APPENDIX A

APPENDIX A

DAILY REVIEW OF EARTHWORK CONSTRUCTION

REVIEW OF CONSTRUCTION

Project: United Nuclear Corporation
1991 Reclamation Testing-Church Rock

Job No. 3141K062

Lab/Invoice No. 31410643

Report No. Date 07/11/91

Report By H. Kuebler/WT Date 07/08/91

Reviewed By J Phillips Date 07/11/91

Prime Contractor Nielsons Inc. Superintendent Bruce Berry

Subcontractor Superintendent

Work in progress and/or completed since last report: UNC had radiation safety meeting. UNC and Western Technologies discussed specifications. WT and UNC decided to do two sandcone tests, one gradation and one plasticity index for each day the contractor is placing fill.

Unexpected site conditions: none

Sampling and/or testing performed: No testing performed.

Conformance of materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: WT scheduled for 07/15/91 to begin project.

Weather: Cloudy

Technician/Engineer time on project today: 4 hours and 1 hour preparation time

No. of visits today: 1 Time and date for next visit: 07/15/91

Copies: Client, E. Morales (1) Client, J. Fletcher (1) Billing (1)
/sr

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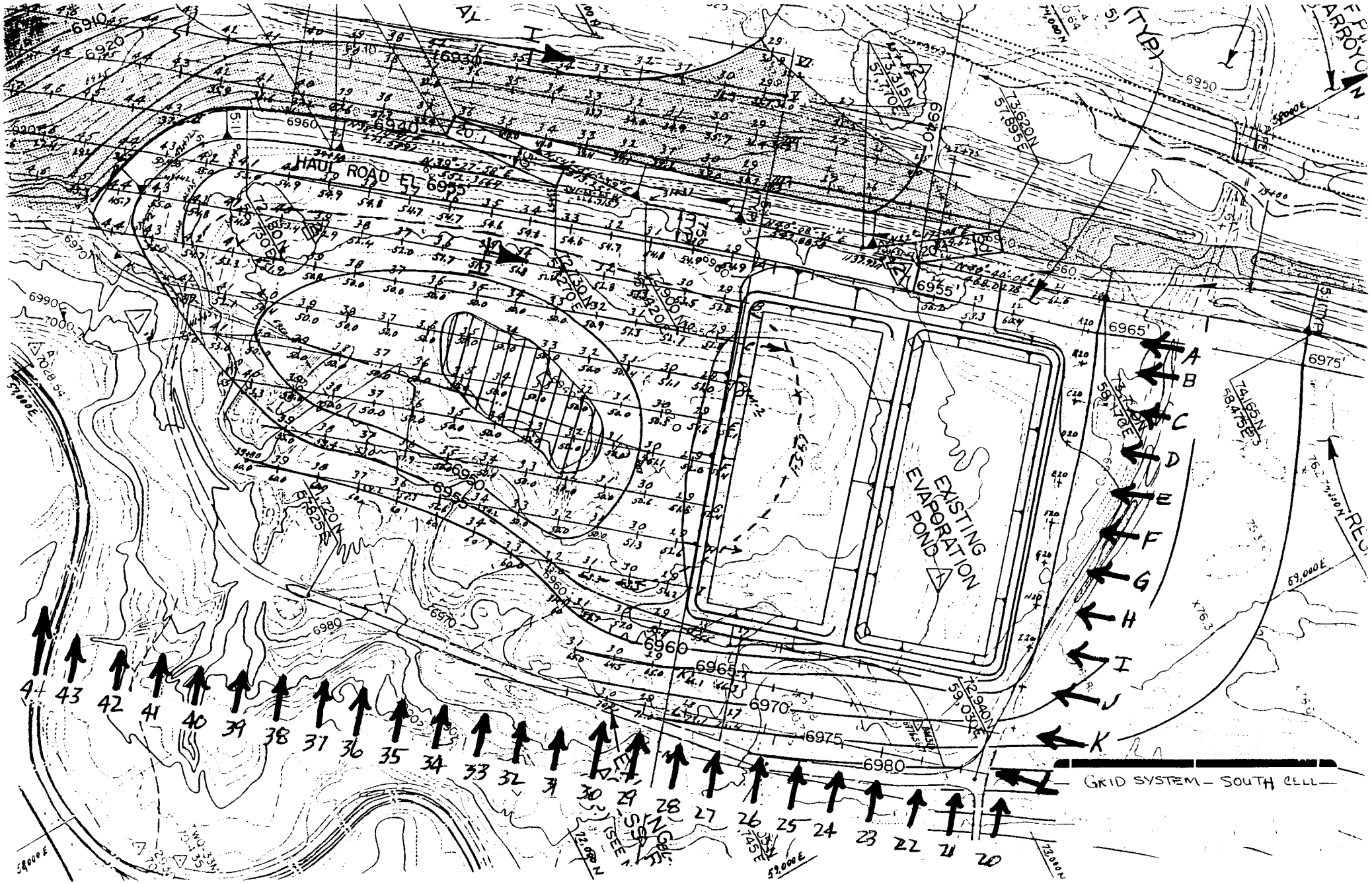
HAUL ROAD EL 6955
EXISTING EVAPORATION POND
GRID SYSTEM – SOUTH CELL
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WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
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(505) 327-4966

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. — Date 07/18/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/11/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent

Earthwork in progress and/or completed since last report: Nielsons Inc. was grubbing project site and stabilized area across south cell to provide a temporary roadway to begin tailing transportation.

Unexpected site conditions: none

Sampling and/or testing performed: Two compaction tests, 1 ASTM D698 proctor, 1 gradation and 1 Atterberg test. Also calibrated the density of sandcone sand and calibrated the sandcone test apparatus.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests met compaction requirements.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Ed Morales, UNC, stated 30 compaction tests shall be taken on the upper foot of the regraded tailings. Ed also directed that additional tests be performed periodically below the upper foot of regraded tailings. These tests will be identified as Intermediate Tailings Fill.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/12/91

Copies: Client, Ed Morales (1) Client, Jim Fletcher (1) Billing (1) /sr

Joseph A. Phillips
Reviewed By

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. — Date 07/18/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT — Date 07/12/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent

Earthwork in progress and/or completed since last report: Nielsons Inc. used a dozer to push tailings along the west edge of the site toward the center of the South cell. They placed fill along the east side of the site in a non-tailings area. Compaction testing will be performed on Monday (07/15/91).

Unexpected site conditions: Rain showers.

Sampling and/or testing performed: Observation of work in progress.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Jim Fletcher, UNC, requested Western Technologies representati to observe soil placement. Mr. Fletcher was concerned that Nielsons Inc. might place non-contaminated soil at the bottom of the tailings cell. This could cause a shortage of non-contaminated material to use as soil cover later on in the project.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/15/91

Copies: Client, E. Morales (1) Client, J. Fletcher (1) Billing (1)
/sr

J. Phillips
Reviewed By

United Nuclear Co. ration
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 07/11- 07/12

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/11	Sandcone Calibration	-	-	-	-	-	-	-	-	-	-
	Proctor ASTM D698	A-36	72480	57200	6954.7	RTS	114.2	14.5	-	-	-
	Gradation/ Atterberg	A-36	72480	57200	6954.7	RTS	-	-	-	-	-
	Sandcone	A-36	72480	57200	6954.7	RTS	108.3	7.3	95	SM	n/a
	Sandcone	B-36	72420	57260	6948.0	*	103.8	7.1	91	SM	n/a
07/12	No Testing Performed This Day										

TOTAL

*Intermediate Tailings Fill
RTS=Regraded tailings surface
TSC=Top of soil cover
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. — Date 07/25/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT — Date 07/15/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent

Earthwork in progress and/or completed since last report: Nielsons Inc. continued to place tailings in bottom of south cell. East side of site was graded to top of regraded tailings surface. Majority of this area is non-tailings area.

Unexpected site conditions: none

Sampling and/or testing performed: Performed two compaction tests, 1 gradation, 1 Atterberg test and 1 ASTM D698 Proctor, Method A.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests indicated fill operations are achieving adequate compaction.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Ed Morales stated during conversation with WT representative H. Kuebler the non-tailing area does not need testing.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/15/91

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

Joseph A Shullyo
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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. ____ Date 07/25/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/16/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. continued to haul tailings to north section of south cell. Approximately seven feet of tailings will be placed before final regraded surface elevation is met.

Unexpected site conditions: none

Sampling and/or testing performed: Performed two compaction tests, one gradation, one Atterburg test and one ASTM D698 Proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests met job specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 7/17/91 at 7:30 AM

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. ____ Date 07/25/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/17/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. was attempting to gain access to south portion of south cell. Nielsons Inc. was having difficulties with unstable and saturated existing ground causing equipment to get stuck.

Unexpected site conditions: none

Sampling and/or testing performed: Performed three compaction tests, one gradation, one Atterburg test and one ASTM D698 Proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests met compaction requirements.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Test #33 (grid G-32) indicated a compaction percentage of 82%. This area will have another nine feet of fill placed before regraded tailings surfac elevation is met. Test #3 (grid G-32) was taken for radon barrier modulus and no compaction requirements are specified for this particular elevation.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/18/91 at 7:30 AM

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. ____ Date 07/25/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/18/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Neilsons Inc. continued to place tailings in south cell. Fill placement was in north edge and east edge of south cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed two compaction tests, one gradation, 1 Atterburg test and one ASTM D698 Proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests met job specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/19/91

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. ____ Date 07/25/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/19/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing fill in south section of south cell. Fill will be dispersed with a dozer in soft areas of south cell on a later date.

Unexpected site conditions: none

Sampling and/or testing performed: Performed one gradation, one Atterburg test and one ASTM D698 Proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Nielsons Inc. did not compact any fill today, therefore no compaction tests were done. Compaction testing will resume on 07/22/91.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: Monday 07/22/91 at 8:30 AM

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

Joseph A Phillips
Reviewed By

United Nuclear Cor ation
SOUTH CELL INTERIM RECL TION - 1991

Test Summary for Week of 07/15- 07/19

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/15	Sandcone	H-30.5	72450	58140	6952	RTS	104.4	5.0	91	SM	Yes
	Sandcone	E-29	72770	57930	6945	*	102.3	11.3	91	SM	n/a
	Proctor ASTM D698	E-29	72770	57930	6945	*	112.3	14.3	-	SM	-
	Gradation/ Atterberg	E-29	72770	57930	6945	*	-	-	-	SM	-
07/16	Sandcone	G-30	72500	58040	6943.6	*	107.3	11.7	96	SM	n/a
	Sandcone	B-29	72950	57720	6953.8	RTS	115.3	13.4	100+	SM	Yes
	Proctor ASTM D698	A-34	72640	57320	6954.6	RTS	111.0	13.9	-	SM	-
	Gradation/ Atterberg	A-34	72640	57320	6954.6	RTS	-	-	-	SM	-
07/17	Sandcone	H-29	72580	58190	6946.6	*	108.3	13.3	98	SM	n/a
	Sandcone	G-30	72550	58040	6943.6	*	110.1	14.3	100	SM	n/a
	Sandcone	G-32	72400	57900	6941.0	*	90.3	9.6	82	SM	n/a
	Gradation/ Atterberg	B-29	72950	57720	6953.8	RTS	-	-	-	SM	-
	Proctor ASTM D698	B-29	72950	57720	6953.8	RTS	110.3	11.6	-	SM	-
07/18	Sandcone	B-30	72750	57800	6943.6	*	107.9	11.4	95	SM	n/a
	Sandcone	E-31	72610	57820	6943.1	*	108.2	12.1	95	SM	n/a
	Proctor ASTM D698	B-30	72750	57800	6943.6	*	113.7	13.2	-	SM	-
	Gradation/ Atterberg	B-30	72750	57800	6943.6	*	-	-	-	SM	-
07/19	Proctor ASTM D698	G-31	72610	57820	6943.6	*	111.6	14.0	-	SM	-
	Gradation/ Atterberg	G-31	72610	57820	6943.6	*	-	-	-	SM	-

TOTAL

*Tailings-Intermediate
RTS=Regraded tailings surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. ____ Date 07/31/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/22/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. continued to place tailings in bottom of south cell and non-tailings along southeast end of south cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed two compaction tests, 1 gradation, 1 Atterburg test and 1 ASTM D698-C Proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests indicate adequate compaction.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Soil from grid point A-43 shall be used in non-tailings areas and as Intermediate material in south cell.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 7:30 AM 07/23/91

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

L. Wardbark
Reviewed By

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(505) 327-4966

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. ____ Date 07/31/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/23/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. placed fill material in southeast and northeast sections of south cell. Nielsons Inc. was compacting along west side of south cell. Compaction tests will be done tomorrow.

