



*Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, M704
Los Alamos, New Mexico 87545
(505) 667-0666/FAX: (505) 667-5224*

*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: September 28, 2011
Refer To: ENV-RCRA-11-0204
LAUR: 11-11554

Ms. Hannah Branning
U.S. Environmental Protection Agency, Region 6
Water Quality Protection Division
Planning and Analysis Branch (6EN)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear Ms. Branning:

SUBJECT: LOS ALAMOS NATIONAL LABORATORY, NPDES PERMIT NO. NM0028355, NOTICE OF PLANNED CHANGE AT NPDES OUTFALL 051

National Pollutant Discharge Elimination System (NPDES) Permit No. NM0028355 for the National Nuclear Security Administration (NNSA) and Los Alamos National Security, LLC (LANS) at Los Alamos National Laboratory (the Laboratory) requires the permittees to notify the U. S. Environmental Protection Agency (EPA) regarding any physical alterations or additions to the permitted facility that could significantly change the nature or increase the quantity of pollutants discharged (see Part III.D.1.a. *Reporting Requirements*).

The purpose of this letter is to notify the EPA of two process changes at the TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF). The changes include the use of perchlorate ion exchange and the use of seawater reverse osmosis. In addition, this letter provides updated information about the installation of zero liquid discharge (ZLD) tanks. This notification is being provided even though neither of these process changes will change the nature of or increase the quantity of pollutants discharged at NPDES Outfall 051.

Perchlorate Ion Exchange

In 2002, the RLWTF installed the capability to remove perchlorate via ion exchange. The capability was installed in anticipation of EPA regulations that would limit perchlorate in discharges. To date, the NPDES permit for Outfall 051 has not established a discharge limit for perchlorate, nor has the EPA enacted regulations concerning perchlorate. The Laboratory's NPDES permit does require

annual monitoring for perchlorate. Currently, treated water is being discharged to the environment via evaporation or through Outfall 051.

NNSA/LANS will be modifying its treatment process to bypass the perchlorate ion exchange treatment process whenever treated water will be evaporated. Treatment will include ion exchange for perchlorate removal, when water is to be discharged through Outfall 051.

Sea Water Reverse Osmosis

The RLWTF generates secondary waste streams that cannot be processed with existing treatment equipment. These secondary wastes are currently being concentrated in a mechanical waste evaporator at the RLWTF, then shipped for offsite treatment and disposal as low-level radioactive solid waste. NNSA/LANS is currently designing a seawater reverse osmosis (SWRO) treatment unit to replace the existing waste evaporator. Replacement would occur during calendar year 2012.

As with the waste evaporator, SWRO treatment will split the secondary waste into two streams. Concentrate from the SWRO unit will be the equivalent of evaporator bottoms, and will be shipped for offsite treatment and disposal as low-level radioactive solid waste. The second output stream, permeate from the SWRO unit, will be the equivalent of evaporator overheads. This stream will be re-treated through the low-level treatment plant.

ZLD Tanks

NNSA/LANS are currently designing concrete tanks, to be located at TA52, for solar evaporation of water treated at the RLWTF. As shown in the enclosed process schematic (Enclosure 1), these tanks would provide another path for the discharge of treated water to the environment, so that treated waters can be discharged either through Outfall 051, by mechanical evaporation, or by solar evaporation in two locations.

The Zero-Liquid-Discharge (ZLD) Project consists of two portions: two concrete evaporation tanks, and a length of buried transfer piping that will connect the RLWTF to the ZLD tanks. Project completion is scheduled for 2012.

The tank portion of the ZLD Project will be located on a site of approximately one acre, located about two-thirds of a mile from the RLWTF within Technical Area 52 of the Laboratory. The site is located along the north side of Puye Road, bounded on the south by the road, and on the north by a steep drop-off in grade. The ZLD tanks will be constructed with concrete walls approximately four feet high, and will have a double liner with leak detection. Project design provides the capability of returning the contents of the tanks to the RLWTF for storage and retreatment, if necessary. Transfer piping, made of high-density polyethylene (HDPE), will be routed west from the proposed tanks, along Puye road toward the RLWTF. The length of transfer pipe will be approximately 3500 feet.

Enclosure 1 provides a revised schematic for the treatment of wastewater received at RLWTF for your review. The schematic includes the above-described changes to the treatment process.

Ms. Hannah Branning
ENV-RCRA-11-0204

- 3 -

September 28, 2011

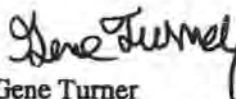
Please contact Marc Bailey at (505) 665-8135 or Mike Saladen at (505) 665-6085 of the Water Quality and RCRA Group (ENV-RCRA) if you have questions.

