





APPENDIX A

FIELD REPORTS (BORROW PIT NO. 2 AND SOUTH CELL)





**Western  
Technologies  
Inc.**

The Quality People  
Since 1955

400 South Lorena Avenue  
Farmington, New Mexico 87401  
(505) 327-4966 • fax 327-5293

**REPORT ON  
JOB SITE CONDITIONS**

CLIENT UNC Mining & Milling  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 97305

JOB NO: 3145JB031  
LAB/INVOICE NO: 31450122  
DATE OF REPORT: 5/22/95

Project 1995 Reclamation  
Location Church Rock New Mexico  
Contractor Nielson Inc. Report By H. Kuebler Date 5/10/95  
Subject Project Specifications Superintendent James Harris

**Observations and Action Taken:** Nielson Inc. completed compaction of existing ground in Borrow Pit #2. W.T. performed compaction testing and tests indicated existing ground had met project requirements. (90% of ASTM 698 no moisture requirements) Nielson Inc. began Radon Attenuation cover placement in Borrow Pit #2.

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
5.10/rgo:UNC031

The above services and report were performed pursuant to the terms and conditions of the contract, if any, between WT and client. WT warrants that this was performed under the appropriate standard of care, including the skill and judgement that is reasonably expected from similarly situated professionals. No other warranty, guaranty, or representation, either expressed or implied is included or intended.

REVIEWED BY Thomas H. Hsieh





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Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 97305

JOB NO: 3145JB031  
LAB/INVOICE NO: 31450122  
DATE OF REPORT: 5/22/95

Project 1995 Reclamation  
Location Church Rock New Mexico  
Contractor Nielson Inc. Report By H. Kuebler Date 5/12/95  
Subject Testing/Observations Superintendent James Harris

**Observations and Action Taken:** Nielson Inc. didn't work today. I performed compaction test on RAC cover in Borrow Pit #2 R.A.C material. Tests revealed inconsistent moisture throughout Borrow Pit #2. I discussed the situation with Ed Morales and we agreed to have Nielson Inc. re-scarify, add water, and recompact the failing areas (majority of Borrow Pit #2)

Comments: \_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
5.12/rgo:UNC031

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REVIEWED BY *Thomas Kuebler*











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**REPORT ON  
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CLIENT UNC Mining & Milling  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 97305

JOB NO: 3145JB031  
LAB/INVOICE NO: 31450122  
DATE OF REPORT: 5/31/95

Project 1995 Reclamation  
Location Church Rock New Mexico  
Contractor Nielson Inc. Report By H. Kuebler Date 5/22/95  
Subject Testing/Observations Superintendent James Harris

**Observations and Action Taken:** Nielson Inc. placed material in swale B & C. Sieve analysis on .35 aggregate indicated material doesn't meet specification. Hamilton Brothers will recrusher aggregate.

Comments: \_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
5.22/rgo:UNC031

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REVIEWED BY

*Thomas Pruebe*



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**REPORT ON  
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CLIENT **UNC Mining & Milling**  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 97305

JOB NO: 3145JB031  
LAB/INVOICE NO: 31450122  
DATE OF REPORT: 5/31/95

Project 1995 Reclamation  
Location Church Rock New Mexico  
Contractor Nielson Inc. Report By H. Kuebler Date 5/23/95  
Subject Testing/Observations Superintendent James Harris

**Observations and Action Taken:** Nielson Inc. continued to place fill in swale B & C which will later be shaped into swale slopes. Hamilton Bro submitted another .35 aggregate sieve sample. Sieve analysis indicated material didn't meet specification. Hamilton Brothers will waste the small stockpile and try again.

Comments: \_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
5.23/rgo:UNC031

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REVIEWED BY Thomas W. W. [Signature]







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**REPORT ON  
JOB SITE CONDITIONS**

CLIENT **UNC Mining & Milling**  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 97305

JOB NO: 3145JB031  
LAB/INVOICE NO: 31450122  
DATE OF REPORT: 06/05/95

Project 1995 Reclamation  
Location Church Rock New Mexico  
Contractor Nielson Inc. Report By H. Kuebler Date 5/30/95  
Subject Observations Superintendent James Harris

**Observations and Action Taken:** Nielson Inc. continued to excavate north end of Swale A. Excavated soils are being stockpile in south end of Borrow Pit #2 Stockpile Site.  
Discussion concerning construction stake elevation in Borrow Pit #2 revealed Nielson Inc. has misinterpreted elevation data written on the stakes. Stakes are marked for finish grade (Top of Radon Attenuation Cover) not for finish subgrade which is 1.5' elevation lower as Nielson Inc. had thought. Nielson Inc. shall correct the problem.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
5.30/rgo:UNC031

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REVIEWED BY Thomas Prake











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**REPORT ON  
JOB SITE CONDITIONS**

CLIENT **UNC Mining & Milling**  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 97305

JOB NO: 3145JB031  
LAB/INVOICE NO: 31450145  
DATE OF REPORT: 06/09/95

Project 1995 Reclamation  
Location Church Rock New Mexico  
Contractor Nielson Inc. Report By H. Kuebler Date 06/07/95  
Subject Observations Superintendent James Harris

Observations and Action Taken: Nielson Inc. continued to excavate contaminated soils from Swale I and placing soils in Borrow Pit #2.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
6-7/rgo:UNC031

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REVIEWED BY Thomas Wahe





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**REPORT ON  
JOB SITE CONDITIONS**

CLIENT UNC Mining & Milling  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 87305

JOB NO: 3145JB031  
LAB/INVOICE NO: 31450145  
DATE OF REPORT: 06/16/95

Project 1995 Reclamation  
Location Church Rock New Mexico  
Contractor Nielson Inc. Report By Ed Morales Date 06/15/95  
Subject Observations Superintendent James Harris

Observations and Action Taken: Nielson began to place Radon Attenuation cover in Borrow Pit #2. Western Technologies performed sandcones densities in Swale I. Density tests failed.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
6-15/rgo:UNC031

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REVIEWED BY *Thomas Pugh*











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**REPORT ON  
JOB SITE CONDITIONS**

CLIENT **UNC Mining & Milling**  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 87305

JOB NO: 3145JB031  
LAB/INVOICE NO: 31450145  
DATE OF REPORT: 06/27/95

Project 1995 Reclamation  
Location Church Rock New Mexico  
Contractor Nielson Inc. Report By H. Kuebler Date 06/23/95  
Subject Observations Superintendent James Harris

**Observations and Action Taken:** Nielson Inc. continued to place Radon Attenuation Cover in Swale B and C. Western Technologies worked on paperwork.

Comments: \_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
6-23/rgo:UNC031

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REVIEWED BY

*Thomas Kuebler*















































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**REPORT ON  
JOB SITE CONDITIONS**

CLIENT UNC Mining & Milling  
P.O. Box 3077  
Gallup, NM 87305  
Attn: Ed Morales

JOB NO: 3145JB031  
LAB/INVOICE NO: 31450243  
DATE OF REPORT: 08/07/95

Project 1995 Reclamation  
Location Church Rock, New Mexico  
Contractor Nielson Inc. Report By H. Kuebler Date 8/1/95  
Subject Testing and Observations Superintendent James Harris

**Observations and Action Taken:** Nielson Inc. placed D<sup>50</sup>-1.5 aggregate in Borrow Pit #2, reworked grid lined A to C in South Cell. Then placed .35 aggregate in Swale H & I. Western Technologies performed measurements in Swale H & I. W.T.I. also performed moisture contents between A & C lines.

Comments: \_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
81/MK:UNC.031

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REVIEWED BY *Thomas Kuebler*





























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**LABORATORY REPORT**

**REVIEW OF JOBSITE CONDITIONS**

Client	UNC Mining & Milling PO Box 3077 Gallup, NM 87305 Attn: Ed Morales	Job No:	<u>3145JB031</u>
		Lab/Invoice No:	<u>31450243</u>
		Date of Report:	<u>9-1-95</u>
Project	<u>1995 Reclamation</u>		
Location	<u>Church Rock, NM</u>		
Contractor	<u>Nielson's Inc.</u>	Report By	<u>H. Kuebler</u> Date <u>8-29-95</u>
Subject	<u>Testing and Observations</u>	Superintendent	<u>James Harris</u>

**Observations and Action Taken:** Site condition still muddy. Nielson's Inc. did not work today. Western Technologies performed laboratory tests (Sieves & PI). I discussed with Ed Morales how many scoring results on aggregate was needed per aggregate class. Mr. Morales stated three scores. I had stockpiled samples from earlier Sieve samples and I will submit to Farmington for scoring tests.