Unexpected site conditions: none

Sampling and/or testing performed: Performed 1 gradation, 1 Atterburg test and 1 ASTM D698A Proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: No compaction tests were performed today.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Compaction tests shall be performed on 07/24/91 after Nielsons Inc. has compacted portions of south cell.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/24/91

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

L. Wareback
Reviewed By

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(505) 327-4966

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. ____ Date 07/31/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/24/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. continued to place tailing material in north section of south cell from Grid Line 30 to 32. Fill placement of non-tailing area continued along east side of south cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed 4 compaction tests, one gradation, one Atterburg test and one ASTM D698 Proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests met job specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/25/91 at 7:30 AM

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

L. Wansbrough
Reviewed By

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. ___ Date 07/31/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/25/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ___ Superintendent ___

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing fill in north portion o south cell site, however, the crew had not begun to compact material.

Unexpected site conditions: none

Sampling and/or testing performed: 1 ASTM D698 Proctor, 1 gradation and 1 Atterburg test were performed today. There were no compaction tests performed today.

Conformance of earthwork materials, operations and/or test results to project requirements: No compaction tests will be performed until fill areas are compacted.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Joe Phillips, WT Division Manager, was on site today. Jim Fletcher with UNC requested WT to record tailing material elevations prior to non-tailing fill placement.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/26/91

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

L. Wareback
Reviewed By

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410643

Project 1991 Reclamation Testing — Report No. ____ Date 07/31/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/26/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. placed fill in southeast section of south cell. The material was non-tailing material consisting of silty sand with sandstone pieces - non plastic. Nielsons Inc. did not compact fill material which is below regraded tailing elevation.

Unexpected site conditions: none

Sampling and/or testing performed: Performed one gradation and one Atterburg test.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/29/91

Copies: Client, J. Fletcher (1) Client, E. Morales (1) Field Copy (1) Billing (1) /sr

K. Warnock
Reviewed By

United Nuclear Co ·ation
SOUTH CELL INTERIM RECL .TION - 1991

Test Summary for Week of 07/22- 07/26

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/22	Proctor ASTM D698	A-43	71930	56730	6950.4	**	114.2	13.6	-	SM	-
	Gradation/ Atterberg	A-43	71930	56730	6950.4	**	-	-	-	SM	-
	Sandcone	F-31	72550	57900	6944.6	***	109.9	11.8	97	SM	Yes
	Sandcone	C-30	72820	57730	6945.5	***	111.3	12.5	98	SM	Yes
07/23	Proctor ASTM D698	D-32	72600	57680	6945.0	***	109.5	12.8	-	SM	-
	Gradation/ Atterberg	D-32	72600	57680	6945.0	***	-	-	-	SM	-
	No compaction tests today.										
07/24	Proctor ASTM D698	B-42	71950	57780	6954.8	RTS	113.3	14.8	-	SC	-
	Gradation/ Atterberg	B-42	71950	57780	6954.8	RTS	-	-	-	SC	-
	Sandcone	B-30	72880	57650	6953.5	*	108.9	10.8	99	SM	Yes
	Sandcone	A-34	72640	57320	6954.6	*	99.8	3.9	90	SM	Yes
	Sandcone	A-31	72870	57600	6954.8	*	104.0	9.6	94	SM	Yes
	Sandcone	D-32	72600	57680	6945.0	***	106.5	10.9	97	SM	Yes
07/25	Proctor ASTM D698	A-39	72240	57000	6954.9	RTS	111.7	13.8	-	SM	-
	Gradation/ Atterberg	A-39	72240	57000	6954.9	RTS	-	-	-	SM	-
	No compaction tests today.										
07/26	Gradation/ Atterberg	E-38	72090	57370	6950.0	RTS	-	-	-	SM	-
	No compaction tests or proctor today.										

TOTAL

**Non-Tailings
***Intermediate Tailings
RTS=Regraded tailings surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. — Date 08/08/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT — Date 07/29/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent

Earthwork in progress and/or completed since last report: Nielsons Inc. continued to place non-tailings fill material in the south end of the south cell, in an area from grid C-36 to C-38 and F-36 to F-38.

Unexpected site conditions: none

Sampling and/or testing performed: Two compaction tests, one gradation, one Atterburg test and one ASTM D698-C proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests met specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/30/91

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

Joseph A. Phillips
Reviewed By

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. ____ Date 08/08/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 07/30/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing tailings fill in center of south cell with use of dozer and placing fill with scrapers along grid line 36.

Unexpected site conditions: none

Sampling and/or testing performed: Two compaction tests, one gradation, one Atterburg test and one ASTM D698-A proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests met job specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 07/31/91

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

Joseph A Phillips
Reviewed By

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. — Date 08/08/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT — Date 07/31/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing fill between grid points E-36 and B-38 and removing tailings from below proposed haul road.

Unexpected site conditions: none

Sampling and/or testing performed: Observation, one gradation and one Atterburg test.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Nielsons Inc. did not compact fill today, therefore no compaction tests were performed.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/01/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. ____ Date 08/08/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/01/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing fill in south section of south cell.

Unexpected site conditions: none

Sampling and/or testing performed: Two compaction tests, one ASTM D698-A proctor, one gradation and one Atterburg test were performed.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests indicated test area met job specification.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/02/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. ____ Date 08/08/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/02/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. continued to place fill from grid line C to D.

Unexpected site conditions: none

Sampling and/or testing performed: One gradation and one Atterburg test.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Nielsons Inc. compactor broke down. No compaction tests were performed.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/05/91

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

Joseph A Phillips
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United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 07/29- 08/02

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/29	Proctor ASTM D698	F-38	72020	57430	6950.0	RTS	116.3	10.6	-	SM	-
	Gradation/ Atterburg	F-38	72020	57430	6950.0	RTS	-	-	-	SM	-
	Sandcone	E-37	72210	57490	6946.0	**	110.2	8.1	95	SM	Yes
	Sandcone	F-38	72020	57430	6950.0	RTS	115.0	7.4	99	SM	Yes
07/30	Proctor ASTM D698	A-33	72680	57390	6954.6	RTS	112.3	12.6	-	SM	-
	Gradation/ Atterburg	A-33	72680	57390	6954.6	RTS	-	-	-	SM	-
	Sandcone	A-33	72680	57390	6954.6	RTS	110.3	8.3	98	SM	Yes
	Sandcone	E-33	72450	57680	6941.0	**	106.2	12.1	97	SM	Yes
07/31	Gradation/ Atterburg	B-40	72120	57020	6953.4	RTS	-	-	-	SM	-
	No compaction tests today.										
08/01	Proctor ASTM D698	A-24	73400	57950	6956.2	RTS	117.3	12.2	-	SM	-
	Gradation/ Atterburg	A-24	73400	57950	6956.2	RTS	-	-	-	SM	-
	Sandcone	A-24	73400	57950	6956.2	RTS	123.4	11.5	100+	SM	Yes
	Sandcone	A-28	73100	57700	6955.0	RTS	115.0	10.4	93	SM	Yes
08/02	Gradation/ Atterburg	D-34	72430	57450	6940.0	**	-	-	-	SM	-
	No compaction tests today.										

TOTAL

*Non-Tailings
**Intermediate Tailings
RTS=Regraded tailings surface
RTS^1=Regraded tailings surface-fill material
TSC=Top of soil cover
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. — Date 08/13/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT — Date 08/05/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent

Earthwork in progress and/or completed since last report: Nielsons Inc. transported fill to center of south cell. Approximately eight feet of fill will be placed in this area before regraded tailing surface is reached.

Unexpected site conditions: None

Sampling and/or testing performed: One gradation, one atterberg test, and one ASTM D698-A proctor were performed.

Conformance of earthwork materials, operations and/or test results to project requirements: Nielsons Inc. compactor is still broken. No compacting was done today.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/06/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. ____ Date 08/13/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/06/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing non-tailings clay material to regraded tailing surface elevation along grid lines 29 to 30. Nielsons Inc. was also placing non-tailing material, silty sand with sandstone pieces, along grid lines B to C.

Unexpected site conditions: none

Sampling and/or testing performed: One gradation and one Atterberg test.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Nielsons Inc. compactor is still broken. No compacting was done today.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/07/91

Copies: Client (3) Field Copy (2) Billing (1) /mja

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. — Date 08/13/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/07/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent

Earthwork in progress and/or completed since last report: Nielsons Inc. continued to haul non-tailing fill into the south cell. Nielsons Inc. placed geo-textile fabric on Haul Road from Sta. 23+00 to 27+00 and began to place fill on fabric.

Unexpected site conditions: none

Sampling and/or testing performed: One gradation and one Atterberg test was performed.

Conformance of earthwork materials, operations and/or test results to project requirements: No compaction tests were performed today.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Nielsons Inc. shall compact first lift on Haul Road tomorrow with the use of loaded scrapers. Compactor is still broken down.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/08/91

Copies: Client (3) Field Copy (2) Billing (1) /mja

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. ____ Date 08/13/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/08/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. compacted bottom lift of soil on Haul Road between Sta. 21+00 and 28+00. Fill material was from Haul Road embankment. Nielsons Inc. continued to place fill in the south cell.

Unexpected site conditions: none

Sampling and/or testing performed: Three compaction tests, one gradation, and one Atterberg test were performed.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests were performed on bottom lift on Haul Road between Sta. 21+00 to 28+00. These tests met job specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: n/a

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 7:30 a.m. 08/09/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 199 Reclamation Testing — Report No. ____ Date 08/13/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/09/91

Prime Contractor Nielsons inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. continued to place fill in south cell using Haul Road embankment as borrow.

Unexpected site conditions: none

Sampling and/or testing performed: One gradation and one Atterberg test were performed.

Conformance of earthwork materials, operations and/or test results to project requirements: No compaction tests were performed since roller is still broken.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: n/a

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/12/91

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United Nuclear Co. ration
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 08/05 - 08/09

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY #1 Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/05	Gradation/ Atterberg	--	Haul Road	28+00	6965	**	-	-	-	CL	
	Proctor ASTM D698		Haul Road	28+00	6965	**	113.0	14.8	-	CL	
	No Compaction tests today.										
08/06	Gradation/ Atterberg	B-33	72630	57460	6952.2	RTS	-	-	-	SM	
	No compaction tests today.										
08/07	Gradation/ Atterberg	E-29	72770	57930	6944.3	**	-	-	-	CL	
	No Compaction tests today.										
08/08	Sandcone	Sta. 27+00	L. of CL		6954	Haul Rd.	110.4	10.2	98	CL	Yes
	Sandcone	Sta. 25+00	on CL		6954	Haul Rd.	111.6	12.7	99	CL	Yes
	Sandcone	Sta. 23+00	R. of CL		6954	Haul Rd.	110.4	13.2	98	CL	Yes
	Gradation/ Atterberg	D-31	72660	57730	6946.7	**	-	-	-	CL	-
08/09	Gradation/ Atterburg	C-32	72650	57600	6948.2	**	--	-	-	CL-ML	-
	No compaction tests today.										

