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October 9, 1992

Mr. Edward M. Lee, Jr.
Technical Representative
EG&G Rocky Flats, Inc.
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Golden, Colorado 80402-0464

Subject: Rocky Flats Plant Solar Evaporation Ponds Stabilization Project
[WBS 253 PROCESS CONTROL PLAN - 207C PONDSLUDGE PCP — HNUS ROCKY FLATS] POZZOLAN BLENDING PROCEDURE
RF-HED-92-0649

Dear Mr. Lee:

The Pozzolan Blending Procedure will be incorporated into the Process Control Plan as APPENDIX E. We are submitting it separately to solicit review and comment prior to the next submission of the Process Control Plan. The procedure is generic to both the A/B and C/Clarifier Process and thus will be an appendix to both of the Process Control Plans.

The Brighton Facility is currently operational. All purchase orders for bulk materials are in place. HNUS is recommending blending one truckload of pozzolan at the facility and delivery to the Rocky Flats facility. This would enable the following items to be verified:

1. Quality Assurance Audit by EG&G of the facility and a review of documentation capabilities of the facility.

2. Review by security of any requirements for loading/unloading vehicles.

3. Review of transportation/delivery procedures required in the PA.

4. Determination on whether a pozzolan load will activate radiation alarms at the PA Gate.

5. Perform SO Test of pozzolan storage and delivery system on site.

6. Witness by EG&G of blending system and the sampling equipment located in Brighton and the Rocky Flats equipment.

We envision delivering approximately fifteen (15) tons of pozzolans to the C Process Train this year. This material will be consumed during the Cold SO Test and thus we would not consider it a problem to store this material over the winter if required.

Three sets of samples are required to be taken: raw pozzolan samples at Brighton, blended samples at Brighton, and blended samples at the Rocky Flats facility. The long term storage of both raw pozzolan samples and blended samples needs to be resolved. We anticipate needing a shelf space area of approximately 30 x 40 feet for the Pondsludge processing samples. In addition, the samples taken onsite need to have an area assigned for storage either within the PA or alternate location. The procedure establishes the hold time for these samples to be two (2) years in length. HNUS recommends storage of these samples offsite from the Rocky Flats facility. HNUS does not have any assigned warehouse storage for this Project. Please advise what actions are required by HNUS.

The current schedule shows the pozzolan storage system at Rocky Flats to be operable by 10/24/92. We would like to schedule these witness tests of the Brighton Facility prior to that date if acceptable.

If you have any questions, please advise.

Sincerely,

HALLIBURTON NUS ENVIRONMENTAL CORPORATION

Ted Bittner

Ted A. Bittner
Project Manager

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Enclosures

cc: R. Rodrigue

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POZZOLAN BLENDING AND SAMPLING PROCEDURE

1.0 INTRODUCTION

The HNUS Pittsburgh Laboratory demonstrated, through extensive tests, that proper proportioning of the pozzolans is an important element in the successful solidification of the pond sludge waste. The pozzolan blend must be proportioned to meet the requirements of the job as specified in the Treatability Study and presented in Section 3.3 of this PCP.

2.0 GENERAL

2.1 The Winslow 25,000 lb type "T" beam scale used in the scale tank system at the Brighton Halliburton Service Center shall be verified to be in calibration. This scale shall be calibrated annually.

2.2 The scale used to weigh plasticizer shall be verified to be in calibration. This scale shall be calibrated at least every six months.

2.3 All reagents shall be stored and blended at the Brighton Halliburton Service Center, as shown in Figure 1.

3.0 MATERIAL RECEIVING

3.1 Bulk Materials

3.1.1 The manufacturer's material certifications (certs) for cement, flyash, and bulk lime shall be verified to meet specifications (as defined in Appendix B of the PCP) prior to off-loading into the storage tanks dedicated to the EG&G Rocky Flats Project. The original certs shall be forwarded to the HNUS Broomfield Office for filing as Quality Records, and to EG&G when requested.

3.1.2 A sample shall be taken of all pozzolan materials upon arrival at Brighton. The sample shall be approximately one gallon in volume and placed in a one gallon plastic bucket (with lid) labeled with a code (see Table 1) referenced to the Bulk Materials Unloading Report (see Figures 3, 4, 5, 6).

3.1.3 Samples of incoming bulk materials shall be maintained in a dry storage area at the Brighton Service Center for a period of approximately two weeks and then delivered to HNUS at Broomfield.

