

DISTRIBUTION SHEET

To Distribution	From Production Planning & Control	Page 1 of 1		
		Date: 07/24/97		
Project Title/Work Order HNF-SD-WM-DP-246, Rev. 0A "Analytical Results for the 105-N Lift Station Sediment Disposition Sample Characterization Project.		EDT NO.: N/A		
		ECN NO.: ECN-633359		
Name	MSIN	Text With all Attach	EDT/ECN ONLY	
<u>Bechtel Hanford, Inc.</u> J. H. Kessner	B1-35	X		
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* Needs only releasing paperwork, not a copy of the released document.



ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN **633359**

Proj.
ECN

2. ECN Category (mark one) Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedeure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. George L. Miller, Production Planning & Control, T6-06. 373-4739		4. USQ Required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Date 07/24/97
	6. Project Title/No./Work Order No. 105-N		7. Bldg./Sys./Fac. No. 105-N	8. Approval Designator Q
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.) HNF-SD-WM-DP-246, Rev. 0		10. Related ECN No(s). N/A	11. Related PO No. N/A

12a. Modification Work <input type="checkbox"/> Yes (fill out Blk. 12b) <input checked="" type="checkbox"/> No (NA Blks. 12b, 12c, 12d)	12b. Work Package No. N/A	12c. Modification Work Complete N/A Design Authority/Cog. Engineer Signature & Date	12d. Restored to Original Condition (Temp. or Standby ECN only) N/A Design Authority/Cog. Engineer Signature & Date
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13a. Description of Change This ECN is being generated in order to update/add additional information to the existing document.	13b. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
---	--

14a. Justification (mark one)			
Criteria Change <input checked="" type="checkbox"/>	Design Improvement <input type="checkbox"/>	Environmental <input type="checkbox"/>	Facility Deactivation <input type="checkbox"/>
As-Found <input type="checkbox"/>	Facilitate Const <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>	Design Error/Omission <input type="checkbox"/>

14b. Justification Details
 This ECN will assist in the completion of the documentation process for this document.

15. Distribution (include name, MSIN, and no. of copies)
 See attached distribution.



Analytical Results for the 105-N Lift Station Sediment Disposition Sample Characterization Project

George L. Miller
Waste Management of Hanford, Inc., Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: ECN-633359 UC: 2070
Org Code: 7576B Charge Code: MD378
B&R Code: EW 3120074 Total Pages: 135

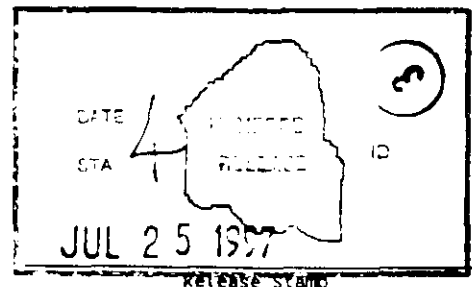
Key Words: Analytical Results, 105-N, Lift Station, Sediment,
Disposition, Sample Characterization, Project

Abstract: N/A

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Release Approval
7/24/97
Date



Approved for Public Release

HNF-SD-WM-DP-246, REV. 0A

ANALYTICAL SERVICES

**ANALYTICAL RESULTS FOR THE 105-N LIFT STATION
SEDIMENT DISPOSITION SAMPLE CHARACTERIZATION PROJECT**

Project Coordinator: George L. Miller

**Prepared for the U.S. Department of Energy
Office of Environmental Restoration
and Waste Management**

by

**222-S Laboratory
Rust Federal Services of Hanford Inc.
P.O. Box 700
Richland, Washington**

**ANALYTICAL RESULTS FOR THE 105-N LIFT STATION
SEDIMENT DISPOSITION SAMPLE CHARACTERIZATION PROJECT,**

INTRODUCTION

Project Documentation and Direction

Analytical direction for this project was provided in the following References.