TOTAL

*Non-Tailings
**Intermediate Tailings
RTS=Regraded tailings surface
TSC=Top of soil cover
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. ____ Date 08/21/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/14/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. placed fill from Borrow Pit #2 Stockpile into South Cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed one gradation and one Atterburg test.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Nielsons Inc. was not compacting regraded tailings surface. Gradation and Atterburg test samples came from Borrow Pit #2 Stockpile, sampled at grid point G-30. E. Morales, UNC, stated that intermediate fill under regraded tailings surface did not need to be checked for compaction.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/15/91

Copies: Client (3)
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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. ____ Date 08/21/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/15/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. began compacting regraded tailing surface and continued to place fill in South Cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed one gradation, one Atterburg test and one compaction test.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction test at A-26 met compaction requirement for regraded tailings surface.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/16/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410716

Project 1991 Reclamation Testing — Report No. — Date 08/21/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/16/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor — Superintendent

Earthwork in progress and/or completed since last report: Neilsons Inc. continued fine grading to regraded tailings surface from grid line A to B and continued placing fill to regraded tailings surface.

Unexpected site conditions: none

Sampling and/or testing performed: Performed one ASTM D698A Proctor, one gradation, one Atterburg test and five sandcone compaction tests on regraded tailings surface.

Conformance of earthwork materials, operations and/or test results to project requirements: Four of the five compaction tests met compaction requirements.

Person/persons notified of nonconformance to project requirements: One compaction test failed (B-38).

Nonconformance corrected: Failing area will be recompacted and retested at a later date.

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/16/91

Copies: Client (3)
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/sr

Joseph A. Phillips
Reviewed By

United Nuclear Cor[illegible]tion
SOUTH CELL INTERIM RECL[illegible]ION - 1991

Test Summary for Week of 08/12 - 08/16

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY #1 Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/12	Gradation/ Atterberg	C-33	72580	57540	6950.0	RTS	-	-	-	CL	-
	Proctor ASTM D698A	C-33	72580	57540	6950.0	RTS	115.0	13.0	-	CL	-
	No Compaction tests today.										
08/13	Gradation/ Atterberg	C-41	71960	57020	6953.3	RTS	-	-	-	SM	-
	Proctor ASTM D698A	C-41	71960	57020	6953.3	RTS	113.5	13.4	-	SM	-
	Sandcone	Sta. 29+00, 10'R of CL			6954.0	Haul Rd.	108.1	15.8	96 P	CL	Yes
	Sandcone	Sta. 31+00 on CL			6954.0	Haul Rd.	115.2	13.3	100 P	CL	Yes
	Sandcone	Sta. 33+00, 10'R of CL			6954.0	Haul Rd.	113.5	13.8	100 P	CL	Yes
	Sandcone	Sta. 35+00, 10'L of CL			6954.0	Haul Rd.	112.8	12.8	100 P	CL	Yes
08/14	Gradation/ Atterberg	G-30**	72550	58040	6947.0	*	-	-	-	SC/SM	-
	No Compaction tests today.										
08/15	Gradation/ Atterberg	G-31**	72610	57820	6946.5	*	-	-	-	CL	-
	Sandcone	A-26	73250	57830	6955.0	RTS	108.7	10.6	93 P	SM	Yes
08/16	Gradation/ Atterberg	B-32	72710	57530	6952.8	RTS	-	-	-	SM	-
	Proctor ASTM D698C	B-32	72710	57530	6952.8	RTS	119.5	10.2	-	SM	-
	Sandcone	A-39	72240	57000	6954.9	RTS	107.2	6.7	96 P	SM	Yes
	Sandcone	A-41	72100	56860	6955.0	RTS	112.4	7.7	100 P	SM	Yes
	Sandcone	B-32	72710	57530	6952.8	RTS	108.8	6.3	91 P	SM	Yes
	Sandcone	B-36	72400	57260	6951.7	RTS	114.5	5.6	96 P	SM	Yes
	Sandcone	B-38	72260	57130	6952.4	RTS	106.6	6.7	89 F	SM	No

*Intermediate fill
**Material came from Borrow Pit #2 Stockpile
RTS=Regraded tailings surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

REVIEW OF CONSTRUCTION

Project	United Nuclear Corporation 1991 Reclamation Testing	Job No.	3141K062
		Lab/Invoice No.	31410716
		Report No.	Date 08/26/9
Report By	R. Johnston/WT	Date 08/19/91	Reviewed By J. Phillips Date 08/26/9
Prime Contractor	Nielsons Inc.	Superintendent	Bruce Berry
Subcontractor		Superintendent	

Work in progress and/or completed since last report: Nielsons Inc. continued final grading of regraded tailings surface from Grid line A to C. Soft spots between grid line B to C and 39 to 42 were excavated and replaced with material from borrow area.

Unexpected site conditions: none

Sampling and/or testing performed: One field density retest was performed on regraded tailings surface at B-38.

Conformance of materials, operations and/or test results to project requirements: Field density test performed met project requirements.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Weather: -

Technician/Engineer time on project today: 4.5 hours

No. of visits today: 1 Time and date for next visit: 08/22/91

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

REVIEW OF CONSTRUCTION

Project: United Nuclear Corporation
1991 Reclamation Testing

Job No. 3141K062
Lab/Invoice No. 31410716
Report No. Date 08/26/9

Report By R. Johnston/WT Date 08/20/91 Reviewed By J. Phillips Date 08/26/9

Prime Contractor Nielsons Inc. Superintendent Bruce Berry

Subcontractor Superintendent

Work in progress and/or completed since last report: Final grading of regraded tailings surface from Grid line B to C continued today by Nielsons Inc. Several pumping areas between Grid line A to C and 39 to 42 were excavated and backfilling continued.

Unexpected site conditions: Two scrapers were broke down and little backfill material was placed on regraded tailings surface.

Sampling and/or testing performed: 3 field density tests were performed on regraded tailings surface.

Conformance of materials, operations and/or test results to project requirements: All field density tests met project requirements.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Weather: -

Technician/Engineer time on project today: 8 hours

No. of visits today: 1 Time and date for next visit: 08/21/91

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

WESTERN TECHNOLOGIES INC.

REVIEW OF CONSTRUCTION

Project: United Nuclear Corporation
1991 Reclamation Testing

Job No. 3141K062
Lab/Invoice No. 31410716
Report No. Date 08/26/9

Report By H. Kuebler/WT Date 08/22/91 Reviewed By J. Phillips Date 08/26/9

Prime Contractor Nielsons Inc. Superintendent Lou Chin

Subcontractor Superintendent

Work in progress and/or completed since last report: Nielsons Inc. recompacted failing test areas in regrad tailings surface and haul road.

Unexpected site conditions: none

Sampling and/or testing performed: One proctor point, six compaction tests and one compaction retes were performed.

Conformance of materials, operations and/or test results to project requirements: Compaction tests on Sta. 41+00 haul road and regraded tailings surface B-42 met compaction requirements.

Person/persons notified of nonconformance to project requirements: Nielsons Inc. was informed of failing compaction test locations.

Nonconformance corrected: Nielsons Inc. began to recompact failing areas. Retest B-40 met job specifications.

Instructions or information received/from: none

Weather: Cloudy

Technician/Engineer time on project today: 8 hours

No. of visits today: 1 Time and date for next visit: 08/23/91

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

REVIEW OF CONSTRUCTION

Project: United Nuclear Corporation
1991 Reclamation Testing

Job No. 3141K062
Lab/Invoice No. 31410716
Report No. Date 08/26/9

Report By H. Kuebler/WT Date 08/23/91 Reviewed By J. Phillips Date 08/26/9

Prime Contractor Nielsons Inc. Superintendent Lou Chin

Subcontractor Superintendent

Work in progress and/or completed since last report: Nielsons Inc. recompacted failing areas in Haul Road and regraded tailings surface. Nielsons Inc. began soil cover placement between Grid lines A to B. Compaction of soil cover material will occur on a later date.

Unexpected site conditions: none

Sampling and/or testing performed: Three compaction retests and two compaction tests were performed.

Conformance of materials, operations and/or test results to project requirements: All compaction and compaction retests met job specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Weather: Cloudy

Technician/Engineer time on project today: 8 hours

No. of visits today: 1 Time and date for next visit: 08/26/91

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

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 08/19 - 08/23

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/19	Sandcone	B-38	72660	57130	6952.4	RTS	117.3	5.1	98 P	SM	Yes
08/20	Sandcone	C-31	72760	57660	6951.3	RTS	108.1	8.6	94 P	CL	Yes
	Sandcone	C-33	72580	57500	6950.0	RTS	107.0	9.1	93 P	CL	Yes
	Sandcone	C-35	72420	57390	6950.0	RTS	115.7	5.9	97 P	SM	Yes
08/21	No Lab or Field Tests Today										
08/22	Proctor (1 point) ASTM D698A	B-42	71950	57880	6954.8	RTS	115.0	13.0	-	CL	-
	Sandcone	B-42	71950	57880	6954.8	RTS	106.0	7.1	94 P	CL	Yes
	Sandcone	A-21	73650	58100	6962.6	RTS	102.6	8.7	89 F	CL	No
	Sandcone	B-40	72110	57020	6953.4	RTS	102.7	8.5	89 F	CL	No
	Retest Sandcone	B-40	72110	57020	6953.4	RTS	106.6	13.0	93 P	CL	Yes
	Sandcone		Sta. 37+00, CL		6954.0	Haul Road	104.9	8.6	93 F	CL	No
	Sandcone		Sta. 39+00, 5'L of CL		6954.0	Haul Road	102.5	10.4	91 F	CL	No
	Sandcone		Sta. 41+00, CL		6954.0	Haul Road	108.5	13.6	96 P	CL	Yes
08/23	Retest Sandcone	A-21	73650	58100	6962.6	RTS	112.2	15.7	98 P	CL	Yes
	Retest Sandcone		Sta. 37+00, CL		6954.0	Haul Road	109.0	14.9	96 P	CL	Yes
	Retest Sandcone		Sta. 39+00, 5'L of CL		6954.0	Haul Road	109.9	13.4	97 P	CL	Yes
	Sandcone	C-41	71970	57020	6953.3	RTS	108.2	11.6	95 P	SM	Yes
	Sandcone	C-39	72120	57150	6950.8	RTS	113.5	5.1	95 P	SM-SC	Yes

RTS=Regraded tailings surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/26/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. placed soil cover material between A to B line and continued to compact regraded tailings surface between C to D line.

Unexpected site conditions: none

Sampling and/or testing performed: Performed three compaction tests, one ASTM D698 proctor, one gradation and one Atterberg test.

Conformance of earthwork materials, operations and/or test results to project requirements: One of the three compaction tests met job specifications (D-32).

Person/persons notified of nonconformance to project requirements: Nielsons Inc. was notified of non-conformi compaction tests located at (D-30) and (D-34).

Nonconformance corrected: Nielsons Inc. shall recompact failing areas.

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/27/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/27/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. recompacted regraded tailings surface on D line of South Cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed four compaction tests and one sandcone calibration.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests today met job specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Ed Morales, UNC, stated intermediate fill material for South Cell will come from old Church Rock site and Borrow Pit #2 stockpile. Ed Morales and Harry Kuebler designated locations for future testing on the South Cell soil cover. Approximately forty Atterberg-gradation, sixteen proctors and eighty compaction tests will be performed on South Cell soil cover-layer.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/28/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. — Date 09/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT — Date 08/28/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor Fuhs Construction — Superintendent Dennis Fuhs

Earthwork in progress and/or completed since last report: Fuhs Construction began transporting fill from old Church Rock site for intermediate fill in E line of South Cell. Nielsons Inc. continued to place interim soil cover between lines B and C of South Cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed Unit Weight tests, two ASTM D698 proctors, eight gradation and Atterberg tests for soil cover material and one gradation-Atterberg test from old Church Rock site for intermediate fill.

Conformance of earthwork materials, operations and/or test results to project requirements: No compaction tests performed today.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Ed Morales, UNC, requested unit weights and gradation-Atterberg tests once a week on old Church Rock fill material.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/29/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/29/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor Fuhs Construction — Superintendent Dennis Fuhs

Earthwork in progress and/or completed since last report: Fuhs Construction continued to transport old Church Rock fill material along E line of South Cell. Nielsons Inc. continued to place interim soil cover between B and C lines.