Comments: \_\_\_\_\_

Copies: Client (3), Billing (1), Field File (1).  
829\ha:UNC031

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REVIEWED BY:



























## APPENDIX B

### FIELD DENSITY TESTS, BACKFILL AND INTERIM COVER

**UNITED NUCLEAR CORPORATION 1995 RECLAMATION**

**WT JOB NO. 3145JB031**

**TEST SUMMARY FOR BORROW PIT #2 INTERIM**

**DATE OF REPORT 12/06/95**

DATE	TYPE OF TEST	GRID	NORTHING	EASTING	ELEV.	MATERIAL TYPE	DENSITY, PCF	MOISTURE, %	RELATIVE COMPACTION	USCS SOIL CLASS	WITHIN SPECS. ?
10/04/91	Sandcone		74060.7	60721.8	6954.5	**	98.2	13.5	89	CL	
10/04/91	Sandcone		74014.2	60752.6	6953.6	*	98.6	8.1	89	CL	
10/04/91	Sandcone		73924.0	60809.5	6956.7	*	105.4	12.7	95	CL	
10/04/91	Sandcone		73565.8	60764.0	6960.5	*	107.4	11.3	97	CL	
10/04/91	Sandcone		73643.5	60674.8	6959.7	*	104.2	15.6	94	CL	
10/04/91	Sandcone		73727.5	60571.4	6958.7	*	97.8	18.6	88	CL	
10/04/91	Sandcone		73537.3	60536.5	6965.7	*	103.1	17.3	93	CL	
10/04/91	Sandcone		73484.6	60600.0	6966.7	*	107.1	13.6	97	CL	
11/03/94	Sandcone	Borrow Pit #2	Section 9.20	185' W. of CL	6984.0	*	119.3	10.2	100	CL	
11/03/94	Sandcone	Borrow Pit #2	Section 9.20	70' W. of CL	6986.0	*	117.8	10.1	100	CL	
11/03/94	Sandcone	Borrow Pit #2	Section 9.00	120' E. of CL	6990.0	*	116.8	10.4	100	CL	
11/03/94	Sandcone	Borrow Pit #2	Section 2.00	60' E. of CL	6983.0	*	112.2	8.8	100	CL	

\* = Intermediate Fill  
 \*\* = Non-Tailings

cb/UNC.031/9

Dist: Client (3) Field File (1) Billing (1)



UNITED NUCLEAR CORPORATION 1995 RECLAMATION

WT JOB NO. 3145JB031

TEST SUMMARY FOR INTERN COVER

DATE OF REPORT 12/06/95

DATE	TYPE OF TEST	GRID	NORTHING	EASTING	ELEV.	MATERIAL TYPE	DENSITY, PCF	MOISTURE, %	RELATIVE COMPACTION	USCS SOIL CLASS	WITHIN SPECS. ?
05/10/95	Sandcone	V + 4	73610.0	60830.0	6988.4	I.C.	108.5	12.1	96	CL	Yes
05/10/95	Sandcone	V + 2	73780.0	60980.0	6988.1	I.C.	108.4	15.6	96	CL	Yes
05/10/95	Sandcone	S + 1	74040.0	60800.0	6981.0	I.C.	103.0	15.0	91	CL	Yes
05/10/95	Sandcone	U + 7	73380.0	60640.0	6984.3	I.C.	109.1	16.0	97	CL	Yes
05/10/95	Sandcone	U + 3	73750.0	60810.0	6984.1	I.C.	112.5	15.6	100	CL	Yes
05/10/95	Sandcone	T + 8	73450.0	60760.0	6983.5	I.C.	119.3	13.2	100	CL	Yes
05/10/95	Sandcone	S + 5	73730.0	60550.0	6980.5	I.C.	114.2	14.3	100	CL	Yes
05/10/95	Sandcone	U + 5	73630.0	60620.0	6983.0	I.C.	111.7	16.6	98	CL	Yes
05/10/95	Sandcone	S + 3.5	73840.0	60640.0	6980.5	I.C.	106.0	16.0	93	CL	Yes
05/10/95	Sandcone	V + 6	73460.0	60800.0	6986.7	I.C.	109.5	15.6	96	CL	Yes
05/10/95	Sandcone	W + 7	73310.0	60730.0	6989.4	I.C.	107.3	13.6	94	CL	Yes
05/12/95	Sandcone	T + 2	73880.0	60820.0	6983.8	I.C.	119.3	9.8	100	CL	Yes

I.C. = Intern Cover

cb/UNC.031/26

Dist: Client (3) Field File (1) Billing (1)

UNITED NUCLEAR CORPORATION 1995 RECLAMATION

WT JOB NO. 3145JB031

TEST SUMMARY FOR INTERN COVER

DATE OF REPORT 12/06/95

DATE	TYPE OF TEST	GRID	NORTHING	EASTING	ELEV.	MATERIAL TYPE	DENSITY, PCF	MOISTURE, %	RELATIVE COMPACTION	USCS SOIL CLASS	WITHIN SPECS. 7
05/12/95	Sandcone	T +3	73810.0	60740.0	6981.3	I.C.	117.7	11.4	100	CL	Yes
05/12/95	Sandcone	R +1	74100.0	60720.0	6980.5	I.C.	110.4	20.6	98	CL	Yes
05/12/95	Sandcone	W +5	73470.0	60850.0	6990.4	I.C.	116.5	13.2	100	CL	Yes
05/12/95	Sandcone	U +2	73830.0	60900.0	6985.1	I.C.	105.5	16.0	95	CL	Yes
05/12/95	Sandcone	T +6	73580.0	60560.0	6981.6	I.C.	109.4	11.0	99	CL	Yes
05/12/95	Sandcone	R +7	73630.0	60350.0	6981.5	I.C.	109.5	9.0	100	CL	Yes
05/12/95	Sandcone	S +7	73570.0	60420.0	6982.7	I.C.	112.1	11.0	100	CL	Yes

I.C. = Intern Cover

cb/UNC.031/28

Dist: Client (3) Field File (1) Billing (1)

**UNITED NUCLEAR CORPORATION 1995 RECLAMATION**

**WT JOB NO. 3145JB031**

**TEST SUMMARY FOR INTERN COVER**

**DATE OF REPORT 12/06/95**

DATE	TYPE OF TEST	GRID	NORTHING	EASTING	ELEV.	MATERIAL TYPE	DENSITY, PCF	MOISTURE, %	RELATIVE COMPACTION	USCS SOIL CLASS	WITHIN SPECS. ?
05/11/95	Sandcone	V + 3	73700.0	60910.0	6989.8	Intern RAC Cover	109.7	16.0	98	CL	Yes
05/11/95	Sandcone	W + 5	73470.0	60850.0	6991.4	Intern RAC Cover	117.1	15.5	100	CL	Yes
05/11/95	Sandcone	W + 6	73390.0	60790.0	6992.8	Intern RAC Cover	113.1	14.8	100	CL	Yes
05/11/95	Sandcone	W + 7	73300.0	60730.0	6990.4	Intern RAC Cover	116.0	14.7	100	CL	Yes
05/11/95	Sandcone	V + 4	73610.0	60830.0	6989.6	Intern RAC Cover	112.3	15.0	100	CL	Yes
05/11/95	Sandcone	W + 4	73540.0	60920.0	6992.2	Intern RAC Cover	107.1	14.8	97	CL	Yes



**WESTERN  
TECHNOLOGIES  
INC.**

400 South Lorena Avenue  
Farmington, New Mexico 87401  
(505) 327-4966 • fax 327-5293

**LABORATORY REPORT**

**SOIL/AGGREGATE FIELD DENSITY TESTS**

Client United Nuclear Corporation 30992  
P.O. Drawer QQ  
Gallup, NM 87301

Job No.  
Lab/Invoice No. 31410925  
Date 11/01/91  
Reviewed By *J. Phillips*

Project 1991 Reclamation Testing

Location Church Rock, New Mexico

Type of Material Sandy lean clay-fill <sup>Intermediate</sup> Authorized By E. Morales/Client Date 10/04/91

Source of Material Borrow Pit #2 Tested/Calc. By H. Kuebler/WT

Moisture/Density Relationship ASTM D698 Meth. A Test Locations Designated By H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	10/04/91	74060.7N & 60721.8E	6954.5
2	10/04/91	74014.2N & 60752.5E	6953.6
3	10/04/91	73924.0N & 60809.5E	6956.7
4	10/04/91	73565.8N & 60764.0E	6960.5
5	10/04/91	73643.5N & 60674.8E	6959.7
6	10/04/91	73727.5N & 60571.4E	6958.7
7	10/04/91	73537.3N & 60536.5E	6965.7
8	10/04/91	73484.6N & 60600.0E	6966.7

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. †	Comments *
				Moisture %	Dry Density pcf			
1		13.6	110.6	13.5	98.2	89	Yes	1-13-14-18
2		13.6	110.6	8.1	98.6	89	Yes	1-13-14-18
3		13.6	110.6	12.7	105.4	95	Yes	1-13-14-18
4		13.6	110.6	11.3	107.4	97	Yes	1-13-14-18
5		13.6	110.6	15.6	104.2	94	Yes	1-13-14-18
6		13.6	110.6	18.6	97.8	88	Yes	1-13-14-18
7		13.6	110.6	17.3	103.1	93	Yes	1-13-14-18
8		13.6	110.6	13.6	107.1	97	Yes	1-13-14-18