1. Thompson, W. S., BHI-00973, Rev. 0, *Sampling and Analysis Plan for the 107-N Basin Recirculation Building Liquid/Sediment*, published on February 6, 1997, Bechtel Hanford, Inc., Richland, Washington 99352.
2. Logan, T. E., *Letter of Instruction for the 105-N Lift Station Sediment Disposition Task*, written to J. L. Jacobsen, Fluor Daniel Hanford, Inc. on April 3, 1997.
3. Meznarich, H. K., WHC-SD-CP-QAPP-016, Rev. 1A, *222-S Laboratory Quality Assurance Plan*, released on August 31, 1995, Westinghouse Hanford Company, Richland, WA 99352.
4. Changes in project requirements as documented by Sample Disposition Record, control number B97-051 (included as Appendix 1).

Project Description

Analyses of particle size distribution, viscosity, and sieve test were requested by Sample Disposition Record to be performed on a sample recollected from the original location. The quantity acquired in the original sample was insufficient to perform these analyses. Analytical work was performed at the 222-S Laboratory for particle size distribution and sieve test. The viscosity analysis was not performed because the sample consisted primarily of pebbles and other objects exceeding the gap size of the viscometer.

The sample submitted for analyses was provided in two fractions: 1) the material collected from the bottom of the facility by suction into the sample bottle, and 2) the fine particulate material trapped on a pleated, in-line cartridge filter. As much particulate material on the filter was resuspended as was possible, then these two sample fractions were combined prior to further sample processing.

SAMPLE COLLECTION AND RECEIVING

Both fractions of this sample were collected on 6/26/97, and were received at the 222-S Laboratory on 6/27/97.

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Reference 2, page 11, requires documentation for 9 items associated with the chain-of-custody. Although all items were observed during sample receipt, they were not documented. These omissions are not quality affecting for this project, but will be addressed in a quality assessment for future improvement.

ANALYTICAL REQUIREMENTS

Although this project required RCRA protocol analyses, SW-846 does not provide methods for the analytes in this report revision. There are no RCRA holding times associated with these analytes.

The quality control (QC) requirements for this project are specified in Reference 1, however they do not apply to the physical tests reported here. There are no LCS standards for particle size, sieve and viscosity analyses and they cannot be spiked for accuracy. Although the procedures allow sample analysis in duplicate, there was insufficient sample to perform duplicate analyses. Consequently an evaluation of precision is not provided.

In revision 0 of this report, a chemist's narrative was provided on pages 53 and 54 for Toxic Characteristic Leach Results. That narrative did not include a citation of the notebook number or pages for that work. Attached to this revised report as appendix 2 is a revised chemist's narrative, which includes the appropriate notebook information, and is to replace pages 53 and 54 of the revision 0 report.

SAMPLE PREPARATION

Controlled procedure, LT-519-103, Revision A-0, was developed and used for the breakdown and sieve analysis of N-Basin samples to meet the requirements of Reference 3.

DISCUSSION OF ANALYTICAL RESULTS

Numatec Hanford Corporation Internal Memo, number 8C510-97-023, *Results of Physical Testing on 105-N Lift Station Sample S97N000071*, is attached to this report and provides the analytical results as well as the chemist's narrative.

As stated in the attached memo, an analysis for viscosity was not performed.

On a dry weight basis, 89.8 percent of the solids were retained on a 150 μm sieve. Of the remaining solids, 99 percent of the particles were of a size less than 10 μm .

NHC
Numatec
Hanford Corporation

HNF-SD-WM-DP-246, REV. 0A

**Internal
Memo**

An SGN/Cogema, Inc. Company

From: Process Chemistry
Phone: 373-4995 T6-07
Date: July 21, 1997
Subject: RESULTS OF PHYSICAL TESTING ON 105-N LIFT STATION SAMPLE
S97N000071

8C510-97-023

To: G. L. Miller T6-06
cc: D. L. Herting DLH T6-07
J. R. Jewett T6-07
K. L. Powell T6-12
A. D. Rice T6-06
C. M. Seidel T6-14
JFO File/LB

This letter reports the results of wet sieve and particle size distribution analyses conducted by Process Chemistry on sample S97N000071 collected from the 105-N Lift Station.