Unexpected site conditions: none

Sampling and/or testing performed: Technician continued to work on previous day samples.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Jim Fletcher, UNC stated Monday was a holiday.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 08/30/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 08/30/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor Fuhs Construction — Superintendent Dennis Fuhs

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing intermediate fill between D and E lines and placing soil cover material between C and D lines. Fuhs Construction continued transporting old Church Rock material to E line of South Cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed one gradation/Atterberg test and one ASTM D698A procto: located at (A-40) for soil cover material.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a-Nielsons Inc. was not compacting any regraded tailing or soil cover material.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Nielsons Inc. borrowed speedy moisture meter from WT to obtain an indication of moisture content in soil cover material being placed.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/03/91

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United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 08/26 - 08/30

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/26	Proctor ASTM D698C	D-36	72280	57400	6950.0	RTS	118.0	12.4	-	SC-SM	n/a
	Gradation/ Atterberg	D-36	72280	57400	6950.0	RTS	-	-	-	SC-SM	n/a
	Sandcone	D-30	72750	57810	6951.1	RTS	97.0	8.0	82 F	SC-SM	No
	Sandcone	D-32	72580	57670	6950.0	RTS	109.3	4.6	93 P	SC-SM	Yes
	Sandcone	C-34	72430	57530	6950.0	RTS	101.0	10.6	86 F	SC-SM	No
08/27	Sandcone Calibration						94.3				n/a
	Retest Sandcone	D-30	72750	57810	6951.1	RTS	118.8	11.3	100+P	SC-SM	Yes
	Retest Sandcone	D-34	72580	57670	6950.0	RTS	108.0	6.5	92 P	SC-SM	Yes
	Sandcone	D-36	72280	57400	6950.0	RTS	113.8	10.5	96 P	SC-SM	Yes
	Sandcone	D-39	72070	57220	6950.0	RTS	119.7	5.3	100+P	SC-SM	Yes
08/28	Unit weights from old Church Rock site for intermediate fill for South Cell									CL	n/a
	Gradation/ Atterberg	from old Church Rock site for intermediate fill for South Cell								CL	n/a
	Proctor ASTM D698A	A-22	73550	58100	6961.4	TSC	111.6	14.2	-	CL	n/a
	Gradation/ Atterberg	A-22	73550	58100	6961.4	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-24	73400	57950	6957.2	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-26	73250	57830	6956.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-28	73100	57700	6956.0	TSC	-	-	-	CL	Yes

RTS=Regraded tailings surface-fill material
TSC=Top of soil cover
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Co· ration
SOUTH CELL INTERIM REC. .TION - 1991

Test Summary for Week of 08/26 - 08/30

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/28	Proctor ASTM D698A	A-30	72900	57570	6955.9	TSC	109.3	16.4	-	CL	n/a
	Gradation/ Atterberg	A-30	72900	57570	6955.9	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-32	72800	57430	6955.7	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-34	72640	57320	6955.6	TSC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	A-36	72480	57200	6955.7	TSC	-	-	-	CL	Yes
08/29	Finished testing from 08/28/91										
08/30	Proctor ASTM D698A	A-40	72170	56930	6955.9	TSC	108.5	15.0	-	CL	n/a
	Gradation/ Atterberg	A-40	72170	56930	6955.9	TSC	-	-	-	CL	Yes

TSC=Top of soil cover
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/09/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/03/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor Fuhs Construction — Superintendent Dennis Fuhs

Earthwork in progress and/or completed since last report: Nielsons Inc. compacted soil cover on grid line A. Bruce Berry/Nielsons Inc. requested compaction tests at 3:00 PM for soil cover material. Fuhs Construction continued to place fill in South Cell along E line from old Church Rock site.

Unexpected site conditions: none

Sampling and/or testing performed: One density test taken. Sampled material for 4 ASTM D698 proctor and 7 Atterberg and gradation tests. Samples were taken along A and B lines.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Moisture content result for density test will be completed on 09/04/91.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/04/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/09/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/04/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor Fuhs Construction — Superintendent Dennis Fuhs

Earthwork in progress and/or completed since last report: Nielsons Inc. recompacted grid line A and began to process soil cover material in line B. Nielsons Inc. requested compaction tests on grid line A at 12:30 PM. WT tech began to test at 12:35 PM. Fuhs Construction continued to place fill from old Church Rock site alone E line in South Cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed five compaction tests and continued laboratory testing for grid line B samples.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Compaction for density test A-23 failed to meet specification. Nielsons Inc. was notified at 7:40 AM and will recompact A line.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/05/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Client: United Nuclear Corporation — Job No.: 3141K062

Project: 1991 Reclamation Testing — Invoice No.: 31410844

Location: Church Rock, New Mexico — Report No.: ____ Date: 09/09/91

Prime Contractor: Nielsons Inc. — Report By: H. Kuebler/WT Date: 09/05/91

Earthwork Subcontractor: Fuhs Construction — Superintendent: Bruce Berry

Superintendent: Dennis Fuhs

Earthwork in progress and/or completed since last report: Neilsons Inc. compacted B line soil cover material and processed A and C line soil cover material. Fuhs Construction stopped hauling material from old Church Rock site to South Cell.

Unexpected site conditions: Rain shower slowed testing of soil cover material.

Sampling and/or testing performed: Ten compaction tests were performed on B line for soil cover material.

Conformance of earthwork materials, operations and/or test results to project requirements: One passing test.

Person/persons notified of nonconformance to project requirements: Nielsons Inc. was notified of four failing compaction tests due to low moisture content on soil cover material on grid line A.

Nonconformance corrected: Nielsons Inc. will scarify and recompact grid line A.

Instructions or information received/from: Western Technologies informed Nielsons Inc. of test results for B will be done at 7:30 AM 09/06/91. Ed Morales approved overtime for 09/05/91 and additional technician if needed.

Tech./Eng'r time on project today: 11 hours — No. of visits today: 1

Time and date for next visit: 09/06/91

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United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 09/03 - 09/06

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/03	Sandcone	A-23	73480	58020	6959.3	TSC	95.5	15.7	86 F	CL	No
	Proctor ASTM D698A	A-38	72330	57070	6955.8	TSC	110.0	15.0	-	CL	n/a
	Gradation/ Atterberg	A-38	72330	57070	6955.8	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	B-41	72030	56940	6955.1	TSC	-	-	-	CL-ML	Yes
	Proctor ASTM D698A	B-39	72180	57080	6953.9	TSC	110.2	15.4	-	CL	n/a
	Gradation/ Atterberg	B-39	72180	57080	6953.9	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	B-37	72340	57200	6953.0	TSC	-	-	-	CL-ML	Yes
	Proctor ASTM D698A	B-35	72480	57320	6952.7	TSC	110.0	15.0	-	CL	n/a
	Gradation/ Atterberg	B-35	72480	57320	6952.7	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	B-33	72620	57460	6953.2	TSC	-	-	-	CL	Yes
	Proctor ASTM D698A	B-31	72780	57500	6954.3	TSC	111.0	15.1	-	CL	n/a
	Gradation/ Atterberg	B-31	72780	57500	6954.3	TSC	-	-	-	CL	Yes

TSC=Top of soil cover
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 09/03 - 09/06

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/04	Sandcone	A-21	73650	58100	6963.7	TSC	112.5	11.9 F	100+	CL	No
	Retest Sandcone	A-23	73480	58020	6959.3	TSC	106.7	11.2 F	96	CL	No
	Sandcone	A-24	73400	57950	6957.2	TSC	117.2	15.2	100+	CL	Yes
	Sandcone	A-25	73310	57900	6956.0	TSC	109.7	12.5 F	98	CL	No
	Sandcone	A-26	73250	57830	6956.0	TSC	117.0	13.8 F	96	CL	No
09/05	Sandcone	B-40	72110	57020	6954.4	TSC	112.9	15.2	100+	CL	Yes
	Sandcone	B-39	72100	57010	6953.9	TSC	109.2	15.3	99	CL	Yes
	Sandcone	B-38	72260	57050	6953.4	TSC	112.6	16.4	100+	CL	Yes
	Sandcone	B-37	72330	57130	6953.0	TSC	109.7	17.4 F	100+	CL	No
	Sandcone	B-36	72400	57260	6952.7	TSC	111.2	16.5	100+	CL	Yes
	Sandcone	B-35	72490	57330	6952.7	TSC	115.9	16.9	100+	CL	Yes
	Sandcone	B-33	72680	57380	6952.8	TSC	107.1	17.9 F	97	CL	No
	Sandcone	B-31	72830	57520	6954.3	TSC	108.3	16.0	98	CL	Yes
	Sandcone	B-29	72950	57720	6954.8	TSC	106.0	15.2	96+	CL	Yes
	Sandcone	B-42	71950	57880	6955.8	TSC	117.3	17.1	100+	CL	Yes

09/06 Sandcone tests are being processed, test results will be completed on 09/09/91.

TSC=Top of soil cover
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/09/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/06/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor Fuhs Construction — Superintendent Dennis Fuhs

Earthwork in progress and/or completed since last report: Nielsons Inc. compacted to grid line C for soil cover. Nielsons Inc. requested testing at 1:30 PM. WT tech informed Nielsons Inc. the results would be finished on Monday 09/09/91 due to oven drying of moisture samples.

Unexpected site conditions: none

Sampling and/or testing performed: Performed ten compaction tests. Results will be known on 09/09/9

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/09/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. _____ Date 09/17/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/09/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor Fuhs Construction — Superintendent Dennis Fuhs

Earthwork in progress and/or completed since last report: Nielsons Inc. scarified and compacted grid line A. Nielsons Inc. continued to place intermediate fill along grid line E. Fuhs Construction continued to place fill from old Church Rock site in grid line E as intermediate fill.

Unexpected site conditions: none

Sampling and/or testing performed: Fourteen compaction tests performed on soil cover material.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction test moisture contents will be completed on morning of 09/10/91.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/10/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/17/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/10/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor Fuhs Construction — Superintendent Dennis Fuhs

Earthwork in progress and/or completed since last report: Nielsons Inc. reworked A line on soil cover material and continued to place intermediate fill along E line. Fuhs Construction continued to place intermediate fill from old Chruch Rock site into grid line E.

Unexpected site conditions: none

Sampling and/or testing performed: Two compaction retests on B line and obtained samples at C line for gradation-Atterberg and proctor tests.

Conformance of earthwork materials, operations and/or test results to project requirements: The two compaction tests met job specifications.

Person/persons notified of nonconformance to project requirements: Nielsons Inc. was notified that ten of the fourteen compaction tests on A line failed to meet moisture requirement.

Nonconformance corrected: Nielsons Inc. scarified, added water and recompacted grid line A.

Instructions or information received/from: Nielsons Inc. Bob Harrah stated he would need compaction testing on A line on the morning of 09/11/91.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/11/91

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

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/17/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/11/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. blue topped E line at regraded tailing elevation. Nielsons Inc. recompacted failing areas on A line at soil cover elevation.

Unexpected site conditions: none

Sampling and/or testing performed: Five compaction tests on E line on regraded tailings surface, ten compaction retests on A line and one proctor, one gradation and one Atterberg test on E line.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests moisture contents will be done by tomorrow morning.

Person/persons notified of nonconformance to project requirements: none

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 10 hours — No. of visits today: 1

Time and date for next visit: 09/12/91

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

Joseph A Phillips
Reviewed By

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/17/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/12/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. began fine grading the regraded tailings surface from E line towards H line.

Unexpected site conditions: none

Sampling and/or testing performed: Three compaction retests on E line regraded tailings surface were performed.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests met job specifications. Nielsons Inc. was notified all test locations on grid lines A, B and C with the exception of C-29 have met job specification on soil cover*

Person/persons notified of nonconformance to project requirements: none

Nonconformance corrected: none

Instructions or information received/from: *material. Regraded tailings surface material on E line met job specification.