\* Comments

- 1 Subgrade 8 100% min req'd
- 2 Subbase Fill 9 98% min req'd
- 3 Base Course 10 95% min req'd
- 4 Backfill 11 90% min req'd
- 5 Pavement Area 12 85% min req'd
- 6 Below Footing Bottom 13 no
- 7 Above Footing Bottom specifications
- 14 Tested D-1556 ~~ASTM D-1556~~
- 15 Tested ASTM D-2922/D-3017
- 16 Tested ASTM D-2922/AASHTO T-217
- 17 Rock correction applied to maximum dry density AASHTO T-224
- 18 Other ASTM D2216

- 19. Test Locations on Accompanying Site Plan
- 20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

Note: 6990.0=Top of Regraded Tailings Surface

Copies to: Client (3) Field Copy (1) Billing (1) /sr

**SOIL/AGGREGATE FIELD DENSITY TEST**

WT : *UNC Mining and Milling*  
 Post Office Box 3077  
 Gallup, NM 87305

JOB NO. *3144JK050*  
 LAB/INV NO. *31440435*  
 REPORT DATE *11-11-94*  
 REVIEWED BY *R. Zubrod*  
 PAGE 1

PROJECT : *1994 Reclamation*  
 LOCATION : *McKinley County, NM*  
 AUTHORIZED BY : *Ed Morales*  
 TEST LOCATIONS DESIGNATED BY : *H. Kuebler/WT*

DATE : *11-03-94*

TEST NO.	IN-PLACE			MAXIMUM DENSITY (pcf)	REQUIRED		WITHIN SPECS?
	MOISTURE (%)	DRY DENSITY (pcf)	COMPACTION (%)		COMPACTION (%)	MOISTURE (%)	
1	10.2	119.3	100+	110.0	90	N/A	YES
2	10.1	117.8	100+	110.0	90	N/A	YES
3	10.4	116.8	100+	110.0	90	N/A	YES
4	8.8	112.2	100+	110.0	90	N/A	YES
5	10.5	119.4	100+	110.0	90	N/A	YES
6	10.0	113.4	100+	110.0	90	N/A	YES

TEST NO.	TEST DATE	TEST LOCATION	ELEVATION DATUM +
1	11/03	<i>Borrow Pit #2, Section 9.20, 185' W. of Centerline</i>	6984.0
2	11/03	<i>Borrow Pit #2, Section 9.20, 70' W. of Centerline</i>	6986.0
3	11/03	<i>Borrow Pit #2, Section 9.00, 120' E. of Centerline</i>	6990.0
4	11/03	<i>Borrow Pit #2, Section 2.00, 60' E. of Centerline</i>	6983.0
5	11/03	<i>Borrow Pit #2, Section 2.00, 100' W. of Centerline</i>	6981.0
6	11/03	<i>Borrow Pit #2, Section 6.00, 150' W. of Centerline</i>	6981.0

+ DATUM: *Test Elevation = Bottom of Intern Cover*

TEST NO.	COMMENTS	FIELD DENSITY TEST METHOD
1	<i>Subgrade</i>	<i>ASTM D-1556/AASHTO T-217</i>
2	<i>Subgrade</i>	<i>ASTM D-1556/AASHTO T-217</i>
3	<i>Subgrade</i>	<i>ASTM D-1556/AASHTO T-217</i>
4	<i>Subgrade</i>	<i>ASTM D-1556/AASHTO T-217</i>
5	<i>Subgrade</i>	<i>ASTM D-1556/AASHTO T-217</i>
6	<i>Subgrade</i>	<i>ASTM D-1556/AASHTO T-217</i>

MOISTURE/DENSITY RELATIONSHIP		OPTIMUM MOISTURE (%)	MAXIMUM DRY DENSITY (pcf)	TESTED PER ASTM
MATERIAL DESCRIPTION	SOURCE			
<i>Silty Clay</i>	<i>Borrow Pit #2 Stockpile</i>	16.6	110.0	<i>D698-A</i>

Copies to: Addressee - (3)  
 Field File & Billing (2)



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**SOIL / AGGREGATE  
FIELD UNIT WEIGHT TESTS  
(FIELD DENSITY)**

Client **UNC MINING AND MILLING**  
POST OFFICE BOX 3077  
GALLUP, NM 87305

Date of Report **06-22-95**  
Job No. **3145JB031** Page 1 of 2  
Event/Invoice No. **31450122**  
Authorized By **E. MORALES** Date **05-10-95**  
Tested By **H. KUEBLER/WT** Date **05-10-95**

Client **UNC MINING AND MILLING**  
Project **1995 RECLAMATION**  
Location **CHURCH ROCK, NM**  
Test Locations Designated By **H. KUEBLER/WT**

Test Procedures In-Place Unit Weight : **ASTM D1556** Moisture Content : **ASTM D4944**  
Calibrated Volume of Sand Cone Apparatus **0.0387** cu. ft. Bulk Unit Weight of Sand **94.6** lbf/cu. ft.

TEST NO.	IN-PLACE CHARACTERISTICS				LAB CHARACTERISTICS			COMPACTION	REQUIREMENTS		
	Hole Volume cu. ft.	Moisture % of Dry Unit Weight	Dry Unit Weight lbf / cu. ft.	Oversize %	ID	Maximum Dry Unit Weight lbf / cu. ft.	Optimum Moisture %	% of Maximum Dry Unit Weight	Moisture %	Compaction %	CONFORMANCE INDICATED
1	0.0328	12.1	108.6	0.0	11	112.8	14.6	96		90	YES
2	0.0347	15.6	108.5	0.0	11	112.8	14.6	96		90	YES
3	0.0383	15.0	103.1	0.0	11	112.8	14.6	91		90	YES
4	0.0379	16.0	109.1	0.0	11	112.8	14.6	97		90	YES
5	0.0360	15.6	112.3	0.0	11	112.8	14.6	100		90	YES
6	0.0369	13.2	119.4	0.0	13	113.9	12.7	100+		90	YES
7	0.0354	14.3	114.2	0.0	13	113.9	12.7	100		90	YES
8	0.0330	16.6	111.8	0.0	13	113.9	12.7	98		90	YES
9	0.0374	16.0	106.0	0.0	13	113.9	12.7	93		90	YES
10	0.0362	15.6	110.3	0.0	13	113.9	12.7	97		90	YES

TEST NO.	TEST LOCATION, HORIZONTAL	TEST LOCATION, VERTICAL	MATERIAL TESTED
1	73610 N & 60830 E, GRID POINT V+4, BORROW PIT #2	6988.4	SUBGRADE
2	73780 N & 60980 E, GRID POINT V+2, BORROW PIT #2	6988.1	SUBGRADE
3	74040 N & 60800 E, GRID POINT S+1, BORROW PIT #2	6981.3	SUBGRADE
4	73380 N & 60640 E, GRID POINT U+7, BORROW PIT #2	6984.3	SUBGRADE
5	73750 N & 60810 E, GRID POINT U+3, BORROW PIT #2	6984.1	SUBGRADE
6	73450 N & 60760 E, GRID POINT T+8, BORROW PIT #2	6983.5	SUBGRADE
7	73730 N & 60550 E, GRID POINT S+5, BORROW PIT #2	6980.5	SUBGRADE
8	73630 N & 60620 E, GRID POINT U+5, BORROW PIT #2	6983.0	SUBGRADE
9	738 N & 60640 E, GRID POINT S+3.5, BORROW PIT #2	6980.5	SUBGRADE
10	73460 N & 60800 E, GRID POINT V+6, BORROW PIT #2	6986.7	SUBGRADE

LABORATORY DATA & COMPACTION CHARACTERISTICS						
LAB ID.	EVENT/ INVOICE NO.	DESCRIPTION OF MATERIAL	SOURCE OF MATERIAL	OPTIMUM MOISTURE, %	MAXIMUM DRY UNIT WEIGHT, lbf / cu. ft.	TEST METHOD
11	31450122	SILTY CLAY (INSITU)	NTL GRND., BORROW PIT #2	14.6	112.8	D698-A
13	31450122	SILTY CLAY (INSITU)	SUBGRADE	12.7	113.9	D698-A

Comments: DATUM Elevation of Test = Top of Native Subgrade

Distribution : CLIENT - (3)  
FIELD FILE & BILLING (2)

TESTS REPORTED HEREIN ARE INDICATIVE OF CONDITIONS FOUND AT THE EXACT LOCATION AND TIME OF TESTING ONLY. THE ABOVE SERVICES AND REPORT WERE PERFORMED PURSUANT TO THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN WT AND CLIENT. WT WARRANTS THAT THIS WAS PERFORMED UNDER THE APPROPRIATE STANDARD OF CARE, INCLUDING THE SKILL AND JUDGMENT THAT IS REASONABLY EXPECTED FROM SIMILARLY SITUATED PROFESSIONALS. NO OTHER WARRANTY, GUARANTY, OR REPRESENTATION, EXPRESS OR IMPLIED, IS INCLUDED OR INTENDED.