Sincerely,



Anthony R. Grieggs
Group Leader
Water Quality & RCRA Group (ENV-RCRA)
Los Alamos National Security, LLC

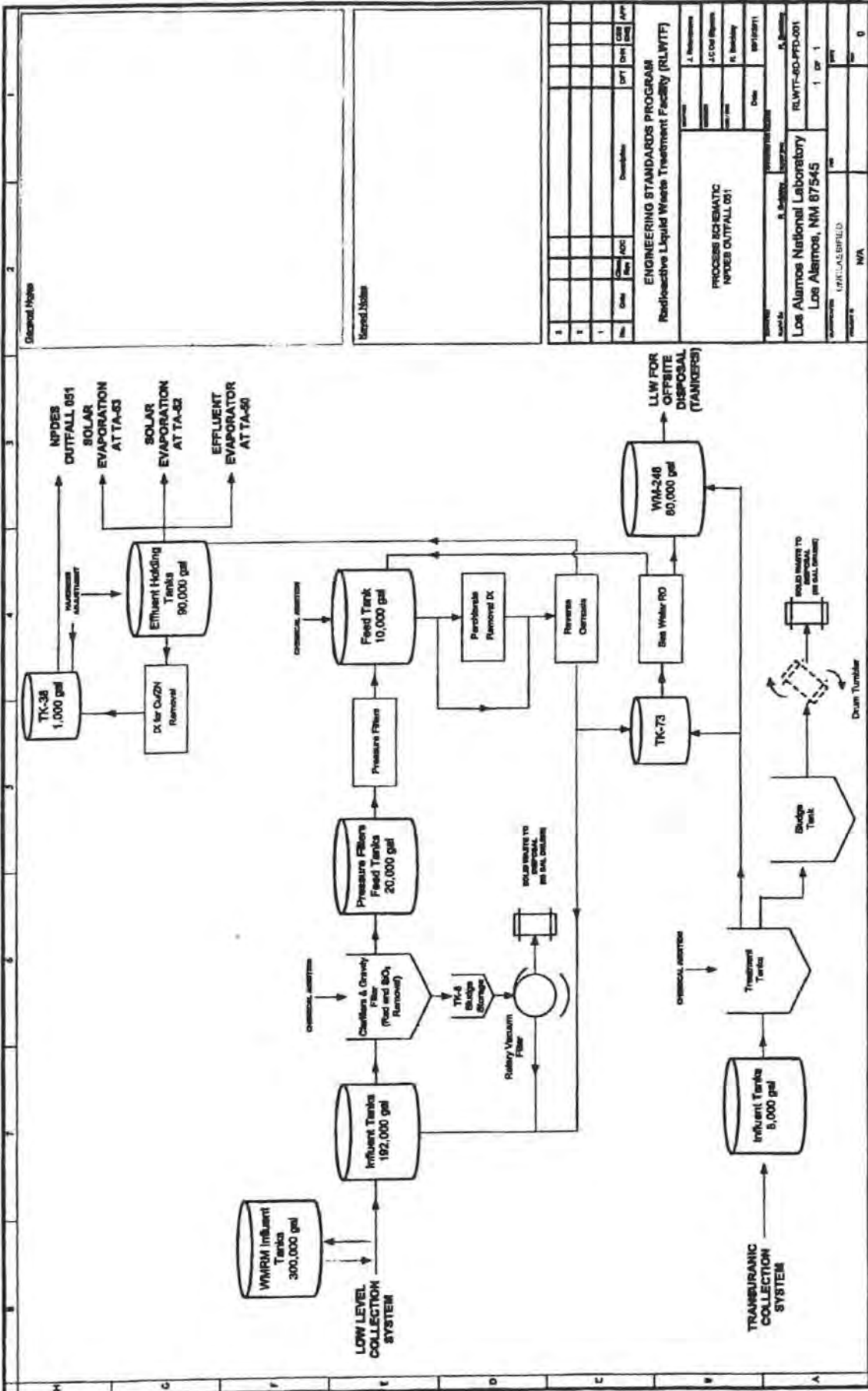
Sincerely,



Gene Turner
Environmental Permitting Manager
Environmental Projects Office
Los Alamos Site Office
National Nuclear Security Administration

ARG:GET:MS/lm

Cy: Isaac Chen, USEPA/Region 6, Dallas, TX, w/enc.
James Bearzi, NMED/SWQB, Santa Fe, NM, w/enc.
Jerry Schoepfner, NMED/GWQB, Santa Fe, NM, w/enc.
Jim Davis, NMED/RPD, Santa Fe, NM, w/enc.
George Rael, LASO-EO, w/enc., A316
Steve Yanicak, LASO-GOV, w/enc., M894
Carl A. Beard, PADOPS, w/o enc., AI02
J. Chris Cantwell, ADESHQ, w/o enc., K491
Mike Saladen, ENV-RCRA, w/o enc., K490, (E-File)
Marc Bailey, ENV-RCRA, w/enc., K490, (E-File)
Bob Beers, ENV-RCRA, w/enc., K490, (E-File)
ENV-RCRA File, w/enc., M704
IRM-RMMSO, w/enc., A150



General Notes

Revised Notes