Tech./Eng'r time on project today: 9 hours — No. of visits today: 1

Time and date for next visit: 09/13/91

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

Joseph A. Phillips
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United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 09/06 - 09/12

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/06	Sandcone	C-29	72990	57800	6953.8	TSC	113.4	14.0 F	100+	CL	No
	Sandcone	C-30	72800	57730	6953.1	TSC	115.0	15.8	100+	CL	Yes
	Sandcone	C-32	72710	57530	6951.9	TSC	109.2	15.3	96	CL	Yes
	Sandcone	C-33	72580	57500	6951.0	TSC	113.8	15.6	100+	CL	Yes
	Sandcone	C-34	72490	57460	6951.0	TSC	109.1	15.5	96	CL	Yes
	Sandcone	C-35	72420	57390	6951.0	TSC	112.4	14.8	100+	CL	Yes
	Sandcone	C-36	72330	57330	6951.0	TSC	106.1	15.3	95	CL	Yes
	Sandcone	C-38	72200	57220	6951.0	TSC	115.6	16.4	100+	CL	Yes
	Sandcone	C-40	72050	57060	6952.9	TSC	112.5	15.1	100+	CL	Yes
	Sandcone	C-31	72760	57660	6952.3	TSC	115.1	15.6	100+	CL	Yes
09/09	Sandcone	A-41	72090	56850	6956.0	TSC	114.6	12.8 F	100+	CL	No
	Sandcone	A-40	72170	56930	6955.9	TSC	109.2	12.3 F	100+	CL	No
	Sandcone	A-39	72550	56990	6955.9	TSC	113.3	13.2 F	100+	CL	No
	Sandcone	A-38	72330	57070	6955.8	TSC	105.1	16.6	96	CL	Yes
	Sandcone	A-37	72400	57130	6955.7	TSC	110.0	15.6	100	CL	Yes
	Sandcone	A-36	72480	57200	6955.7	TSC	114.0	12.3 F	100+	CL	No
	Sandcone	A-35	72540	57250	6955.6	TSC	116.5	11.0 F	100+	CL	No
	Sandcone	A-33	72680	57380	6955.6	TSC	112.7	13.0 F	100+	CL	No
	Sandcone	A-31	72830	57510	6955.8	TSC	109.3	12.4 F	99	CL	No
	Sandcone	A-21	73650	58100	6963.7	TSC	116.0	15.5	100+	CL	Yes
	Retest Sandcone	A-23	73480	58020	6959.3	TSC	115.0	12.0 F	100+	CL	No

TSC=Top of soil cover
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 09/06 - 09/12

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/09	Retest Sandcone	A-25	73310	57900	6956.0	TSC	115.5	13.6 F	100+	CL	No
	Retest Sandcone	A-26	73250	57830	6956.0	TSC	115.5	12.0 F	100+	CL	No
	Sandcone	A-29	73000	57650	6956.0	TSC	112.8	14.6	100+	CL	Yes
09/10	Sandcone	B-33	72680	57380	6952.8	TSC	112.0	15.3	100+	CL	Yes
	Sandcone	B-37	72330	57130	6953.0	TSC	115.5	15.8	100+	CL	Yes
	Gradation/ Atterberg	Old Church Rock Site Borrow (Used as Intermediate Fill)								CL	n/a
	Gradation/ Atterberg	C-32	72710	57530	6951.9	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	C-34	72490	57460	6951.0	TSC	-	-	-	CL	Yes
	ASTM D698A Proctor	C-34	72490	57460	6951.0	TSC	113.3	15.0	-	CL	n/a
	Gradation/ Atterberg	C-36	72330	57330	6951.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	C-38	72200	57220	6951.0	TSC	-	-	-	CL	Yes
	ASTM D698A Proctor	C-38	72200	57220	6951.0	TSC	111.8	14.8	-	CL	n/a
	Gradation/ Atterberg	C-40	72050	57060	6952.9	TSC	-	-	-	CL	Yes
09/11	ASTM D698C Proctor	E-37	72150	57430	6950.0	RTS	120.8	10.8	-	SM	n/a
	Gradation/ Atterberg	E-37	72150	57430	6950.0	RTS	-	-	-	SM	n/a

TSC=Top of soil cover
RTS=Regraded tailings surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 09/06 - 09/12

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/11	Sandcone	E-29	72760	57950	6951.6	RTS	102.4	9.6	85 F	SM	No
	Sandcone	E-31	72600	57810	6950.0	RTS	104.9	7.4	87 F	SM	No
	Sandcone	E-33	72440	57670	6950.0	RTS	112.6	8.5	93	SM	Yes
	Sandcone	E-35	72290	57550	6950.0	RTS	106.6	9.7	88 F	SM	No
	Sandcone	E-37	72150	57430	6950.0	RTS	111.0	5.4	92	SM	Yes
	Retest Sandcone	A-23	73480	58020	6959.3	TSC	110.8	15.4	99	CL	Yes
	Retest Sandcone	A-25	73310	57900	6956.0	TSC	111.5	16.1	100	CL	Yes
	Retest Sandcone	A-26	73250	57830	6956.0	TSC	112.6	15.8	100+	CL	Yes
	Retest Sandcone	A-31	72830	57510	6955.6	TSC	106.5	16.5	97	CL	Yes
	Retest Sandcone	A-33	72680	57380	6955.6	TSC	114.0	16.9	100+	CL	Yes
	Retest Sandcone	A-35	72540	57250	6955.6	TSC	108.0	16.8	98	CL	Yes
	Retest Sandcone	A-36	72480	57200	6955.7	TSC	114.1	16.6	100+	CL	Yes
	Retest Sandcone	A-39	72250	56990	6955.9	TSC	109.3	16.3	100+	CL	Yes
	Retest Sandcone	A-40	72170	56930	6955.9	TSC	116.7	15.3	100+	CL	Yes
	Retest Sandcone	A-41	72090	56850	6956.0	TSC	109.6	16.9	100+	CL	Yes

TSC=Top of soil cover
RTS=Regraded tailings surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Test Summary for Week of 09/06 - 09/12

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/12	Retest Sandcone	E-29	72760	57950	6951.6	RTS	108.9	8.8	90	SM	Yes
	Retest Sandcone	E-31	72600	57810	6950.0	RTS	109.2	8.5	90	SM	Yes
	Retest Sandcone	E-35	72290	57550	6950.0	RTS	120.5	11.1	100	SM	Yes

TSC=Top of soil cover
RTS=Regraded tailings surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/17/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/13/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. compacted regraded tailings surface from E to F line.

Unexpected site conditions: none

Sampling and/or testing performed: Four compaction tests were performed.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction results will be completed by Monday morning (09/16/91) and Nielsons Inc. shall be notified of results.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/16/91

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

Joseph A. Phillips
Reviewed By

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Farmington, New Mexico 87401
(505) 327-4966

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/24/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/16/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor - — Superintendent -

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing soil cover material between C and E lines and placing soil cover between grid lines 19 and 20 in the north evaporation ponds.

Unexpected site conditions: none

Sampling and/or testing performed: One ASTM D698 proctor and one gradation/Atterberg test (G-30) and one sandcone calibration were performed. Also two gradation/Atterberg tests sampled 09/13/91 were completed.

Conformance of earthwork materials, operations and/or test results to project requirements: No compaction tests were performed.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: n/a

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/17/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/24/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/17/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor - — Superintendent -

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing soil cover material between D and E line, however no processing occurred. Nielsons Inc. was fine grading regraded tailings surface on G line.

Unexpected site conditions: none

Sampling and/or testing performed: Sample preparation for soil cover material on D line was performed.

Conformance of earthwork materials, operations and/or test results to project requirements: No compaction tests were performed.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/18/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Client: United Nuclear Corporation — Job No.: 3141K062

Project: 1991 Reclamation Testing — Invoice No.: 31410844

Location: Church Rock, New Mexico — Report No.: ____ Date: 09/24/91

Prime Contractor: Nielsons Inc. — Report By: H. Kuebler/WT Date: 09/18/91

Earthwork Subcontractor: - — Superintendent: Bruce Berry

Superintendent: -

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing soil cover material between E and F, however, material was not being processed.

Unexpected site conditions: none

Sampling and/or testing performed: Five compaction tests and one gradation/Atterberg tests was performed.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests on regraded tailings surface on G met job specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Ed Morales requested compaction testing on soil cover material that will be placed in two locations of central cell. Testing shall be done in accordance to Western Technologies contract for soil cover material.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/19/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/24/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/19/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor - — Superintendent -

Earthwork in progress and/or completed since last report: Nielsons Inc. grubbed vegetation in northeast section of central cell and began soil placement. Nielsons Inc. continued to place soil cover material, however, no processing accured.

Unexpected site conditions: none

Sampling and/or testing performed: Two compaction tests on regraded tailings surface and one proctor point and one gradation/Atterbert test were performed.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests on regraded tailings surface met project requirements.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/20/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410844

Project 1991 Reclamation Testing — Report No. ____ Date 09/24/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/20/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor - — Superintendent -

Earthwork in progress and/or completed since last report: Nielsons Inc. was placing soil cover material in northeast section of central cell. No processing of soil has occurred.

Unexpected site conditions: none

Sampling and/or testing performed: One proctor, one gradation/Atterberg test was performed.

Conformance of earthwork materials, operations and/or test results to project requirements: No compaction tests were performed.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/23/91

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

Joseph A. Phillips
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United Nuclear Corporation
INTERIM RECLAMATION - 1991

Test Summary for Week of 09/13 - 09/20

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/13	Sandcone	F-30	72610	57950	6951.1	RTS/SC	108.1	12.3	99	CL	Yes
	Sandcone	F-32	72450	57820	6950.0	RTS/SC	106.3	9.7	97	CL	Yes
	Sandcone	F-34	72300	57680	6950.0	RTS/SC	103.5	9.0	95	CL	Yes
	Sandcone	F-38	72030	57450	6950.0	RTS/SC	116.7	6.7	100	CL	Yes
09/13	Proctor ASTM D698A	F-30	72610	57950	6951.1	RTS/SC	109.5	14.8	-	CL	n/a
	Gradation/ Atterberg	F-30	72610	57950	6951.1	RTS/SC	-	-	-	CL	n/a
	Gradation/ Atterberg	F-34	72300	57680	6950.0	RTS/SC	-	-	-	CL	n/a
09/16	Sandcone Calibration										
	Proctor ASTM D698A	G-30	72550	58050	6950.6	RTS/SC	111.7	15.4	-	CL	n/a
	Gradation/ Atterberg	G-30	72550	58050	6950.6	RTS/SC	-	-	-	CL	n/a
*09/17	Gradation/ Atterberg	D-40	71980	57170	6951.4	TSC/SC	-	-	-	CL	Yes
	Proctor ASTM D698A	D-40	71980	57170	6951.4	TSC/SC	110.5	15.6	-	CL	n/a
	Gradation/ Atterberg	D-37	72220	57350	6951.0	TSC/SC	-	-	-	CL	Yes
	Gradation/ Atterberg	D-35	72350	57470	6951.0	TSC/SC	-	-	-	CL	Yes
	Gradation/ Atterberg	D-33	72510	57600	6951.0	TSC/SC	-	-	-	CL	Yes

*Summary revised 10/01/91 to include test results not previously reported.
TSC=Top of soil cover
RTS=Regraded Tailings Surface
SC=South Cell
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
INTERIM RECLAMATION - 1991

