has exceedances in dieldrin, chromium and NO3-N as well as alkalinity. If organic drilling fluids were used, they would result in a false positive for impacts from 051 and would then be required to be investigated under the contingency plan.	
98	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Replacement of wells should require boreholes drilled through the monitoring zone without the introduction of drilling muds or additives (air or water only)	The use of drilling fluids form a new chemistry in the sampling zone with strong properties to conceal accurate knowledge of many LANL contaminants	See reference. Handbook of suggested practices for the design and installation of ..., Volume 1 By National Water Well Association, Environmental Monitoring Systems Laboratory (Las Vegas, Nev.)	
99	Communities for Clean Water et. al	12.12.13	Condition 36-Monitoring Well Location & Condition 37-Monitoring Well Construction	Request	Requests replacement of the wells prior to hearing	HWB has confirmed that the wells do not meet the criteria to be considered monitoring wells under the Consent Order. Rehabilitation of the wells, in many cases has proved unsuccessful and therefore must be replaced		

Fullam Docs 030714 / caseloads / LANL / DP 1132 TA-50 RLWTF / DP 1132 Comments Nuclear Watch 1212B

nuclear watch new mexico

December 12, 2013

Secretary - Designate Ryan Flynn
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Re: Draft Discharge Permit, DP-1132, Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility at Technical Area 50

Secretary-Designate Flynn and Jennifer Fullam:

We respectfully submit these comments for the Draft Discharge Permit, DP-1132, Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility at Technical Area 50, dated September 13, 2013.

Nuclear Watch New Mexico seeks to promote safety and environmental protection at nuclear facilities; mission diversification away from nuclear weapons programs; greater accountability and cleanup in the nation-wide nuclear weapons complex; and consistent U.S. leadership toward a world free of nuclear weapons.

First, we question exactly what building this permit covers. Exactly what is discharged is dependent on the number and type of buildings that are actually built. Over the years, the Radioactive Liquid Waste Treatment Facility (RLWTF) has been designed as one building and as two separate buildings. Is there a separate Low Level Waste (LLW) Facility and separate Transuranic Liquid Waste (TLW) Facility? Is an existing facility being renovated? What is the timing of the construction of these two buildings? Do the discharges from each building combine somewhere? This Permit must not be released until the final building designs are released. If it is two buildings, does the 40,000 gal per day discharge apply to both as a total? How

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much is permitted per building per day?

A review is required that the facility is up-to-date with the legal requirement for public review of major federal proposals under the National Environmental Policy Act (NEPA). It has been over 5 years since the last NEPA review of this ever-changing project. NEPA review commonly results in the implementation of actions designed to mitigate potentially harmful environmental effects.

This Permit must not be released until all concerns of the Defense Nuclear Facilities Safety Board are met.

Clarification on what is going where is required. The Permittees are authorized to discharge up to 40,000 gallons per day (gpd) of treated wastewater, in accordance with the Conditions set forth in Section VI of this Discharge Permit. Discharges shall be to either the Mechanical Evaporator System (MES), the synthetically lined Solar Evaporative Tank system (SET), or through an outfall (identified as Outfall 051) also regulated by a National Pollutant Discharge Elimination System (NPDES) permit. What is the logic behind what waste goes where and when? Who decides where the waste goes any particular time? Will 40,000 gpd ever actually be discharged to the outfall? A per gallon per day limit on discharges to the outfall must be imposed.

For many years, the public has been lead to believe that the Lab was heading towards zero discharge from this facility. A full explanation of why this has changed is needed. We request that the outfall be eliminated from the permit. If waste is still allowed to be released through this outfall, public notification must be required each time treated waste is released to Mortandad Canyon.

Mortandad Canyon is severely contaminated, particularly the perched aquifers that are protected by law for all New Mexicans. As a condition of this permit please require that some remediation of Mortandad Canyon be implemented.

Please require the Department of Energy (DOE) and Los Alamos National Laboratory (LANL) to provide the closure and post-closure plans for the Radioactive Liquid Waste Treatment Facility as part of their application for the groundwater discharge permit DP-1132. The draft permit now out for public comment and review allows DOE and LANL to submit the closure plans in 180 days after the issuance of the permit. This places both the public and your agency at a distinct disadvantage. It also substantially increases the cost of the permitting process at a time when state resources are scarce.

It is unclear to us that the wells in section 28., ***GROUND WATER MONITORING***, are suitable to monitor outfall 051. For instance, the screen of R-60 is at 1330 feet below ground surface. How can a screen at that depth detect anything released from Outfall 051?

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Treated effluent samples for Outfall 051 must be taken for each discharge, not just monthly. Nothing that the Lab does is standard. The types of wastes treated on any given day may be wildly different from the day before.

> 25. **EFFLUENT SAMPLING** -The Permittees shall sample and analyze effluent waste streams discharged to Outfall 051, the SET, and the MES.
> Treated effluent samples shall be collected once per calendar month for any month in which a discharge occurs to Outfall 051. The Permittees shall collect a grab sample of treated effluent which shall be analyzed for all water contaminants listed in 20.6.2.3103 NMAC, TKN and all toxic pollutants as defined in 20.6.2.7.WW NMAC.

For these reasons and others, we request a public hearing.

These comments and questions respectfully submitted,

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