Laboratory Technology Procedure LT-519-103 (Revision A-0) was followed for the wet sieve test on the 105-N Lift Station sample. The sieve test consists of washing sediment through a #100 mesh (150 μm) sieve. The sediment was then dried and weighed to determine the weight percent of particles greater than 150 μm in diameter. On a dry weight basis, 89.8% of the particulates in sample S97N000071 were retained on the #100 mesh sieve. All information associated with this testing was recorded in laboratory notebook HNF-N-22-1. The sieve test was completed on July 9, 1997.

The results of the particle size distribution analysis of sample S97N000071 are presented in Attachment I. The wet sieve testing determined most of the solids in the sample to be above the 150 μm range for the Brinkmann Model 2010 Particle Size Analyzer. Of the particles counted by the instrument, approximately 99% were less than 10 μm in diameter. The particulate mass was spread over the 150 μm diameter range with the greatest concentration at the upper end of the range. The sediment sample probably also contains particles with diameters less than the 0.5 μm lower diameter limit of the instrument. Laboratory Technology Procedure LT-519-101 (Revision A-1) was followed for the particle size distribution analysis. All information associated with this testing was recorded in laboratory notebook RHO-RE-NB-208. The particle size analysis was completed on July 16, 1997.

The viscosity of sample S97N000071 was not measured because the sample primarily consisted of pebbles and other objects exceeding the gap size of the viscometer.

G. L. Miller
Page 2
July 21, 1997

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80510-97-023

If you have any questions on this letter, feel free to call me at 373-4995.



J. F. O'Rourke
Process Chemistry
Numatec Hanford Corporation

Attachment

HNF-SD-WM-DP-246, REV. 0A

8C510-PCS97-023

Attachment I

105-N LIFT STATION SEDIMENT PARTICLE SIZE DISTRIBUTION

Consisting of 5 Pages including the cover page

HNF-SD-WM-DP-246, REV. 0A

SAMPLE NAME : 105-N LIFT STATION 6/26/96
 FILE NAME : S97N71

DATE	: 16/07/1997	ACQ. RANGE	: 0.5-150	COUNTS	: 902143
TIME	: 06:42	ACQ. MODE	: SAMPLE	S.N.F.	: 0.50
CONFIG.	: 1 (0.7 S1)	ACQ. TIME	: 6018 SEC	S.D.U.	: 2766
CELL TYPE	: MAGNETIC (2)	SAMPLE SIZE	: 5	CONCENTR.	: 5.9E+05 #/ml
SAMPLE TYPE	: REGULAR	REQ. CONF.	: None	SOLIDS	: 1.4E-02 %

PROBABILITY NUMBER DENSITY GRAPH

Name: 105-N LIFT STATION 6/26/96

Median : 0.98µm

5.9E+05 #/ml (100.0%)