Test Summary for Week of 09/13 - 09/20

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
*09/17	Gradation/ Atterberg	D-31	72660	57740	6951.4	TSC/SC	-	-	-	CL	Yes
	Proctor ASTM D698A	D-31	72660	57740	6951.4	TSC/SC	110.5	15.8	-	CL	n/a
09/18	Gradation/ Atterberg	G-35	72170	57640	6950.0	RTS/SC	-	-	-	SC	n/a
	Sandcone	G-35	72170	57640	6950.0	RTS/SC	110.6	6.9	99	SC	Yes
	Sandcone	G-29	72620	58100	6951.8	RTS/SC	112.5	9.4	100	CL	Yes
	Sandcone	G-31	72460	57960	6950.0	RTS/SC	111.1	11.9	100	CL	Yes
	Sandcone	G-32	72380	57890	6950.0	RTS/SC	109.1	9.4	98	CL	Yes
	Sandcone	G-33	72310	57820	6950.0	RTS/SC	116.0	8.4	100	CL	Yes
09/19	Sandcone	H-29	72570	58200	6952.6	RTS/SC	116.5	5.8	99	SC-SM	Yes
	Sandcone	H-31	72410	58100	6950.6	RTS/SC	105.8	10.1	90	SC-SM	Yes
	Proctor (1 point) ASTM D698C	H-31	72410	58100	6950.6	RTS/SC	118.0	12.4	-	SC-SM	n/a
	Gradation/ Atterberg	H-31	72410	58100	6950.6	RTS/SC	-	-	-	SC-SM	n/a
09/20	Proctor ASTM D698A	E-20	73350	58650	6963.4	TSC/CC	111.1	15.8	-	CL	n/a
	Gradation/ Atterberg	E-20	73350	58650	6963.4	TSC/CC	-	-	-	CL	Yes

*Summary revised 10/01/91 to include test results not previously reported.
CC=Central Cell
SC=South Cell
TSC=Top of soil cover
RTS=Regraded Tailings Surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Client: United Nuclear Corporation — Job No.: 3141K062

Project: 1991 Reclamation Testing — Invoice No.: 31410925

Location: Church Rock, New Mexico — Report No. — Date: 10/02/91

Prime Contractor: Nielsons Inc. — Report By: H. Kuebler/WT — Date: 09/23/91

Earthwork Subcontractor — Superintendent: Bruce Berry

Superintendent

Earthwork in progress and/or completed since last report: Nielsons Inc. placed fill in northeast section o central cell. No compaction was performed.

Unexpected site conditions: none

Sampling and/or testing performed: Performed sampling for one gradation/Atterberg test (E line) and one proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/24/91

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

Joseph A Phillips
Reviewed By

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410925

Project 1991 Reclamation Testing — Report No. ____ Date 10/02/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/24/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. processed soil cover material north of evaporation ponds and regraded tailings surface between I-33 and I-34. No compaction effort occurred in either area, however, Nielsons stated both areas will need compaction tests tomorrow.

Unexpected site conditions: none

Sampling and/or testing performed: Two gradation/Atterberg tests and one unit weight on borrow pit #2 fill materials.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Ed Morales requested unit weight and gradation/Atterberg tests be performed on old Church Rock fill and gradation/Atterberg test on mill site fill, both being placed in borrow pit #2.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 09/25/91

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

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410925

Project 1991 Reclamation Testing — Report No. ____ Date 10/02/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/25/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. compacted soil cover material along grid line 20, north of evaporation ponds and between grid lines D and E. Regraded tailings surface between I-33 and I-34 was also compacted.

Unexpected site conditions: none

Sampling and/or testing performed: Twenty one compaction tests, one gradation/Atterberg test and a one point proctor were performed.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Compaction test results will be completed on 09/26/91.

Tech./Eng'r time on project today: 10 hours — No. of visits today: 1

Time and date for next visit: 09/26/91

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

Joseph A. Phillips
Reviewed By

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410925

Project 1991 Reclamation Testing — Report No. _____ Date 10/02/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/26/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor _____ — Superintendent _____

Earthwork in progress and/or completed since last report: Nielsons Inc. processed and compacted E to F line on soil cover elevation.

Unexpected site conditions: none

Sampling and/or testing performed: Twelve compaction tests were performed.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction results will be known tomorrow (09/27/91).

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 12 hours — No. of visits today: 1

Time and date for next visit: 09/27/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410925

Project 1991 Reclamation Testing — Report No. _____ Date 10/02/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/27/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor _____ — Superintendent _____

Earthwork in progress and/or completed since last report: Nielsons Inc. processed and compacted between F and G lines and processed between G and H lines.

Unexpected site conditions: none

Sampling and/or testing performed: Performed eleven compaction tests and four retests.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: Bruce Berry of Nielsons Inc. was notified of four locations that had failed on E line soil cover material.

Nonconformance corrected: n/a

Instructions or information received/from: Test results will be completed on Monday (09/30/91).

Tech./Eng'r time on project today: 9 hours — No. of visits today: 1

Time and date for next visit: 09/30/91

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

Joseph A. Phillips
Reviewed By

United Nuclear Corporation
INTERIM RECLAMATION - 1991

Test Summary for Week of 09/23 - 09/27

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/23	Gradation/ Atterberg	E-33	72440	57670	6951.0	TSC/SC	-	-	-	CL	Yes
	Proctor ASTM D698A	E-33	72440	57670	6951.0	TSC/SC	111.3	15.1	-	CL	n/a
09/24	Gradation/ Atterberg	Mill site fill for Borrow Pit #2					-	-	-	CL	n/a
	Gradation Atterberg	Old Church Rock site for Borrow Pit #2					-	-	-	CL	n/a
	Unit Weight									CL	n/a
09/25	Sandcone	I-34.5	72090	57900	6960.0	RTS/SC	103.6	11.7	91	CL	Yes
	Sandcone	I-34	72110	57910	6960.0	RTS/SC	113.2	12.6	100	CL	Yes
	Sandcone	B-20+65	73620	58250	6964.2	TSC/CC	111.3	16.4	100	CL	Yes
	Sandcone	C-20+65	73550	58250	6963.9	TSC/CC	107.2	16.8	97	CL	Yes
	Sandcone	D-20+65	73500	58410	6963.7	TSC/CC	106.9	16.7	96	CL	Yes
	Sandcone	E-20+65	73410	58500	6963.4	TSC/CC	106.8	16.1	96	CL	Yes
	Sandcone	F-20+65	73350	58550	6963.1	TSC/CC	110.7	16.7	100	CL	Yes
	Sandcone	G-20+30	73340	58650	6962.9	TSC/CC	116.4	15.9	100	CL	Yes
	Sandcone	H-20+30	73280	58720	6962.6	TSC/CC	111.6	15.9	100	CL	Yes
	Sandcone	D-34	72580	57670	6951.0	TSC/SC	112.7	16.3	100	CL	Yes
	Sandcone	D-35	72350	57470	6951.0	TSC/SC	111.5	16.0	100	CL	Yes
	Sandcone	D-36	72280	57400	6951.0	TSC/SC	108.0	16.3	98	CL	Yes
	Sandcone	D-37	72220	57350	6951.0	TSC/SC	113.2	15.7	100	CL	Yes
	Sandcone	D-31	72660	57740	6951.4	TSC/SC	114.5	16.2	100	CL	Yes

CC=Central Cell
SC=South Cell
TSC=Top of soil cover
RTS=Top of regraded tailings surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

Test Summary for Week of 09/23 - 09/27*

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/25	Sandcone	D-38	72150	57280	6951.0	TSC/SC	111.5	17.0	100	CL	Yes
	Sandcone	D-29	72850	57890	6952.0	TSC/SC	107.9	16.1	98	CL	Yes
	Sandcone	D-30	72750	57810	6952.2	TSC/SC	111.1	15.8	100	CL	Yes
	Sandcone	D-32	72570	57670	6951.0	TSC/SC	108.7	17.5	98	CL	Yes
	Sandcone	D-33	72510	57600	6951.0	TSC/SC	113.4	16.6	100	CL	Yes
	Sandcone	D-39	72070	57220	6951.0	TSC/SC	117.5	16.1	100	CL	Yes
	Sandcone	D-40	71980	57170	6951.4	TSC/SC	109.5	15.8	99	CL	Yes
	Gradation/ Atterberg	I-34	72110	57910	6960.0	RTS/SC	-	-	-	SM-SC	n/a
	Proctor (1 point) ASTM D698C	I-34	72110	57910	6960.0	RTS/SC	113.3	14.8	-	SM-SC	n/a
	*Gradation/ Atterberg	H-20	73280	58720	6962.6	TSC/CC	-	-	-	CL	Yes
	*Gradation/ Atterberg	B-20	73620	58250	6964.2	TSC/CC	-	-	-	CL-ML	Yes
	*Gradation/ Atterberg	F-20	73350	58550	6963.1	TSC/CC	-	-	-	CL	Yes
	*Gradation/ Atterberg	E-20	73410	58500	6963.4	TSC/CC	-	-	-	CL	Yes
09/26	Sandcone	E-29	72760	57950	6952.6	TSC/SC	111.8	15.2	100	CL	Yes
	Sandcone	E-30	72690	57890	6951.5	TSC/SC	112.6	15.4	100	CL	Yes
	*Gradation/ Atterberg	E-30	72690	57890	6951.5	TSC/SC	-	-	-	CL	Yes
	Sandcone	E-31	72600	57810	6951.0	TSC/SC	111.6	17.1	100	CL	Yes
	Sandcone	E-32	72530	57750	6951.0	TSC/SC	109.2	16.7	98	CL	Yes

*Summary revised 11/07/91 to include test results.
CC=Central Cell
SC=South Cell
TSC=Top of soil cover
RTS=Top of regraded tailings surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
INTERIM RECLAMATION - 1991

Test Summary for Week of 09/23 - 09/27*

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/26	Sandcone	E-33	72440	57670	6951.0	TSC/SC	104.9	18.6 F	94 F	CL	No
	Sandcone	E-34	72350	57600	6951.0	TSC/SC	110.1	15.7	99	CL	Yes
	Sandcone	E-35	72290	59550	6951.0	TSC/SC	105.2	15.5	95	CL	Yes
	Sandcone	E-36	72210	57480	6951.0	TSC/SC	107.7	18.2 F	97	CL	No
	*Gradation/ Atterberg	E-36	72210	57480	6951.0	TSC/SC	-	-	-	CL-ML	Yes
	Sandcone	E-37	72150	57430	6951.0	TSC/SC	107.1	18.3 F	96	CL	No
	Sandcone	E-38	72090	57370	6951.0	TSC/SC	103.3	16.9	93	CL	No
	*Gradation/ Atterberg	E-38	72090	57370	6951.0	TSC/SC	-	-	-	CL	Yes
	Sandcone	E-39	72000	57250	6951.0	TSC/SC	109.7	17.0	99	CL	Yes
	Sandcone	E-40	71850	57220	6951.0	TSC/SC	113.1	15.3	100	CL	Yes
09/27	*Sandcone	F-30	72610	57950	6952.1	TSC/SC	108.5	16.0	96	CL	Yes
	*Sandcone	F-35	72220	57620	6951.0	TSC/SC	107.8	18.7 F	95	CL	No
	*Sandcone	F-34	72380	57680	6951.0	TSC/SC	111.6	16.9 F	98	CL	No
	*Sandcone	F-33	72330	57750	6951.0	TSC/SC	104.5	15.8	92 F	CL	No
	*Sandcone	F-32	72450	57820	6951.0	TSC/SC	112.5	15.5	99	CL	Yes
	*Sandcone	F-31	72610	57820	6951.0	TSC/SC	106.3	17.0 F	94 F	CL	No
	*Sandcone	F-40	71870	57270	6954.3	TSC/SC	99.5	17.0 F	88 F	CL	No
	*Sandcone	F-39	71940	57370	6951.0	TSC/SC	103.4	19.4 F	91 F	CL	No
	*Sandcone	F-38	72030	57450	6951.0	TSC/SC	103.2	20.7 F	91 F	CL	No
	*Sandcone	F-37	72080	57500	6951.0	TSC/SC	103.0	18.5 F	91 F	CL	No
	*Sandcone	F-36	72150	57560	6951.0	TSC/SC	115.2	17.6 F	100	CL	No

*Summary revised 11/07/91 to include test results.
SC=South Cell
TSC=Top of soil cover
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
INTERIM RECLAMATION - 1991

Test Summary for Week of 09/23 - 09/27*

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/27	*Retest Sandcone	E-33	72440	57670	6951.0	TSC/SC	106.7	15.3	96	CL	Yes
	*Retest Sandcone	E-36	72210	57480	6951.0	TSC/SC	108.9	15.6	98	CL	Yes
	*Retest Sandcone	E-37	72150	57430	6951.0	TSC/SC	107.0	15.1	96	CL	Yes
	*Retest Sandcone	E-38	72090	57370	6951.0	TSC/SC	107.8	15.7	97	CL	Yes

*Summary revised 11/07/91 to include test results.
SC=South Cell
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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410925

Project 1991 Reclamation Testing — Report No. ____ Date 10/25/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 09/30/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. placed fill in NE section of Central Cell.