3.2 Sacked Materials

3.2.1 The manufacturer's material certification for sacked plasticizer and sacked lime shall be verified to meet specifications (as defined in Appendix B of the PCP) before accepting delivery. The original certs shall be forwarded to the HNUS office.

3.2.2 A sample shall be taken of each shipment of sacked materials upon arrival at Brighton. The sample shall be approximately one quart in volume. The sample shall be placed in a plastic container (with lid), labeled with a code (see Table 1) referenced to the Bulk Materials Unloading Report (see Figures 3, 4, 5, 6).

3.2.3 Samples of sacked materials shall be maintained in a dry storage area at the Brighton Service Center for a period of approximately two weeks and then delivered to HNUS at Broomfield.

3.2.4 All sacked lime and sacked plasticizer shall be stored on pallets in a dry area at the Brighton Halliburton Service Center.

3.2.5 Sacked material shall be used on a first in, first out basis.

4.0 BLENDING REAGENTS

4.1 Each outgoing truck will be loaded with 2 scale tank loads of approximately 180 cf each; therefore each truck load will consist of approximately 360 cf (about 30,000 lbs) of blended reagent.

4.2 The initial blend shall be designated mix "C" (for 207C/Clarifier application). Other mixes may be required and will be designated with a unique mix name. The ratio of reagents (by weight) for mix "C" shall be 1 part cement to 2 parts flyash to .075 parts lime. Plasticizer shall be added to the mix at 0.1% by weight of pozzolans. A scale tank load shall consist of the following materials:

(a) 4700 lbs type V cement
(b) 350 lbs lime
(c) 14.5 lbs plasticizer
(d) 9400 lbs Type C flyash

The materials should be added to the scale tank in the order listed(a to d), since experience has shown that a more even distribution of additives is obtained when the smaller volume materials are sandwiched between larger

volume components. Section 3.3 of this PCP discusses the acceptable operating range for the pozzolan composition (Tables 1 and 3).

4.3 After all components are added (cement, plasticizer, lime, and flyash), a weight ticket shall be generated with the following:

(a) date
(b) bulk delivery ticket number,
(c) trailer no.
(d) weight ticket attached to bulk material delivery ticket

4.4 After all of the reagents have been loaded into the scale tank, the blend shall be moved four times to insure proper mixing of the components. These movements shall be:

(a) scale tank to No. 1 (220 cf) blend tank,
(b) No. 1 blend tank to No. 2 (440 cf) blend tank
(c) No. 2 blend tank to bulk truck
(d) bulk truck to RFP on-site storage tank.

4.5 During the transfer of blended reagents from the No. 2 blend tank to the bulk truck, a sample shall be taken of the combined two scale tank load (which makes up a truckload), using the Halliburton ACCUSAMPLE device (see 7.0, blended reagent sampling). The sample shall be approximately 1 gallon in volume and placed in a one gallon plastic bucket (with lid), labeled with a code (see Table 1) referenced to the Bulk Materials Delivery Ticket (Figure 1).

4.6 Samples of blended reagents shall be maintained in a dry storage area at the Brighton Service Center for a period of approximately two weeks and then delivered to HNUS at Broomfield.

4.7 For each truckload of reagents, a Bulk Materials Delivery Ticket (Figure 7) shall be filled out. The information on this document shall contain (as a minimum):

(a) date
(b) location of service center
(c) trailer number into which the blended materials were placed
(d) the weight of material in each of the two scale tank loads delivered into the bulk truck
(e) the total weight of reagents delivered to the bulk truck
(f) the name of the person who prepared the Bulk Materials Delivery Ticket.

4.8 A Certificate of Compliance (Figure 2) shall be prepared for each truckload of reagents delivered to RFP.

4.9 Each Certificate of Compliance shall be uniquely numbered and the bulk plant operator who blended the material shall record on it:

(a) date material was blended
(b) the bulk delivery ticket number to which the certificate of compliance applies
(c) the total weight of material listed on the applicable Bulk Material Delivery Ticket
(d) the signature of the bulk plant operator and date of signature.
(e) Approval signature by designated Halliburton Services representative and date of signature.

5.0 TRANSPORTATION AND RECEIVING AT RFP

5.1 All bulk delivery trailers shall have EG&G supplied permanent bands placed on all hatch covers. These bands shall remain in place for the duration of the project.