Mean(nl): 1.57µm

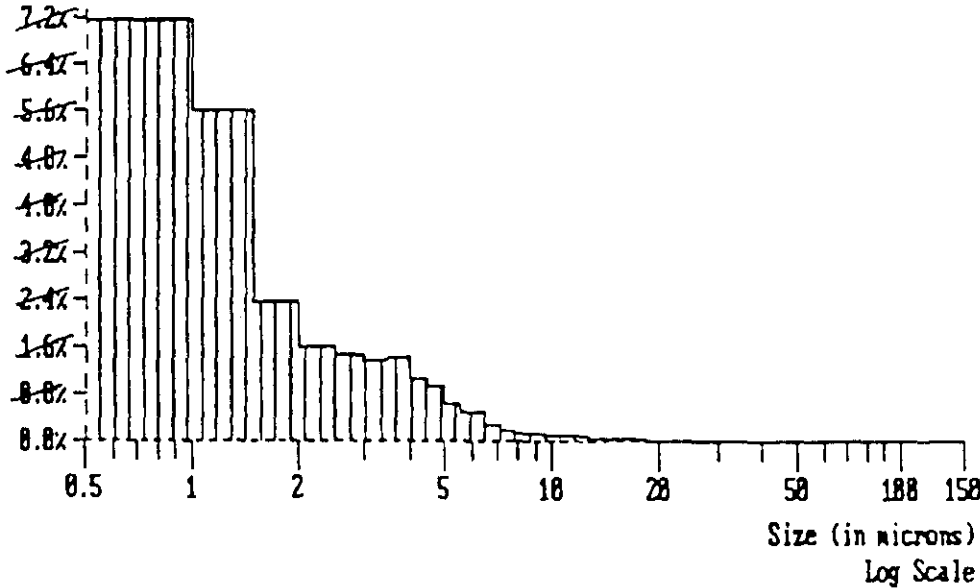
Mode at 0.75 µm

S.D.(nl): 2.74µm

Conf(nl): 100.00 %

<< SCALE RANGE (µm): ADJUSTED >>

ARBITRARY UNITS
 JFO 7/16/97



GALAI CISEL VERSION 4.3 (WHC PROCESS CHEM
. LABS)

NUMBER DISTRIBUTION TABLE (RANGES)

SAMPLE NAME : 105-N LIFT STATION 6/26/96
 FILE NAME : S97N71

HNF-SD-WM-DP-246, REV. 0A

 DATE : 16/07/1997 | ACQ. RANGE : 0.5-150 | COUNTS : 902143
 TIME : 06:42 | ACQ. MODE : SAMPLE | S.N.F. : 0.50
 CONFIG. : 1 (0.7 S1) | ACQ. TIME : 6018 SEC | S.D.U. : 2766
 CELL TYPE : MAGNETIC (2) | SAMPLE SIZE : 5 | CONCENTR.: 5.9E+05 #/ml
 SAMPLE TYPE : REGULAR | REQ. CONF. : None | SOLIDS : 1.4E-02 %

RANGE (microns)	LOCAL (%)	UNDER(%)	-CUMULATIVE-	OVER(%)
0.0 - 1.0	52.20	52.20		47.80
1.0 - 2.0	31.20	83.41		16.59
2.0 - 3.0	6.63	90.03		9.97
3.0 - 4.0	4.33	94.36		5.64
4.0 - 5.0	2.41	96.77		3.23
5.0 - 6.0	1.16	97.93		2.07
6.0 - 7.0	0.68	98.61		1.39
7.0 - 8.0	0.30	98.92		1.08
8.0 - 9.0	0.19	99.11		0.89
9.0 - 10.0	0.14	99.24		0.76
10.0 - 20.0	0.51	99.75		0.25
20.0 - 30.0	0.10	99.86		0.14
30.0 - 40.0	0.04	99.90		0.10
40.0 - 50.0	0.04	99.94		0.06
50.0 - 60.0	0.02	99.96		0.04
60.0 - 70.0	0.01	99.97		0.03
70.0 - 80.0	0.01	99.98		0.02
80.0 - 90.0	0.00	99.99		0.01
90.0 - 100.0	0.00	99.99		0.01
100.0 - 150.0	0.01	100.00		0.00

SAMPLE NAME : 105-N LIFT STATION 6/26/96
FILE NAME : S97N71

HNF-SD-WM-DP-246, REV. 0A

DATE : 16/07/1997	ACQ. RANGE : 0.5-150	COUNTS : 902143
TIME : 06:42	ACQ. MODE : SAMPLE	S.N.F. : 0.50
CONFIG. : 1 (0.7 S1)	ACQ. TIME : 6018 SEC	S.D.U. : 2766
CELL TYPE : MAGNETIC (2)	SAMPLE SIZE : 5	CONCENTR. : 5.9E+05 #/ml
SAMPLE TYPE : REGULAR	REQ. CONF. : None	SOLIDS : 1.4E-02 %

PROBABILITY VOLUME DENSITY GRAPH

Name: 105-N LIFT STATION 6/26/96

1.4E-04 cc/ml (100.0%)