Unexpected site conditions: none

Sampling and/or testing performed: Nine sandcone density retests were performed. Material was sampled for 3 gradation and atterberg tests and one ASTM D698 proctor.

Conformance of earthwork materials, operations and/or test results to project requirements: Samples from this day conformed to project requirements.

Person/persons notified of nonconformance to project requirements: Nielsons Inc. was notified of previous failing compaction tests on "F" line due to high moisture contents.

Nonconformance corrected: Nielsons Inc.

Instructions or information received/from: Ed Morales/UNC approved another WT technician on site. Nielsons Inc. Bruce Berry had stated Nielsons Inc. would complete project at end of this week (10/04/91).

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 7:00 a.m. 10/01/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410925

Project 1991 Reclamation Testing — Report No. ____ Date 11/01/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 10/01/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. compacted the NE section of central cell and grid line G on south cell.

Unexpected site conditions: none

Sampling and/or testing performed: Performed 26 field density tests, three proctors, and five gradation/Atterberg tests.

Conformance of earthwork materials, operations and/or test results to project requirements: G. line met job specifications.

Person/persons notified of nonconformance to project requirements: NE section of central cell failed.

Nonconformance corrected: Nielsons Inc. reworked failing areas.

Instructions or information received/from: none

Tech./Eng'r time on project today: Lead tech-11.5 hours, Add'l tech-11.5 No. of visits today: 1

Time and date for next visit: 10/02/91

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

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410925

Project 1991 Reclamation Testing — Report No. ____ Date 10/25/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 10/02/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. fine graded "H" line on south cell.

Unexpected site conditions: none

Sampling and/or testing performed: Fifteen compaction tests and a one point proctor were performed today.

Conformance of earthwork materials, operations and/or test results to project requirements: Grid line H met job specifications.

Person/persons notified of nonconformance to project requirements: Nielsons Inc. was notified of areas in northeast section of central cell which failed due to high moisture.

Nonconformance corrected: n/a

Instructions or information received/from: WT will retest failing areas on 10/03/91.

Tech./Eng'r time on project today: S. G./11 hrs. H.K./11 hrs. — No. of visits today: 1

Time and date for next visit: 10/03/91

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FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410925

Project 1991 Reclamation Testing — Report No. ____ Date 10/25/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 10/03/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nieslons Inc. fine graded the south cell site, and shaped contours at line 29 to meet specifications.

Unexpected site conditions: none

Sampling and/or testing performed: Sixteen compaction tests, one sandcone calibration, one gradation/atterberg test.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests on grid line "29" met specifications.

Person/persons notified of nonconformance to project requirements: Nielsons Inc. was notified of failing areas.

Nonconformance corrected: n/a

Instructions or information received/from: Bruce Berry/Nielsons Inc. was informed of failing tests on Haul Road.

Tech./Eng'r time on project today: S. G./10 hrs. H. K./11 hrs. — No. of visits today: 1

Time and date for next visit: ____

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

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United Nuclear Corporation
INTERIM RECLAMATION - 1991

Test Summary for Week of 09/30 - 10/03

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/30	Retest Sandcone	F-40	71870	57270	6954.3	TSC/SC	112.4	14.9	99	CL	Yes
	Retest Sandcone	F-39	71940	57370	6951.0	TSC/SC	107.5	13.3	95	CL	Yes
	Retest Sandcone	F-38	72080	57500	6951.0	TSC/SC	108.3	15.7	95	CL	Yes
	Retest Sandcone	F-37	72080	57500	6951.0	TSC/SC	114.2	14.8	100	CL	Yes
	Retest Sandcone	F-36	72150	57560	6951.0	TSC/SC	115.2	15.1	100	CL	Yes
	Retest Sandcone	F-35	72220	57620	6951.0	TSC/SC	116.5	14.9	100	CL	Yes
	Retest Sandcone	F-34	72380	57680	6951.0	TSC/SC	112.6	15.8	99	CL	Yes
	Proctor ASTM D698A	F-34	72380	57680	6951.0	TSC/SC	113.5	14.0	-	CL	n/a
	Gradation/ Atterberg	F-34	72380	57680	6951.0	TSC/SC	-	-	-	CL	Yes
	Retest Sandcone	F-33	72330	57750	6951.0	TSC/SC	117.6	14.9	100	CL	Yes
	Retest Sandcone	F-31	72610	57820	6951.0	TSC/SC	114.2	15.1	100	CL	Yes
	Gradation/ Atterberg	F-31	72610	57820	6951.0	TSC/SC	-	-	-	CL	Yes
	Gradation/ Atterberg	F-37	72030	57440	6951.0	TSC/SC	-	-	-	CL	Yes
10/01	Sandcone	G-29	72620	58100	6952.8	TSC/SC	113.2	14.8	100	CL-ML	Yes
	Sandcone	G-30	72550	58050	6951.6	TSC/SC	109.1	15.2	96	CL-ML	Yes

TSC=Top of soil cover
SC=South Cell
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

Test Summary for Week of 09/30 - 10/03

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
10/01	Proctor ASTM D698A	G-30	72550	58050	6951.6	TSC/SC	113.4	14.0	-	CL-ML	n/a
	Gradation/ Atterberg	G-30	72550	58050	6951.6	TSC/SC	-	-	-	CL-ML	Yes
	Sandcone	G-31	72460	57960	6951.0	TSC/SC	112.4	15.6	99	CL	Yes
	Sandcone	G-32	72380	57890	6951.0	TSC/SC	112.6	14.7	99	CL	Yes
	Gradation/ Atterberg	G-32	72380	57890	6951.0	TSC/SC	-	-	-	CL-ML	
	Sandcone	G-33	72310	57820	6951.0	TSC/SC	113.4	14.2	100	CL-ML	Yes
	Sandcone	G-34	72300	57750	6951.0	TSC/SC	118.2	14.0	100+	CL-ML	Yes
	Gradation/ Atterberg	G-35	72170	57640	6951.0	TSC/SC	-	-	-	CL	
	Sandcone	Q-7	73700	60250	6980.7	TSC/CC	111.7	15.1	99	CL	Yes
	Proctor ASTM D698A	Q-7	73700	60250	6980.7	TSC/CC	112.3	13.8	-	CL	n/a
	Gradation/ Atterberg	Q-7	73700	60250	6980.7	TSC/CC	-	-	-	CL	Yes
	Sandcone	Q-6.5	73750	60250	6980.7	TSC/CC	113.1	13.0 F	100	CL	No
	Sandcone	Q-6	73780	60270	6980.7	TSC/CC	101.5	10.1 F	90 F	CL	No
	Sandcone	Q-5	73840	60380	6980.6	TSC/CC	105.4	16.6 F	94 F	CL	No
	Sandcone	Q-4	73930	60450	6980.8	TSC/CC	100.7	10.8 F	90 F	CL	No
	Sandcone	R-7	73660	60330	6981.0	TSC/CC	117.4	3.6 F	100	CL-ML	No
	Sandcone	R-6	73730	60400	6981.0	TSC/CC	112.2	15.7	100	CL-ML	Yes
	Sandcone	R-5	73730	60450	6981.0	TSC/CC	108.1	14.8	96	CL-ML	Yes
	Sandcone	P-3	74080	60450	6980.4	TSC/CC	108.9	13.9	97	CL-ML	Yes

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Elevations are given in feet above mean sea level

United Nuclear Corp. ion
INTERIM RECLAMATION - 1991

Test Summary for Week of 09/30 - 10/03

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
10/01	Sandcone	P-4	74000	60360	6980.4	TSC/CC	104.9	12.0	93 F	CL-ML	No
	Sandcone	P-5	73930	60300	6979.9	TSC/CC	105.1	14.7	94 F	CL-ML	No
	Sandcone	P-6	73830	60250	6980.3	TSC/CC	108.5	14.2	97	CL-ML	Yes
	Sandcone	P-7	73770	60190	6980.3	TSC/CC	110.0	14.2	98	CL-ML	Yes
	Sandcone	N-6.75	73930	60150	6979.5	TSC/CC	104.1	17.3 F	92 F	CL-ML	No
	Proctor ASTM D698A	N-6.75	73930	60150	6979.5	TSC/SC	113.8	13.6	-	CL-ML	n/a
	Gradation/ Atterberg	N-6.75	73930	60150	6979.5	TSC/CC	-	-	-	CL-ML	Yes
	Sandcone	N-5.75	74000	60220	6979.0	TSC/CC	109.2	13.1 F	96	CL-ML	No
	Sandcone	O-17	73830	60100	6980.5	TSC/CC	105.6	13.5 F	93 F	CL-ML	No
	Sandcone	O-16	73910	60170	6979.9	TSC/CC	109.5	11.7 F	96	CL-ML	No
	Sandcone	O-15	73990	60220	6979.3	TSC/CC	112.4	12.3 F	99	CL-ML	No
	Sandcone	O-14	74060	60300	6979.7	TSC/CC	97.1	11.9	85 F	CL-ML	No
	Sandcone	O-3	72020	60570	6980.1	TSC/CC	111.1	14.0	98	CL-ML	Yes
10/02	Sandcone	H-31	72410	58100	6951.0	TSC/SC	107.8	14.8	95	CL-ML	Yes
	Sandcone	H-30	72430	58110	6952.3	TSC/SC	108.1	14.4	95	CL-ML	Yes
	Proctor (1 Point) ASTM D698	H-30	72430	58110	6952.3	TSC/SC	113.4	14.0	-	CL-ML	n/a
	Retest Sandcone	R-7	73660	60330	6981.0	TSC/CC	109.3	16.8 F	97	CL	No
	Gradation/ Atterberg	R-7	73660	60330	6981.0	TSC/CC	-	-	-	CL	
	Retest Sandcone	Q-6.5	73750	60250	6980.7	TSC/CC	115.6	15.3	100	CL	Yes

CC=Central Cell
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United Nuclear Corporation
INTERIM RECLAMATION - 1991

Test Summary for Week of 09/30 - 10/03

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
10/02	Retest Sandcone	N-5.75	74000	60220	6979.0	TSC/CC	111.2	14.5	98	CL-ML	Yes
10/03	Sandcone Calibration										
	Retest Sandcone	O-6	73910	60170	6979.5	TSC/CC	116.8	14.4	100	CL-ML	Yes
	Proctor (1 Point) ASTM D698A	O-6	73910	60170	6979.5	TSC/CC	112.3	12.1	-	CL-ML	n/a
	Retest Sandcone	O-7	73830	60100	6980.3	TSC/CC	112.0	15.7	98	CL	Yes
	Gradation/ Atterberg	O-7	73830	60100	6980.3	TSC/CC	-	-	-	CL	Yes
	Retest Sandcone	Q-5	73840	60380	6980.6	TSC/CC	117.6	14.6	100	CL	Yes
	Gradation/ Atterberg	Q-6	73780	60270	6980.7	TSC/CC	-	-	-	CL-ML	Yes
	Retest Sandcone	R-7	73660	60330	6981.0	TSC/CC	115.7	14.4	100	CL	Yes
	Sandcone	C-29	72990	57800	6953.8	TSC/SC	107.2	14.8	95	CL-ML	Yes
	Sandcone	F-29	72700	58030	6953.0	TSC/SC	111.7	14.2	99	CL	Yes
	Gradation/ Atterberg	F-29	72700	58030	6953.0	TSC/SC	-	-	-	CL	
	Sandcone	H-29	72570	58200	6953.6	TSC/SC	117.7	14.0	100	CL-ML	Yes
	Gradation/ Atterberg	H-29	72570	58200	6953.6	TSC/SC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	H-31	72410	58100	6951.0	TSC/SC	-	-	-	ML	Yes