REVIEWED BY T. Krake  
(SIGNED COPY ON FILE)



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**SOIL / AGGREGATE  
FIELD UNIT WEIGHT TESTS  
CONTINUATION SHEET**

Client **UNC MINING AND MILLING**  
**POST OFFICE BOX 3077**  
**GALLUP, NM 87305**

Date of Report **06-22-95**  
Job No. **3145JB031** Page 2 of 2  
Event/Invoice No. **31450122**  
Authorized By **E. MORALES** Date **05-10-95**  
Tested By **H. KUEBLER/WT** Date **05-10-95**

Client **UNC MINING AND MILLING**  
Project **1995 RECLAMATION**  
Location **CHURCH ROCK, NM**

TEST NO.	IN-PLACE CHARACTERISTICS				LAB CHARACTERISTICS			COMPACTION	REQUIREMENTS		
	Hole Volume cu. ft.	Moisture % of Dry Unit Weight	Dry Unit Weight lbf / cu. ft.	Oversize %	ID	Maximum Dry Unit Weight lbf / cu. ft.	Optimum Moisture %	% of Maximum Dry Unit Weight	Moisture %	Compaction %	CONFORMANCE INDICATED
11	0.0406	13.6	107.3	0.0	13	113.9	12.7	94		90	YES

TEST NO.	TEST LOCATION, HORIZONTAL	TEST LOCATION, VERTICAL	MATERIAL TESTED
11	73310 N & 60730 E, GRID POINT W + 7, BORROW PIT #2	6989.4	SUBGRADE

Comments: **DATUM Elevation of Test = Top of Native Subgrade**

Distribution : **CLIENT - (3)**  
**FIELD FILE & BILLING (2)**

TESTS REPORTED HEREIN ARE INDICATIVE OF CONDITIONS FOUND AT THE EXACT LOCATION AND TIME OF TESTING ONLY. THE ABOVE SERVICES AND REPORT WERE PERFORMED PURSUANT TO THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN WT AND CLIENT. WT WARRANTS THAT THIS WAS PERFORMED UNDER THE APPROPRIATE STANDARD OF CARE, INCLUDING THE SKILL AND JUDGMENT THAT IS REASONABLY EXPECTED FROM SIMILARLY SITUATED PROFESSIONALS. NO OTHER WARRANTY, GUARANTY, OR REPRESENTATION, EXPRESS OR IMPLIED, IS INCLUDED OR INTENDED.

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**SOIL / AGGREGATE  
FIELD UNIT WEIGHT TESTS  
(FIELD DENSITY)**

Client **UNC MINING AND MILLING**  
**POST OFFICE BOX 3077**  
**GALLUP, NM 87305**

Date of Report **06-22-95**  
Job No. **3145JB031** Page 1 of 1  
Event/Invoice No. **31450122-1**  
Authorized By **E. MORALES** Date **05-11-95**  
Tested By **H. KUEBLER/WT** Date **05-11-95**

Client **UNC MINING AND MILLING**  
Project **1995 RECLAMATION**  
Location **CHURCH ROCK, NM**

Test Locations Designated By **H. KUEBLER/WT**

Test Procedures In-Place Unit Weight : **ASTM D1556** Moisture Content : **ASTM D4944**

Calibrated Volume of Sand Cone Apparatus **0.0387** cu. ft. Bulk Unit Weight of Sand **94.6** lbf/cu. ft.

TEST NO.	IN-PLACE CHARACTERISTICS				LAB CHARACTERISTICS			COMPACTION	REQUIREMENTS		
	Hole Volume cu. ft.	Moisture % of Dry Unit Weight	Dry Unit Weight lbf / cu. ft.	Oversize %	ID	Maximum Dry Unit Weight lbf / cu. ft.	Optimum Moisture %	% of Maximum Dry Unit Weight	Moisture %	Compaction %	CONFORMANCE INDICATED
1	0.0385	16.0	109.7	0.0	10	112.5	15.4	98	15.4 TO 17.4	95	YES
2	0.0338	15.5	117.0	0.0	10	112.5	15.4	100+	15.4 TO 17.4	95	YES
3	0.0336	14.8	113.0	0.0	14	110.7	14.7	100+	14.7 TO 16.7	95	YES
4	0.0336	14.7	116.0	0.0	14	110.7	14.7	100+	14.7 TO 16.7	95	YES
5	0.0349	15.0	112.4	0.0	14	110.7	14.7	100+	14.7 TO 16.7	95	YES
6	0.0336	14.8	107.1	0.0	14	110.7	14.7	97	14.7 TO 16.7	95	YES

TEST NO.	TEST LOCATION, HORIZONTAL	TEST LOCATION, VERTICAL	MATERIAL TESTED
1	73700 N & 60910 E, GRID POINT V+3	6989.8	SUBGRADE
2	73470 N & 60850 E, GRID POINT W+5	6991.4	SUBGRADE
3	73390 N & 60790 E, GRID POINT W+6	6992.8	SUBGRADE
4	73300 N & 60730 E, GRID POINT W+7	6990.4	SUBGRADE
5	73610 N & 60830 E, GRID POINT V+4	6989.6	SUBGRADE
6	73540 N & 60920 E, GRID POINT W+4	6992.2	SUBGRADE

LABORATORY DATA & COMPACTION CHARACTERISTICS						
LAB ID.	EVENT/ INVOICE NO.	DESCRIPTION OF MATERIAL	SOURCE OF MATERIAL	OPTIMUM MOISTURE, %	MAXIMUM DRY UNIT WEIGHT, lbf / cu. ft.	TEST METHOD
10	31450122	SILTY CLAY-RAC	BORROW PIT #2, STOCKPILE	15.4	112.5	D698-A
14	31450122	SILTY CLAY-RAC	BORROW PIT #2	14.7	110.7	D698-A

Comments: DATUM Elevation of Test = 8" Below Top of Radon Attenuation Cover

Distribution : CLIENT - (3)  
FIELD FILE & BILLING (2)

TESTS REPORTED HEREIN ARE INDICATIVE OF CONDITIONS FOUND AT THE EXACT LOCATION AND TIME OF TESTING ONLY. THE ABOVE SERVICES AND REPORT WERE PERFORMED PURSUANT TO THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN WT AND CLIENT. WT WARRANTS THAT THIS WAS PERFORMED UNDER THE APPROPRIATE STANDARD OF CARE, INCLUDING THE SKILL AND JUDGMENT THAT IS REASONABLY EXPECTED FROM SIMILARLY SITUATED PROFESSIONALS. NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION, EXPRESS OR IMPLIED, IS INCLUDED OR INTENDED.

REVIEWED BY

T. Krake



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**SOIL / AGGREGATE  
FIELD UNIT WEIGHT TESTS  
(FIELD DENSITY)**

Client **UNC MINING AND MILLING**  
**POST OFFICE BOX 3077**  
**GALLUP, NM 87305**

Date of Report **06-26-95**  
Job No. **3145JB031** Page 1 of 1  
Event/Invoice No. **31450122-2**  
Authorized By **E. MORALES** Date **05-12-95**  
Tested By **H. KUEBLER/WT** Date **05-12-95**

Client **UNC MINING AND MILLING**  
Project **1995 RECLAMATION**  
Location **CHURCH ROCK, NM**  
Test Locations Designated By **H. KUEBLER/WT**

Test Procedures In-Place Unit Weight : **ASTM D1556** Moisture Content : **ASTM D4944**  
Calibrated Volume of Sand Cone Apparatus **0.0387** cu. ft. Bulk Unit Weight of Sand **94.6** lbf/cu. ft.