Mode at 130.21 µm

<< SCALE RANGE (µm): ADJUSTED >>

Mean(nv): 7.62µm

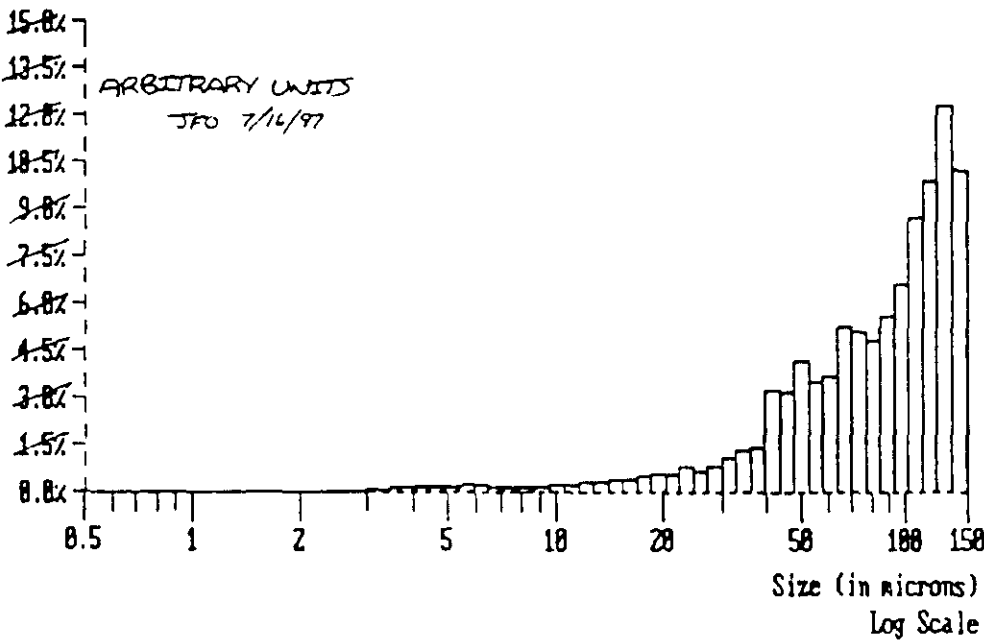
S.D.(nv): 6.64µm

Median : 89.71µm

Mean(um): 86.41µm

S.D.(um): 39.66µm

Conf(um): 100.00 %



GALAI CIS1 VERSION 4.3 (WHC PROCESS CHEM
LABS)

VOLUME DISTRIBUTION TABLE (RANGES)

SAMPLE NAME : 105-N LIFT STATION 6/26/96
 FILE NAME : S97N71

HNF-SD-WM-DP-246, REV. 0A

 DATE : 16/07/1997 | ACQ. RANGE : 0.5-150 | COUNTS : 902143
 TIME : 06:42 | ACQ. MODE : SAMPLE | S.N.F. : 0.50
 CONFIG. : 1 (0.7 S1) | ACQ. TIME : 6018 SEC | S.D.U. : 2766
 CELL TYPE : MAGNETIC (2) | SAMPLE SIZE : 5 | CONCENTR.: 5.9E+05 #/ml
 SAMPLE TYPE : REGULAR | REQ. CONF. : None | SOLIDS : 1.4E-02 %

RANGE (microns)	LOCAL (%)	UNDER(%)	CUMULATIVE-OVER(%)
0.0 - 1.0	0.05	0.05	99.95
1.0 - 2.0	0.19	0.24	99.76
2.0 - 3.0	0.23	0.47	99.53
3.0 - 4.0	0.42	0.90	99.10
4.0 - 5.0	0.49	1.39	98.61
5.0 - 6.0	0.43	1.82	98.18
6.0 - 7.0	0.41	2.23	97.77
7.0 - 8.0	0.29	2.52	97.48
8.0 - 9.0	0.26	2.78	97.22
9.0 - 10.0	0.27	3.05	96.95
10.0 - 20.0	3.15	6.20	93.80
20.0 - 30.0	3.36	9.56	90.44
30.0 - 40.0	4.14	13.70	86.30
40.0 - 50.0	7.81	21.51	78.49
50.0 - 60.0	7.66	29.17	70.83
60.0 - 70.0	7.49	36.66	63.34
70.0 - 80.0	6.56	43.22	56.78
80.0 - 90.0	6.87	50.10	49.90
90.0 - 100.0	7.01	57.11	42.89
100.0 - 150.0	42.89	100.00	0.00