5.2 After a trailer has been loaded, the pneumatic line shall be capped and sealed with an EG&G supplied band.

5.3 Loaded truck/trailers shall be delivered to 904 pad security inspection area.

5.4 After security inspection, the truck driver shall deliver the load to the designated PAC entrance.

5.5 At the PAC entrance, the truck driver shall turn the truck over to the designated equipment operator inside the restricted area, along with two copies of the bulk material delivery ticket, the original certificate of compliance, and one copy of the applicable material certifications.

5.6 The equipment operator designated to receive bulk trucks inside the restricted area shall pneumatically transfer the blended pozzolans into storage bins at the 750 pad. The storage bins into which the contents of each truck tank were pumped shall be noted on the supplied Bulk Delivery Tickets. The equipment operator who makes the transfers shall initial the Bulk Delivery tickets and deliver them, along with the rest of the associated documents to the shift foreman on duty. The equipment operator receiving bulk trucks shall coordinate his work with the 750 Pad Operator and ensure that all deliveries are noted on the 750 Pad Log.

5.7 At the end of each shift, all documents relating to delivery and receipt of blended materials shall be forwarded to the HNUS office at the 904 Pad.

6.0 BLENDED REAGENT HANDLING AT PROJECT SITE

6.1 Blended reagents received from the Brighton Service Center shall be placed in on-site storage bins designated by the letters "D" through "I" (see Figure 1). All movement of blended pozzolans into the bins, out of bins, between bins, or into the scale tank shall be documented, signed, and dated on the 750 pad log.

6.2 When sampling bins "A", "B", and "C" are all empty, they will be refilled from the storage bins. The contents of the freshly filled sampling bins shall be called a Pozzolan Batch (PB) and given a unique number (PBN). While a new Pozzolan batch is being loaded into the sampling bins, the blended reagents shall be sampled using a Halliburton ACCUSAMPLE (see 7.0, Sampling blended reagent). The sample volume shall be approximately one gallon, and shall be labeled with the PBN, date and time.

6.3 Each on-site scale tank load shall be recorded on the Scale Tank (on-site) kept by the assigned operator. The operator shall record:

(a) Pozzolan Batch Number (PBN)
(b) total weight
(c) time and date loaded into scale tank.
(d) signature of recorder

7.0 BLENDED REAGENT SAMPLING

7.1 Blended reagents, both at the Brighton service center and at RFP job site, shall be sampled using Halliburton's ACCUSAMPLE device (see Attachment A). The ACCUSAMPLE is an in-line device which opens periodically to capture small volumes of the material flowing through the line. The time delay between openings can be varied to insure that an adequate volume of sample is acquired which is representative of the total volume of material which flowed through the line during the sampling period.

8.0 ATTACHMENTS

Figure 1 - Material Flow Diagram

Figure 2 - Halliburton Brighton Facility Certification of Compliance

Table 1 - Labeling Code for Samples

Figure 3 - Bulk Materials Unloading Report (Cement)

Figure 4 - Bulk Materials Unloading Report (Flyash)

Figure 5 - Bulk Materials Unloading Report (Lime)

Figure 6 - Bulk Materials Unloading Report (Plasticizer)

Figure 7 - Bulk Materials Delivery Ticket

Figure 8 - 750 Pad Pozzolan Log

Figure 9 - Scale Tank Log (on-site)

Attachment A - ACCUSAMPLE Specifications

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LABELING CODE FOR SAMPLES

To be used on bulk materials unloading reports, and bulk materials delivery tickets.

CODE	SAMPLE TYPE
C	Cement
F	Flyash
L	Lime
P	Plasticizer
M	Mix (Blended Reagents)

TABLE 1

750 PAD
POZZOLAN LOG

DATE: _____

BULK MATERIAL TICKET NO.	PLACED IN STORAGE TANK NO.	TRANSFERRED TO SAMPLE TANK NO.	POZZOLAN BATCH NO.	SIGNATURE

FIGURE 8

SCALE TANK LOG
(On-Site)
DATE: _____

TIME	WEIGHT	POZZOLAN BATCH NO.	SIGNATURE

FIGURE 9

ACCUSAMPLE
Dry Bulk Material Collector
P/N 940.03625
LOAD CODE W455

The ACCUSAMPLE Dry Bulk Material Collector is designed to replace inaccurate and dirty manual sampling methods. The automatic sampler will obtain a representative sample of the bulk material as it is pneumatically conveyed. The sampler controls can be adjusted to vary the delay between sampling cycles. Short delay ranges are from 0 to 15 seconds; long delay ranges are from 0 to 120 seconds. This feature will control the amount of sample collected from large or small material batches. The sampler is vented to the bulk plant dust collection system for clean operation with the sampled material collected in inexpensive plastic bags.