TEST NO.	IN-PLACE CHARACTERISTICS				LAB CHARACTERISTICS			COMPACTION	REQUIREMENTS		
	Hole Volume cu. ft.	Moisture % of Dry Unit Weight	Dry Unit Weight lbf / cu. ft.	Oversize %	ID	Maximum Dry Unit Weight lbf / cu. ft.	Optimum Moisture %	% of Maximum Dry Unit Weight	Moisture %	Compaction %	CONFORMANCE INDICATED
1	0.0342	9.8	119.2	0.0	10	112.5	15.4	100+		90	YES
2	0.0366	11.4	117.7	0.0	10	112.5	15.4	100+		90	YES
3	0.0313	20.6	110.4	0.0	10	112.5	15.4	98		90	YES
4	0.0350	13.2	116.6	0.0	10	112.5	15.4	100+		90	YES
5	0.0401	16.0	105.6	0.0	14	110.7	14.7	95		90	YES
6	0.0424	11.0	109.4	0.0	14	110.7	14.7	99		90	YES
7	0.0320	9.0	109.5	0.0	14	110.7	14.7	99		90	YES
8	0.0306	11.0	148.5	0.0	10	112.5	15.4	100+		90	YES

TEST NO.	TEST LOCATION, HORIZONTAL	TEST LOCATION, VERTICAL	MATERIAL TESTED
1	73880 N & 60820 E, GRID POINT T + 2	6983.8	SUBGRADE
2	73810 N & 60740 E, GRID POINT T + 3	6981.3	SUBGRADE
3	74100 N & 60720 E, GRID POINT R + 1	6980.5	SUBGRADE
4	73470 N & 60850 E, GRID POINT W + 5	6990.4	SUBGRADE
5	73830 N & 60900 E, GRID POINT U + 2	6985.1	SUBGRADE
6	73580 N & 60560 E, GRID POINT T + 6	6981.6	SUBGRADE
7	73630 N & 60350 E, GRID POINT R + 7	6981.5	SUBGRADE
8	73570 N & 60420 E, GRID POINT S + 7	6982.7	SUBGRADE

LABORATORY DATA & COMPACTION CHARACTERISTICS						
LAB ID.	EVENT/ INVOICE NO.	DESCRIPTION OF MATERIAL	SOURCE OF MATERIAL	OPTIMUM MOISTURE, %	MAXIMUM DRY UNIT WEIGHT, lbf / cu. ft.	TEST METHOD
10	31450122	SILTY CLAY-RAC	BORROW PIT #2, STOCKPILE	15.4	112.5	D698-A
14	31450122	SILTY CLAY-RAC	BORROW PIT #2	14.7	110.7	D698-A

Comments: DATUM Elevation of Test = Top of Native Subgrade

Distribution : CLIENT - (3)  
FIELD FILE & BILLING (2)

TESTS REPORTED HEREIN ARE INDICATIVE OF CONDITIONS FOUND AT THE EXACT LOCATION AND TIME OF TESTING ONLY. THE ABOVE SERVICES AND REPORT WERE PERFORMED PURSUANT TO THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN WT AND CLIENT. WT WARRANTS THAT THIS WAS PERFORMED UNDER THE APPROPRIATE STANDARD OF CARE, INCLUDING THE SKILL AND JUDGMENT THAT IS REASONABLY EXPECTED FROM SIMILARLY SITUATED PROFESSIONALS. NO OTHER WARRANTY, GUARANTY, OR REPRESENTATION, EXPRESS OR IMPLIED, IS INCLUDED, OR INTENDED.

REVIEWED BY

**T. Krake** *TK*

**UNITED NUCLEAR CORPORATION 1995 RECLAMATION**

**WT JOB NO. 3145JB031**

**TEST SUMMARY FOR INTERN MATERIAL**

**DATE OF REPORT 12/07/95**

DATE	SAMPLE LOCATION	% PASS 3/4" SPEC. 95-100%	% PASS #4 SPEC. 90-100%	% PASS #10 SPEC. 85-100%	% PASS #40 SPEC. 65-100%	% PASS 100 SPEC. 50-100%	% PASS 200 SPEC. 40-85%	PLASTICITY INDEX	USCS SOIL CLASS	WITHIN SPECS. ?
09/24/91	Old Church Rock Site	100	100	100	98	69	54.0	11	CL	N/A
09/24/91	Mill Site	100	97	95	63	16	11.0	NP	SP	N/A
05/23/95	73540N & 60920E	100	99	96	91	77	55.8	7	CL	N/A
05/23/95	73390N & 60790E	100	100	95	93	80	55.0	9	CL	N/A
05/23/95	73470N & 60730E	100	100	96	94	77	54.5	9	CL	N/A
05/23/95	73610N & 60830E	100	100	95	92	79	54.3	7	CL	N/A
05/23/95	73300N & 60730E	100	97	94	91	78	56.7	7	CL	N/A
05/23/95	73700N & 60910E	100	99	97	94	79	58.3	8	CL	N/A



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**LABORATORY  
REPORT**

Client: United Nuclear Corporation  
Post Office Drawer QQ  
Gallup, New Mexico 87301

Job No. 3141K062

Invoice No. 31410925

Date of Report 10/02/91

Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing  
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/24/91  
Material: Poorly Graded Sand w/Silt Submitted by H. Kuebler/WT Date 09/24/91  
Description: Fill in Borrow Pit #2 Authorized by E. Morales/UNC Date 09/24/91  
Source of Material: Mill Site Fill

SIEVE ANALYSIS, ASTM C136 & C117

<u>Sieve Size</u>	<u>%Passing Accumulative</u>
<u>1"</u>	<u>100</u>
<u>3/4"</u>	<u>100</u>
<u>3/8"</u>	<u>98</u>
<u>No. 4</u>	<u>97</u>
<u>No. 10</u>	<u>95</u>
<u>No. 40</u>	<u>63</u>
<u>No. 100</u>	<u>16</u>
<u>No. 200</u>	<u>11</u>

Plasticity Index, ASTM D4318

Liquid Limit N/V

Plasticity Index N/P

Soils Classification ASTM D2487

Group Symbol SP-SM

Group Name Poorly graded sand  
with silt

Copies: Client (3)  
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**LABORATORY  
REPORT**

Client: United Nuclear Corporation  
Post Office Drawer QQ  
Gallup, New Mexico 87301

Job No. 3141K062

Invoice No. 31410925

Date of Report 10/02/91

Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing

Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/24/91

Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/24/91

Description: Fill in Borrow Pit #2 Authorized by E. Morales/UNC Date 09/24/91

Source of Material: Old Church Rock Site Fill

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1"	100
3/4"	100
3/8"	100
No. 4	100
No. 10	100
No. 40	98
No. 100	69
No. 200	54

Plasticity Index, ASTM D4318

Liquid Limit 28

Plasticity Index 11

Soils Classification ASTM D2487

Group Symbol CL

Group Name Sandy lean clay

Copies: Client (3)  
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**LABORATORY REPORT**

**PHYSICAL PROPERTIES OF AGGREGATES**

Client: UNC Mining & Milling  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 87305

Job No. 3145JB031  
Lab/Inv. No. 31450122  
Report Date: 06/20/95

Project: 1995 Reclamation

Location: Church Rock, New Mexico

Material: Sandy Silty Clay	Sampled By: H. Kuebler	Date: 05/23/95
Source: Intern Cover (W+4), 73540 N - 60920 E	Submitted By: H. Kuebler	Date: 05/23/95
Elevation - 6992.2	Authorized By: Client	Date: 05/23/95

**SIEVE ANALYSIS, ASTM C136 & C117**

Sieve Size	% Passing Accumulative	Specification (As Required)
2"		
1-1/2"		
1-1/8"		
1"		
3/4"	100	95-100
1/2"	---	
3/8"	100	
1/4"	---	
No. 4	99	90-100
8	97	
10	96	85-100
16	94	
30	92	
40	91	65-100
50	89	
100	77	50-100
200	55.8	40-85

**Moisture Density Relations, pcf (ASTM D4318)**

Maximum Dry Density, pcf	N/A
Optimum Moisture, %	N/A

**Plasticity Index, ASTM D4318**

Liquid Limit	23
Plasticity Index	7
(Specs 4 - 12)	

Copies: Client (3), Billing (1), Field File (1)  
3.5/dn:UNC031

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REVIEWED BY Thomas Kuebler



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**LABORATORY REPORT**

PHYSICAL PROPERTIES OF AGGREGATES

Client: UNC Mining & Milling  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 87305

Job No. 3145JB031  
Lab/Inv. No. 31450122  
Report Date: 06/20/95

Project: 1995 Reclamation

Location: Church Rock, New Mexico

Material: Sandy Silty Clay      Sampled By: H. Kuebler      Date: 05/23/95

Source: Intern Cover (W+6), 73390 N - 60790 E      Submitted By: H. Kuebler      Date: 05/23/95

Elevation - 6992.8      Authorized By: Client      Date: 05/23/95

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	% Passing Accumulative	Specification (As Required)
2"		
1-1/2"		
1-1/8"		
1"		
3/4"	100	95-100
1/2"	---	
3/8"	---	
1/4"	---	
No. 4	100	90-100
8	96	
10	95	85-100
16	94	
30	93	
40	93	65-100
50	92	
100	80	50-100
200	55	40-85

Moisture Density Relations, pcf (ASTM D4318)

Maximum Dry Density, pcf N/A

Optimum Moisture, % N/A

Plasticity Index, ASTM D4318

Liquid Limit 25

Plasticity Index 9

(Specs 4 - 12)

Copies: Client (3), Billing (1), Field File (1)  
3.7/dn:UNC031

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REVIEWED BY Thomas Krabe



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**LABORATORY REPORT**

**PHYSICAL PROPERTIES OF AGGREGATES**

Client: UNC Mining & Milling  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 87305