HNF-SD-WM-DP-246, REV. 0A

CHAIN OF CUSTODY FORM AND RSA

HNF-SD-WM-DP-246, REV. 0A

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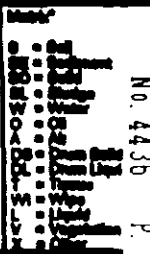
Gr. # 97000331

Bechtel Hanford, Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					Page <u>1</u> of <u>1</u>	
Collector <u>Richard Mahood</u>		Company Contact <u>Steve Trent</u>			Telephone <u>573-1482</u>			Data Turnaround <input type="checkbox"/> Priority <input checked="" type="checkbox"/> Normal
Project Designation <u>105-N Basin Lift Station Sediment Samples</u>		Sampling Location <u>105-N Lift Station</u>			SAE No. <u>B97-076</u>			
Ice Chest No.		Field Logbook No. <u>NA</u>			Method of Shipment <u>Hand Delivered</u>			
Shipped To <u>B225</u>		Offsite Property No. <u>NA</u>			Bill of Lading/Air Bill No. <u>MT</u>			
Possible Sample Hazards/Remarks		Preservation						
		Type of Container		<u>P</u>				
		No. of Container(s)		<u>1</u>				
Special Handling and/or Storage		Volume		<u>1L</u>				
SAMPLE ANALYSIS				Particle Size, Viscosity				
				Prepare for VOA (Methanol) analysis (1)				
Sample No.	Matrix	Date Sampled	Time Sampled					
<u>B0L7D8</u> <u>(S97N000071)</u>	<u>officesolid</u>	<u>6/26/97</u>	<u>1500</u>	<u>X</u>				
Relinquished By				SPECIAL INSTRUCTIONS				
Date/Time				(1) Prepare subsample for shipment to Quarters for methanol analysis.				
Relinquished By <u>Richard Mahood</u>		Date/Time <u>6/29/97</u>		Received By <u>R. E. Hines</u>		Date/Time <u>6/29/97</u>		
Relinquished By <u>Robert F. Hines</u>		Date/Time <u>6-27-97</u>		Received By <u>Robert F. Hines</u>		Date/Time <u>6-27-97</u>		
Relinquished By		Date/Time		Received By		Date/Time		
Relinquished By		Date/Time		Received By		Date/Time		
Received By <u>R. E. Hines</u>		Title <u>Sample Custodian/Sr Chem Tech</u>		Date/Time <u>6-27-97 13:35</u>				
Disposal Method		Disposed By		Date/Time				

JUN 30 1997 12:24 PM

WEC 2225 LAB FROM 2E BACKSIDE

A-14

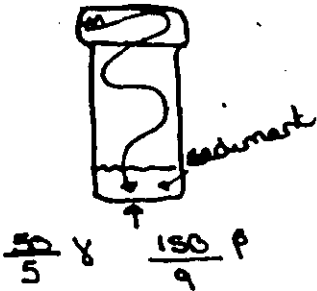


No. 4436 P. 1/3

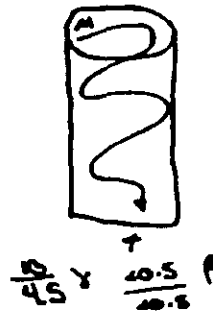
ERC Radiological Survey Record
- DOSE RATE -

Type of Survey (check one only) <input type="checkbox"/> Release <input type="checkbox"/> Routine <input type="checkbox"/> Work Progress <input checked="" type="checkbox"/> Shipment			Survey # RSR - 18-97-4152
RWP # / Rev. # 18-0031 Rev. 4	Date 6-27-97	Time 1200	Location 18-Corridor 22