The ACCUSAMPLE Dry Bulk Material Collector is air powered with all pneumatic controls. There is no need for electric wiring or expensive explosion proof electrical parts.

The sampler is mounted directly in a 5 inch horizontal pneumatic conveying line. The sampler has Victaulic grooved connections for easy installation. Actual mounting of the sampler will generally require cutting the conveying pipe and welding on Victaulic grooved nipples. The sampler can then be clamped in place using Victaulic couplings. A brace should be added to the sampler to prevent it from turning at the Victaulic couplings. The material flow through the sampler must be from the left to right when facing the door of the sampler body. If right to left flow is required, contact Halliburton Services Engineering Department, Duncan, Oklahoma 73536-0312.

The sampler requires an air supply of 90 psi or greater. This can be provided through a hose or pipe of 3/8 inch I.D. or larger.

Batch Size	Delay Setting	Approximate Amount of Material
50 sk	4 sec.	1/2 gal.
150 sk	20 sec.	1/2 gal.
250 sk	20 sec.	3/4 gal.

Materials which can be sampled:
- Powdered additives
- Flowcele
- Kwik Seal
- Perlite
- Calcium Chloride Pellets
- Gilsonite

- The sampler may occasionally plug with large particle materials. The sampler design allow easy cleaning.

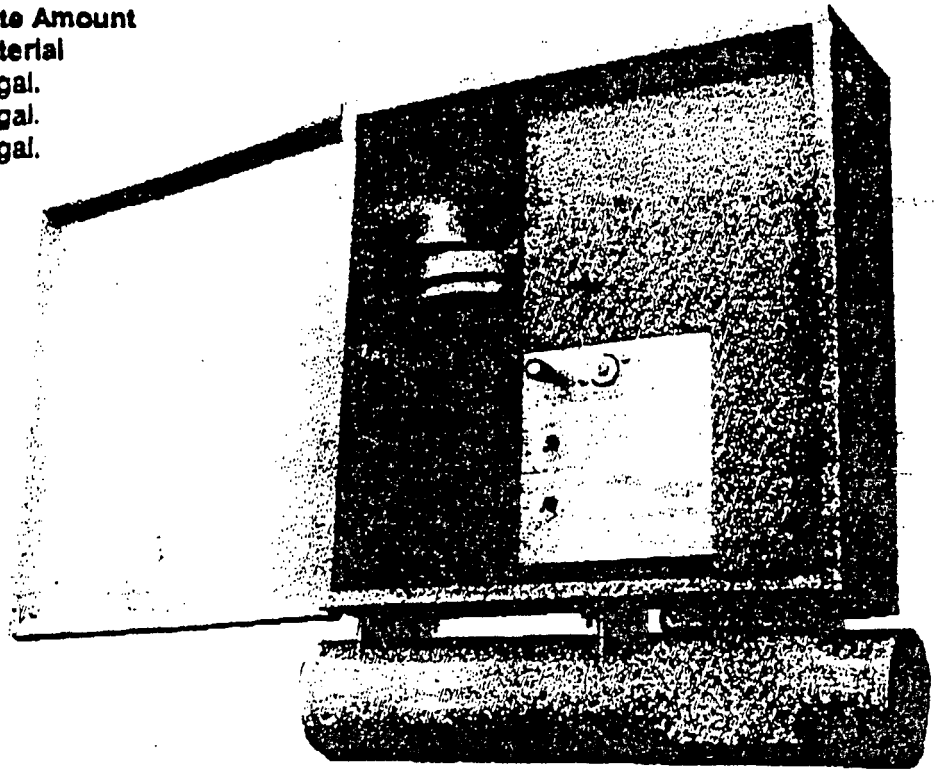

Photo No. 24469-10C

SPECIFICATIONS

DIMENSIONS:

Length	28.0" (0.71 m)
Width	8.5" (0.22 m)
Height	31.6" (0.80 m)
Conveying Pipe Inlet & Outlet	5" Nom. (0.127 m)

WEIGHT (estimated) :

Total	150 lbs (68 kg)