Job No. 3145JB031  
Lab/Inv. No. 31450122  
Report Date: 06/20/95

Project: 1995 Reclamation

Location: Church Rock, New Mexico

Material: <u>Sandy Silty Clay</u>	Sampled By: <u>H. Kuebler</u>	Date: <u>05/23/95</u>
Source: <u>Intern Cover (W+7), 73300 N - 60730 E</u>	Submitted By: <u>H. Kuebler</u>	Date: <u>05/23/95</u>
<u>Elevation - 6990.4</u>	Authorized By: <u>Client</u>	Date: <u>05/23/95</u>

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	% Passing Accumulative	Specification (As Required)
2"		
1-1/2"		
1-1/8"		
1"		
3/4"	100	95-100
1/2"	---	
3/8"	---	
1/4"	---	
No. 4	100	90-100
8	97	
10	96	85-100
16	96	
30	95	
40	94	65-100
50	93	
100	77	50-100
200	54.5	40-85

Moisture Density Relations, pcf (ASTM D4318)

Maximum Dry Density, pcf N/A  
Optimum Moisture, % N/A

Plasticity Index, ASTM D4318

Liquid Limit 28  
Plasticity Index 9  
(Specs 4 - 12)

Copies: Client (3), Billing (1), Field File (1)  
3.9/dn:UNC031

The above services and report were performed pursuant to the terms and conditions of the agreement or proposal, if any, between WT and client. WT warrants that this was performed under the appropriate standard of care, including the skill and judgement that is reasonably expected from similarly situated professionals. No other warranty, guaranty, or representation, either expressed or implied is included or intended.

REVIEWED BY *Thomas H. Hinkle*



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**LABORATORY REPORT**

PHYSICAL PROPERTIES OF AGGREGATES

Client: UNC Mining & Milling  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 87305

Job No. 3145JB031  
Lab/Inv. No. 31450122  
Report Date: 06/20/95

Project: 1995 Reclamation

Location: Church Rock, New Mexico

Material:	<u>Sandy Silty Clay</u>	Sampled By:	<u>H. Kuebler</u>	Date	<u>05/23/95</u>
Source:	<u>Intern Cover (V+4), 73610 N - 60830 E</u>	Submitted By:	<u>H. Kuebler</u>	Date	<u>05/23/95</u>
	<u>Elevation - 6989.6</u>	Authorized By:	<u>Client</u>	Date	<u>05/23/95</u>

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	% Passing Accumulative	Specification (As Required)
2"		
1-1/2"		
1-1/8"		
1"		
3/4"	100	95-100
1/2"	---	
3/8"	---	
1/4"	---	
No. 4	100	90-100
8	95	
10	95	85-100
16	93	
30	92	
40	92	65-100
50	91	
100	79	50-100
200	54.3	40-85

Moisture Density Relations, pcf (ASTM D4318)

Maximum Dry Density, pcf	<u>N/A</u>
Optimum Moisture, %	<u>N/A</u>

Plasticity Index, ASTM D4318

Liquid Limit	<u>23</u>
Plasticity Index	<u>7</u>

(Specs 4 - 12)

Copies: Client (3), Billing (1), Field File (1)  
73.6/dn:UNC031

The above services and report were performed pursuant to the terms and conditions of the agreement or proposal, if any, between WTI and client. WTI warrants that this was performed under the appropriate standard of care, including the skill and judgement that is reasonably expected from similarly situated professionals. No other warranty, guaranty, or representation either expressed or implied is included or intended.

REVIEWED BY: Thomas Morales



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**LABORATORY REPORT**

**PHYSICAL PROPERTIES OF AGGREGATES**

Client: UNC Mining & Milling  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 87305

Job No. 3145JB031  
Lab/Inv. No. 31450122  
Report Date: 06/20/95

Project: 1995 Reclamation

Location: Church Rock, New Mexico

Material: Sandy Silty Clay      Sampled By: H. Kuebler      Date: 05/23/95

Source: Intern Cover (W+7), 73300 N - 60730 E      Submitted By: H. Kuebler      Date: 05/23/95

Elevation - 6990.4      Authorized By: Client      Date: 05/23/95

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	% Passing Accumulative	Specification (As Required)
2"		
1-1/2"		
1-1/8"		
1"		
3/4"	100	95-100
1/2"	100	
3/8"	97	
1/4"	---	
No. 4	97	90-100
8	95	
10	94	85-100
16	93	
30	91	
40	91	65-100
50	89	
100	78	50-100
200	56.7	40-85

Moisture Density Relations, pcf (ASTM D4318)

Maximum Dry Density, pcf N/A  
Optimum Moisture, % N/A

Plasticity Index, ASTM D4318

Liquid Limit 27  
Plasticity Index 7  
(Specs 4 - 12)

Copies: Client (3), Billing (1), Field File (1)  
3.8/dn:UNC031

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REVIEWED BY: *Thomas Morales*



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**LABORATORY REPORT**

**PHYSICAL PROPERTIES OF AGGREGATES**

Client: UNC Mining & Milling  
Attn: Mr. Ed Morales  
PO Box 3077  
Gallup, NM 87305

Job No. 3145JB031  
Lab/Inv. No. 31450122  
Report Date: 06/20/95

Project: 1995 Reclamation

Location: Church Rock, New Mexico

Material: Sandy Silty Clay      Sampled By: H. Kuebler      Date: 05/23/95

Source: Intern Cover (V+3), 73700 N - 60910 E      Submitted By: H. Kuebler      Date: 05/23/95

Authorized By: Client      Date: 05/23/95

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	% Passing Accumulative	Specification (As Required)
2"		
1-1/2"		
1-1/8"		
1"		
3/4"	100	95-100
1/2"	---	
3/8"	100	
1/4"	---	
No. 4	99	90-100
8	98	
10	97	85-100
16	96	
30	95	
40	94	65-100
50	93	
100	79	50-100
200	58.3	40-85

Moisture Density Relations, pcf (ASTM D4318)

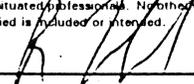
Maximum Dry Density, pcf	N/A
Optimum Moisture, %	N/A

Plasticity Index, ASTM D4318

Liquid Limit	23
Plasticity Index	8
(Specs 4 - 12)	

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3.4/dn:UNC031

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REVIEWED BY: 

UNITED NUCLEAR CORPORATION 1995 RECLAMATION

WT JOB NO. 3145JB031

TEST SUMMARY FOR BORROW PIT #2 INTERIM

DATE OF REPORT 12/06/95

DATE	TYPE OF TEST	GRID	NORTHING	EASTING	ELEV.	MATERIAL TYPE	DENSITY, PCF	MOISTURE, %	RELATIVE COMPACTION	USCS SOIL CLASS	WITHIN SPECS. ?
10/04/91	Proctor		74070.0	60800.0	6954.5	*	110.6	13.6			
11/03/94	Proctor	Borrow Pit #2	Stockpile			*	110.0	16.6			
05/10/95	Proctor	V+4	73610.0	60830.0	6988.4	*	112.8	14.6			
05/10/95	Proctor	W+7	73310.0	60730.0	6989.4	*	113.9	12.7			
05/10/95	Proctor	Borrow Pit #2	Stockpile			*	112.5	15.4			
05/11/95	Proctor	Borrow Pit #2	Stockpile			*	110.7	14.7			

\* = Intermediate Fill



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**LABORATORY  
REPORT**

Client: United Nuclear Corporation  
Post Office Drawer QQ  
Gallup, New Mexico 87301

Job No. 3141K062  
Invoice No. 31410925  
Date of Report 11/01/91  
Reviewed by J. Phillips

Project: 1991 Reclamation Testing  
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 10/04/91  
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 10/04/91  
Description: Borrow Pit #2 Authorized by E. Morales/UNC Date 10/04/91  
Source of Material: 7407ON & 60800E Elevation 6954.5

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 110.6  
Optimum Moisture Content, % 13.6

Soils Classification ASTM D2487

Group Symbol CL  
Group Name Sandy lean clay

Copies: Client (3)  
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Billing (1)  
/sr



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**LABORATORY REPORT**

PHYSICAL PROPERTIES OF SOILS

Client: United Nuclear Corporation  
Post Office Box 3077  
Gallup, New Mexico 87305  
ATTN: Mr. Ed Morales

Job No. 3144JK050  
Lab/Inv. No. 31440435  
Report Date: 11/03/94

Project: 1994 Reclamation

Location: Church Rock, NM

Material: Sandy Clay      Sampled By: H. Kuebler/WT      Date: 11/03/94

Source: Borrow Pit #2, Stockpile      Submitted By: H. Kuebler/WT      Date: 11/03/94

Authorized By: Client      Date: 11/03/94

Moisture Density Relations, pcf (ASTM D698 Method A)

Maximum Dry Density, pcf	<u>110.0</u>
Optimum Moisture, %	<u>16.6</u>

Copies to: Addressee (3), Billing (1), Field File (1)  
435.1/bc

The above services and report were performed pursuant to the terms and conditions of the agreement or proposal, if any, between WT and client. WT warrants that this was performed under the appropriate standard of care, including the skill and judgement that is reasonably expected from similarly situated professionals. No other warranty, guaranty, or representation, either expressed or implied, is included or intended.