1 litre bottle x1

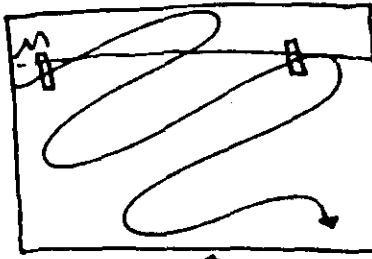


Small plastic x1
shipping container



COPY

Big shipping container x1



RSR # 33053

-C- Contamination Area	-H- High Contamination Area	-B- Radiological Buffer Area	-AR- Airborne Radioactivity Area	-RM- Radioactive Materials Area	-R- Radiation Area	-HR- High Radiation Area
Δ Micro Rem (uR/hr)	N Neutrons (mR/hr)	Contact $\frac{30}{30}$ cm γ	Contact $\frac{30}{30}$ cm β	General Area Dose Rate - Unscattered Meter Reading (uSv/hr)	-SCA- Soil Contamination Area	-VHR- Very High Radiation Area

Instruments

Model	Serial #	Source \checkmark (Initial)	Cal Due Date	Model	Serial #	Source \checkmark (Initial)	Cal Due Date
2038	0014	CM	6/12/98	P-11	0151	CM	4/29/98
GM	0114	CM	4/14/98	NA			

RCT Name/Signature/Date:
Crystal Mitchell 6/27/98
Crystal Mitchell

RCT Supervisor Name/Signature/Date:
J. Craig Jones 6/27/98

HNF-SD-WM-DP-246, REV. 0A

APPENDIX 1
PROJECT CHANGES

HNF-SD-WM-DP-246, REV. 0A

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<h1>Sample Disposition Record</h1>	Control #: B97-051 Revision#: 0 Date Initiated: 7/8/96
------------------------------------	---

Section 1 - BACKGROUND

SAFH: B97-076
 OU: N/A
 Project ID: 105-N *Lift Station N22 N22-97*
 Task ID: 1
 Sampling Event: 105-N *Lift Station* Basin-Sediment Samples
 Laboratory: 222-S Laboratory
 Project Coordinator: Weiss, RL
 Task Manager: Duncan, Garth

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Section 2 - SAMPLE INFORMATION

Number of Samples: 1
 ID Numbers: B0L7D8
 MATRIX: Other Solid
 Collection Date: 06/26/97

Section 3 - ISSUE

Class: Lab Direction
 NCR Number: N/A
 Type: Clarification of Direction
 Description: Clarification of analysis to be performed

N/A

NCR Validation (Print/Sign)	Date
-----------------------------	------

Section 4 - DISPOSITION

Type: Use As Is
 Description: Lab is to perform the following:
 Viscosity Particle Size Sieve test

Letter report format provided by NIIC personnel is acceptable for reporting purposes.

Weiss, RL <i>[Signature]</i>	<i>7-8-97</i>
Project Coordinator (Print/Sign)	Date
Duncan, Garth	
Task Manager (Print/Sign)	Date
N/A	
QA (Print/Sign)	Date

Section 5 - INSPECTION (Issue Class: Nonconformance Only)

Inspection Number: N/A
 Inspection Results: N/A

N/A

Inspector (Print/Sign)	Date
------------------------	------

HNF-SD-WM-DP-246, REV. 0A

APPENDIX 2

TOXICITY CHARACTERISTIC LEACH RESULTS FROM 105-N
LIFT STATION SAMPLES

HNF-SD-WM-DP-246, REV. 0A

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NHC
Numatec
Hanford Corporation

An SGN/Cogema, Inc. Company

HNF-SD-WM-DP-246, REV. 0 A

**Internal
Memo**

From: Analytical Technology
Phone: 373-1972
373-1883
Date: June 17, 1997
Subject: TOXICITY CHARACTERISTIC LEACH RESULTS FROM 105-N LIFT STATION
SAMPLES

To: G. L. Miller T6-06

cc: W. I. Winters T6-07
J. Y. Bourges T6-07
C. M. Seidel T6-14
R. Akita T6-20
A. D. Rice T6-06
2 copies for file

Ref.: B. A. Crawford, "Process Support," Notebook No. WHC-N-442-4,
p. 111-113

One 105-N Lift Station sample has been analyzed after leaching according to LA-544-134 "Toxicity Characteristic Leach Procedure (TCLP) - Nonvolatile Samples". The results for this sample are provided in attachment 1 and are available on LabCore under sample numbers S97N000064 and S97N000066 (acid digest ICP results). The sample was received as a solid for TCLP extraction under LabCore identification S97N000058. Subsequent to leaching the sample identification number was changed to S97N000064 so that it could be tracked in LabCore as a liquid matrix. LabCore data entry templates are included at the end of the data provided in attachment 1. These templates report the sample dilution factors that were used to provide the results reported under the sample number S97N000064. The dilution factor used in the acid digestion of the leachate (S97N000066) is 1 in all cases.

The sample was fine sand with some larger gravel pieces that passed the <9.5 mm particle size criterion on inspection. Sample was weighed onto a suction filtration system. A 5.291 g. subsample of the waste was dried in an oven set at 105°C for four hours and 45 minutes. The pH of the solids were determined after adding 23.0 mL of Q-water to 1.190 g. of solids and stirring for 5 minutes. The pH was 6.04. Upon adding 833 µl of HCl to the slurry and heating to 50°C and cooling to 25°C (room temperature), the pH dropped to 2.74. This pH was less than 5.0, so extract #1 was selected for the leaching procedure. After drying was complete, the solids remaining from the first sample aliquot were 92.47 wt. % of the original sample.

The remaining sample from S97N000058 was divided into two subsamples: 20.230 g of sample was transferred to a pre-rinsed polyethylene extraction bottle labeled "S97N000064 sample" and 9.658 g of sample was transferred to an extraction bottle labeled "S97N000064 duplicate". The sample and duplicate were extracted for 19.5 hours in 388.194 g and 104.900 g of extract #1 respectively.

A-22

G. L. Miller
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June 17, 1997

A preparation blank was obtained by pouring approximately 40 mL of extract #1 in a vial labeled "Prep. Blank." A preparation standard was also prepared by adding 8.0 mL of a TCLP standard containing Ba, As, Cr, Pb, Ag, Cd and Se and 400 μ l of a standard containing Hg to 40 mL of extract #1. This extract was then acidified to pH 1.55 by addition of 8.0 mL of 1 N HNO₃ to the spiked extract.

A matrix spike was prepared by splitting the sample into two equal volume aliquots of 120.0 mL each. One sample was set aside. The second sample, labeled S97N000064 matrix spike, was spiked with 16.0 mL of the TCLP multielement standard and 200 μ l of the Hg standard. The pH of the matrix spike was 1.98. The pH of the duplicate sample was 1.95 after addition of 10 mL of 1 N HNO₃. The dilution factors used in LabCore calculations account for any acid added to the samples.

All elements with the exception of Pb are below regulatory limits in the sample. The Pb concentration in the undigested leachate is at 5.44 μ g/mL for both the sample and the duplicate (regulatory limit is 5.00 μ g/mL). The preliminary results for the acid digested leachate were 5.04 μ g/mL and 6.15 μ g/mL for the duplicate reflecting a higher result than observed in the undigested leachate. The spike recovery for Pb in the undigested leachate was 95% which also reflects the conservative result of 5.44 μ g/mL found in the undigested TCLP extract. Other ICP metal results were well below regulatory limits. The spike recovery for Hg in the TCLP matrix was notably below the 50% recovery criterion at 35%. However the reported concentration of Hg in the leachate was below detection limits at <0.005 μ g/mL. If the poor spike recovery is considered with the current detection limit for mercury the "corrected" mercury result is still below 10% of the regulatory limit concentration.

ICP results from the matrix spike sample indicate all other elements with the exception of Ag are near or slightly greater than 100%. The Ag spike recovery was 58.6%. As mentioned previously the spike recovery for Hg was below 50%. However, standard additions were not performed because the concentration of Hg found in the sample was well below the regulatory concern limit.

The process notes from the extraction of these samples are attached to this report (attachment 2) if additional information is needed. Further questions may also be addressed by Bev Crawford 373-1972 or Keith Fuller 373-1883.

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Attachment