REVIEWED BY

**SOIL / AGGREGATE - MOISTURE DENSITY RELATIONS**

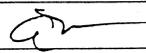
Job No. 3145JB031

Lab / Invoice No. 31450122

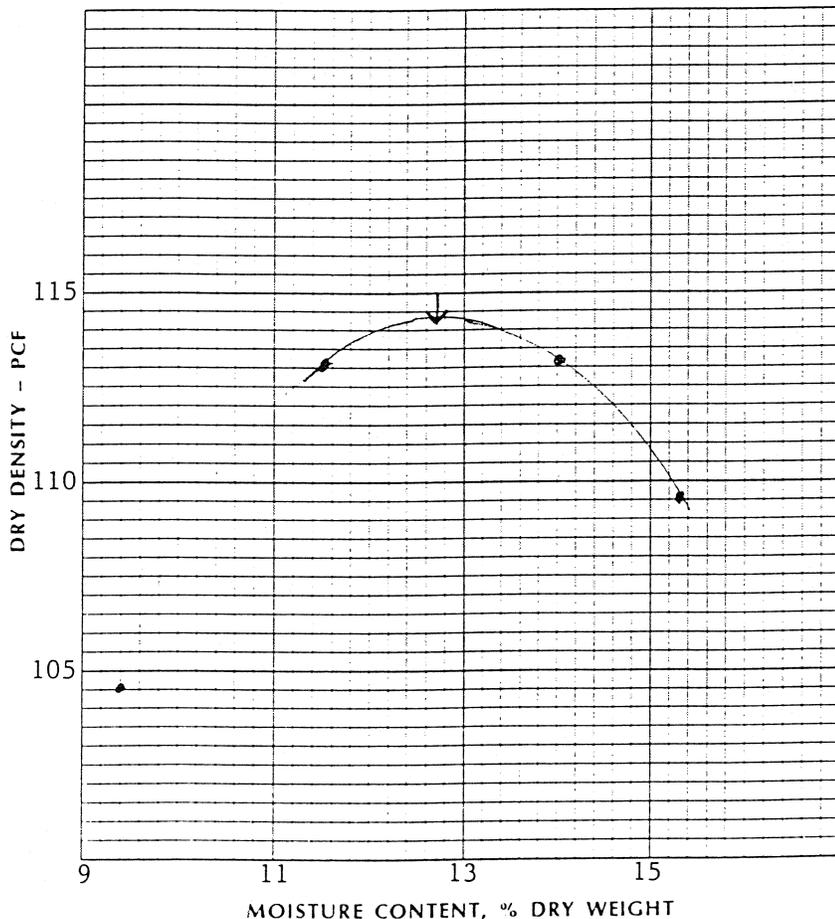
Type of Material Silty Clay (insitu) Sampled By H. Kuebler/WT Date 05/10/95

Source of Material W + 7 (73310N & 60730E) Elev. 6989.4 Submitted By H. Kuebler/WT Date 05/10/95

Tested / Calc. By H. Kuebler/WT Date 05/10/95

Test Procedure ASTM D698A Reviewed By  Date \_\_\_\_\_

Trial No.	1	2	3	4	5	6	7
Water, Estimated %							
Water, cc	200	250	300	350			
Sample + Mold Weight, gms	6328.9	6502.9	6539.4	6510.2			
Mold Weight, gms	4600.5	4600.5	4600.5	4600.5			
Wet Sample Weight, gms	1728.4	1902.4	1938.9	1909.7			
Wet Sample Weight, lbs	3.81	4.20	4.30	4.21			
Wet Density, pcf	114.3	126.0	129.0	126.3			
Moisture Sample Wet, gms	406.5	404.8	404.7	406.7			
Moisture Sample Dry, gms	371.7	362.9	354.9	352.7			
Weight of Water, gms	34.8	41.9	49.8	54.0			
Moisture, %	9.4	11.5	14.0	15.3			
Dry Density, pcf	104.5	113.0	113.2	109.5			



Maximum Dry Density, pcf 113.9

Optimum Moisture Content, % 12.7

Diameter of Mold, in. 4"

Height of Mold, in. 4.584

No. of Layers 3

Blows Per Layer 25

Weight of Hammer, lbs 5.5

Height of Drop 12"

Material Used -#4

**SOIL / AGGREGATE - MOISTURE DENSITY RELATIONS**

Job No. 3145JB031

Lab/Invoice No. 31450122

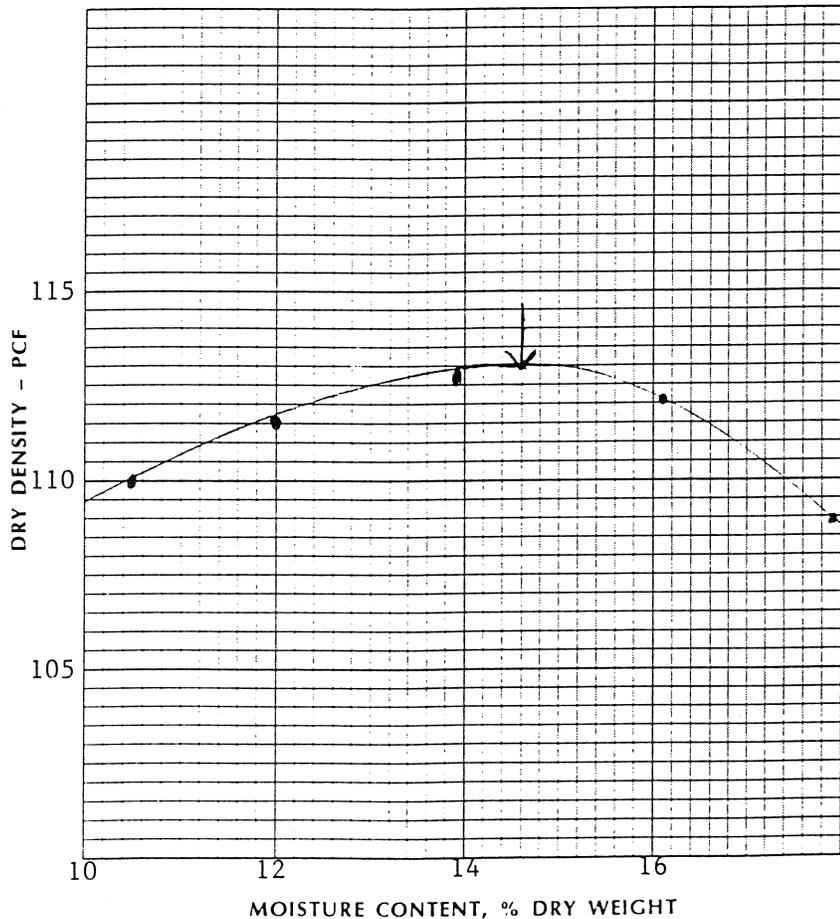
Type of Material Silty Clay Sampled By H. Kuebler/WT Date 05/10/99

Source of Material V + 4 (73610N & 60830E) Elev. 6988.4 Submitted By H. Kuebler/WT Date 05/10/99

Tested/Calc. By H. Kuebler/WT Date 05/10/99

Test Procedure ASTM D698A Reviewed By [Signature] Date \_\_\_\_\_

Trial No.	1	2	3	4	5	6	7
Water, Estimated %							
Water, cc	200	100	0	50	150		
Sample + Mold Weight, gms	6208	6208	6105	6153	6231.6		
Mold Weight, gms	4266	4266	4266	4266	4266		
Wet Sample Weight, gms	1942	1942	1839	1887	1965.6		
Wet Sample Weight, lbs	4.28	4.28	4.05	4.16	4.33		
Wet Density, pcf	128.4	128.4	121.5	124.9	130.0		
Moisture Sample Wet, gms	647	575	506	261	469.9		
Moisture Sample Dry, gms	549	505	458	233	404.7		
Weight of Water, gms	98	70	48	28	65.2		
Moisture, %	17.9	13.9	10.5	12.0	16.1		
Dry Density, pcf	108.9	112.7	110.0	111.5	112.0		



Maximum Dry Density, pcf 112.8

Optimum Moisture Content, % 14.6

Diameter of Mold, in. 4"

Height of Mold, in. 4.584

No. of Layers 3

Blows Per Layer 25

Weight of Hammer, lbs 5.5

Height of Drop 12"

Material Used -#4

**SOIL / AGGREGATE - MOISTURE DENSITY RELATIONS**

Job No. 3145JB031

Lab / Invoice No. 31450122

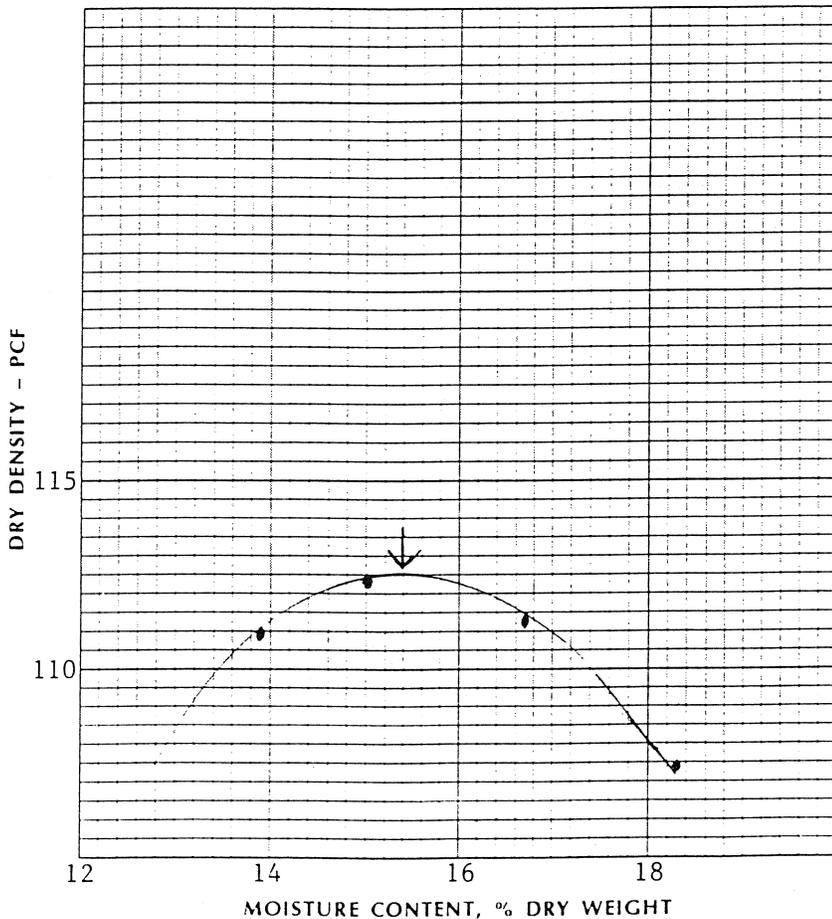
Type of Material Silty Clay Sampled By H. Kuebler/WT Date 05/10/95

Source of Material Borrow Pit #2 Stockpile Submitted By H. Kuebler/WT Date 05/10/95

Tested / Calc. By H. Kuebler/WT Date 05/10/95

Test Procedure ASTM D698A Reviewed By *[Signature]* Date \_\_\_\_\_

Trial No.	1	2	3	4	5	6	7
Water, Estimated %							
Water, cc	0	100	150	50			
Sample + Mold Weight, gms	6510.6	6565.7	6520.0	6560.2			
Mold Weight, gms	4600.6	4600.6	4600.6	4600.6			
Wet Sample Weight, gms	1910.0	1965.1	1919.4	1959.6			
Wet Sample Weight, lbs	4.21	4.33	4.23	4.32			
Wet Density, pcf	126.3	129.9	126.9	129.5			
Moisture Sample Wet, gms	436.9	225.3	255.7	219.3			
Moisture Sample Dry, gms	383.5	193.1	216.2	190.4			
Weight of Water, gms	53.4	32.2	39.5	28.9			
Moisture, %	13.9	16.7	18.3	15.2			
Dry Density, pcf	110.9	111.3	107.3	112.4			



Maximum Dry Density, pcf 112.5

Optimum Moisture Content, % 15.4

Diameter of Mold, in. 4"

Height of Mold, in. 4.584

No. of Layers 3

Blows Per Layer 25

Weight of Hammer, lbs 5.5

Height of Drop 12"

Material Used -#4

**SOIL / AGGREGATE - MOISTURE DENSITY RELATIONS**

Job No. 3145JB031

Lab/Invoice No. 31450122

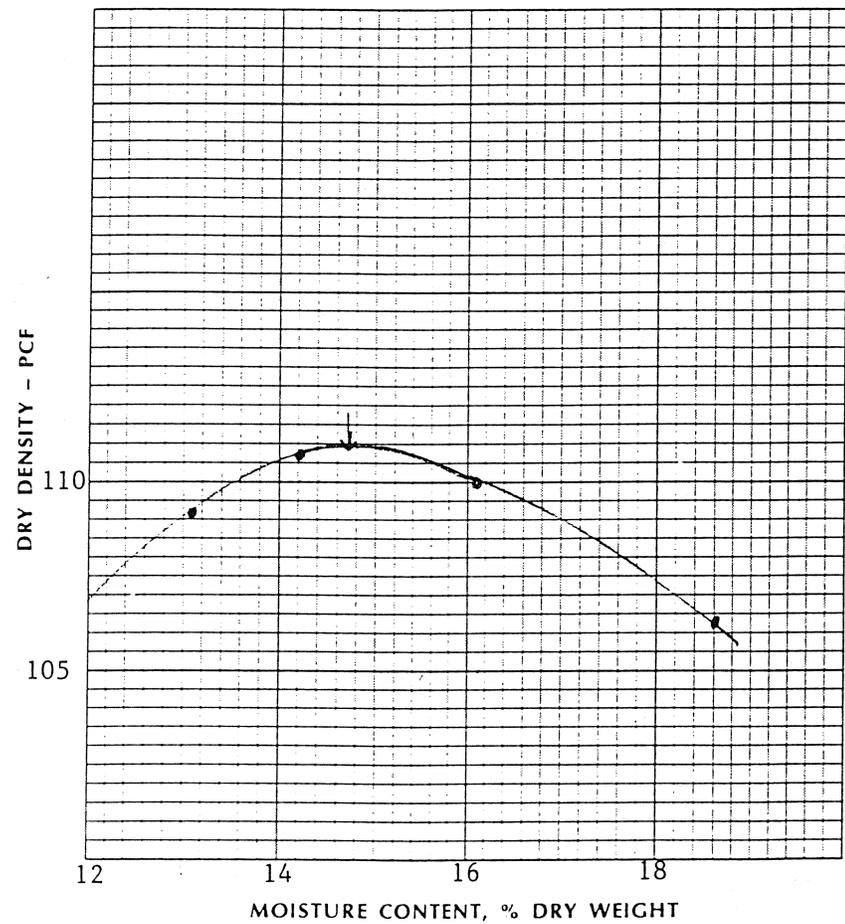
Type of Material Silty Clay Sampled By H. Kuebler/WT Date 05/11/95

Source of Material Borrow Pit #2 Submitted By H. Kuebler/WT Date 05/11/95

Tested/Calc. By H. Kuebler/WT Date 05/11/95

Test Procedure ASTM D698A Reviewed By *[Signature]* Date \_\_\_\_\_

Trial No.	1	2	3	4	5	6	7
Water, Estimated %							
Water, cc	175	125	75	25			
Sample + Mold Weight, gms	6507.0	6532.5	6510.7	6470.8			
Mold Weight, gms	4601.1	4601.1	4601.4	4601.4			
Wet Sample Weight, gms	1905.9	1931.4	1909.3	1869.4			
Wet Sample Weight, lbs	4.202	4.258	4.209	4.121			
Wet Density, pcf	126.1	127.7	126.3	123.6			
Moisture Sample Wet, gms	256.6	243.4	251.3	316.0			
Moisture Sample Dry, gms	216.4	209.7	220.1	279.3			
Weight of Water, gms	40.2	33.7	31.2	36.7			
Moisture, %	18.6	16.1	14.2	13.1			
Dry Density, pcf	106.3	110.0	110.6	109.3			



Maximum Dry Density, pcf 110.7

Optimum Moisture Content, % 14.7

Diameter of Mold, in. 4"

Height of Mold, in. 4.584

No. of Layers 3

Blows Per Layer 25

Weight of Hammer, lbs 5.5

Height of Drop 12"

Material Used -#4



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**LABORATORY  
REPORT**

Client: United Nuclear Corporation  
Post Office Drawer QQ  
Gallup, New Mexico 87301

Job No. 3141K062  
Invoice No. 31410925  
Date of Report 10/02/91  
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing  
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/24/91  
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/24/91  
Description: Fill in Borrow Pit #2 Authorized by E. Morales/UNC Date 09/24/91  
Source of Material: Old Church Rock Fill

Unit Weights (ASTM C-29) Modified\*

Loose Unit Weight, pcf                    77  
Unit Weight by Rodding, pcf            88

\*Exceptions to Test Procedure: A 1/30 cubic foot measure was  
used and the sample was tested in a moist condition.

Unit weights reported above are wet weights.

Copies: Client (3)  
Field Copy (1)  
Billing (1)  
/sr