CC=Central Cell
SC=South Cell
TSC=Top of soil cover
HRS=Haul Road Surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
INTERIM RECLAMATION - 1991

Test Summary for Week of 09/30 - 10/03

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
10/03	Sandcone	Haul Road-Sta.	32+00		6955.0	HRS	106.5	7.1	94 F	CL	No
	Sandcone	Haul Road-Sta.	34+00		6955.0	HRS	100.1	8.6	89 F	CL	No
	Sandcone	Haul Road-Sta.	36+00		6955.0	HRS	104.1	7.2	92 F	CL	No
	Sandcone	Haul Road-Sta.	38+00		6955.0	HRS	107.1	9.3	95	CL	Yes
	Sandcone	Haul Road-Sta.	22+00		6955.0	HRS	108.9	7.4	96	CL	Yes
	Sandcone	Haul Road-Sta.	24+00		6955.0	HRS	106.6	7.5	94	CL	No
	Sandcone	Haul Road-Sta.	26+00		6955.0	HRS	107.1	4.2	95	CL	Yes
	Sandcone	Haul Road-Sta.	28+00		6955.0	HRS	107.3	7.2	95	CL	Yes
	Sandcone	Haul Road-Sta.	30+00		6955.0	HRS	107.0	6.7	95	CL	Yes

HRS=Haul Road Surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410973

Project 1991 Reclamation Testing — Report No. ____ Date 11/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 10/07/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. reworked Haul Road and NE section of central cell.

Unexpected site conditions: none

Sampling and/or testing performed: Compaction tests on Haul Road, I line of South Cell and on NE section of central cell.

Conformance of earthwork materials, operations and/or test results to project requirements: Compaction tests today met specifications.

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 10/08/91

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

Joseph A Phillips
Reviewed By

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410973

Project 1991 Reclamation Testing — Report No. ____ Date 11/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 10/08/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. decontaminated equipment by washing with water.

Unexpected site conditions: none

Sampling and/or testing performed: Western Technologies worked on laboratory testing, gradation and Atterberg testing.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 10/09/91

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

Joseph A. Phillips
Reviewed By

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410973

Project 1991 Reclamation Testing — Report No. ____ Date 11/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 10/09/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: Nielsons Inc. completed cleaning equipment. This was Nielsons last day on site.

Unexpected site conditions: none

Sampling and/or testing performed: Western Technologies continued on site laboratory testing.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: none

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 10/10/91

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

Joseph A. Phillips
Reviewed By

WESTERN TECHNOLOGIES INC.

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

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410973

Project 1991 Reclamation Testing — Report No. _____ Date 11/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 10/10/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor _____ Superintendent _____

Earthwork in progress and/or completed since last report: No work in progress.

Unexpected site conditions: none

Sampling and/or testing performed: Laboratory work being completed.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Ed Morales requested permeabilities be performed on three grid points on south cell.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: 10/11/91

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

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(505) 327-4966

FIELD REPORT

REVIEW OF EARTHWORK CONSTRUCTION

Job No. 3141K062

Client United Nuclear Corporation — Invoice No. 31410973

Project 1991 Reclamation Testing — Report No. ____ Date 11/06/91

Location Church Rock, New Mexico — Report By H. Kuebler/WT Date 10/11/91

Prime Contractor Nielsons Inc. — Superintendent Bruce Berry

Earthwork Subcontractor ____ — Superintendent ____

Earthwork in progress and/or completed since last report: No work in progress.

Unexpected site conditions: none

Sampling and/or testing performed: On site laboratory work completed.

Conformance of earthwork materials, operations and/or test results to project requirements: n/a

Person/persons notified of nonconformance to project requirements: n/a

Nonconformance corrected: n/a

Instructions or information received/from: Western Technologies completed on-site work, today was last day on site.

Tech./Eng'r time on project today: 8 hours — No. of visits today: 1

Time and date for next visit: n/a

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

Joseph A. Phillips
Reviewed By

United Nuclear Corp ion
INTERIM RECLAMATION - 1991

Test Summary for Week of 10/07 - 10/11 Page 1 of 1

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
10/07	Sandcone	P/Q-7	73730	60230	6980.7	TSC/CC	115.2	14.2	100	CL-ML	Yes
	Sandcone	Q-4	73950	60430	6980.8	TSC/CC	113.7	14.4	100	CL-ML	Yes
	Sandcone	P-6	73850	60250	6980.3	TSC/CC	110.4	13.9	98	CL-ML	Yes
	Sandcone	I-33.5	72150	57950	6961.0	TSC/SC	108.1	14.6	95	CL-ML	Yes
	Sandcone	I-34	72110	57910	6961.0	TSC/SC	110.0	15.9	97	CL-ML	Yes
	Proctor (1 Point) ASTM D698A	I-34	72110	57910	6961.0	TSC/SC	113.3	14.0	-	CL-ML	n/a
	Retest Sandcone	Haul Road-Sta. 32+00			6955.0	HRS	110.1	11.7	97	CL	Yes
	Retest Sandcone	Haul Road-Sta. 34+00			6955.0	HRS	109.2	10.4	97	CL	Yes
	Retest Sandcone	Haul Road-Sta. 36+00			6955.0	HRS	109.5	9.1	97	CL	Yes
	Retest Sandcone	Haul Road-Sta. 24+00			6955.0	HRS	108.7	8.9	96	CL	Yes
	Retest Sandcone	Haul Road-Sta. 40+00			6955.0	HRS	113.9	8.4	100	CL	Yes
	Retest Sandcone	Haul Road-Sta. 42+00			6955.0	HRS	110.8	9.2	98	CL	Yes

CC=Central Cell
SC=South Cell
TSC=Top of soil cover
HRS=Haul Road Surface
F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

APPENDIX B

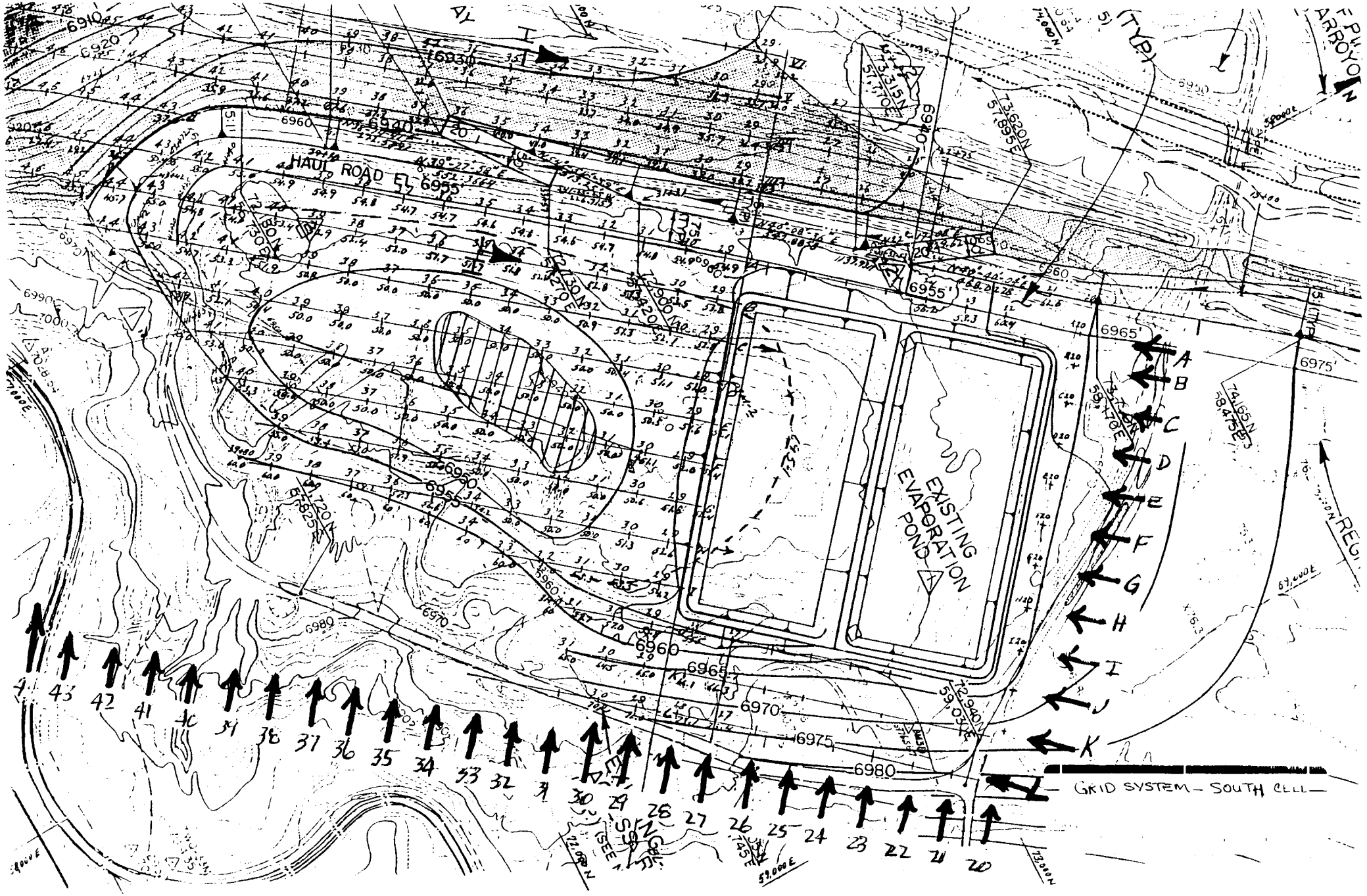
APPENDIX B

GEOTECHNICAL TEST RESULTS
HAUL ROAD CONSTRUCTION

- Western Technologies, Inc.'s Summary
- Grid Map
- Sand Cone Field Density Tests
- Gradation/Atterberg Tests
- Proctor Tests

HAUL ROAD SUMMARY

The haul road construction required fill material in some areas and cuts in others. The material from the cut areas was identified as haul road embankment and it was used in the portions of the haul road requiring fill. This fill was moved with scrapers and was compacted with a sheepfoot compactor and loaded scrapers. The material generally encountered was silty clay. Twenty seven sandcone density tests, one gradation/Atterberg test and one proctor test were performed.


HAUL ROAD EL 6955
EXISTING EVAPORATION POND
GRID SYSTEM – SOUTH CELL
A
B
C
D
E
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G
H
I
J
K
L
6955'
6965'
6975'
6960
6965
6970
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6955
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6980
6990
7000
73,315N
57,770E
73,620N
57,895E
72,180N
72,730N
72,900N
72,940N
59,030E
74,165N
58,475E
73,000N
59,000E
72,000N
(TYP)
ARROYO
REG

United Nuclear Corporation
HAUL ROAD INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests

DATE	TYPE OF TEST	GRID N E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/08	Sandcone	Sta. 27+00 L. of CL	6954	Haul Rd.	110.4	10.2	98	CL	Yes
	Sandcone	Sta. 25+00 on CL	6954	Haul Rd.	111.6	12.7	99	CL	Yes
	Sandcone	Sta. 23+00 R. of CL	6954	Haul Rd.	110.4	13.2	98	CL	Yes
08/13	Sandcone	Sta. 29+00, 10'R of CL	6954.0	Haul Rd.	108.1	15.8	96 P	CL	Yes
	Sandcone	Sta. 31+00 on CL	6954.0	Haul Rd.	115.2	13.3	100 P	CL	Yes
	Sandcone	Sta. 33+00, 10'R of CL	6954.0	Haul Rd.	113.5	13.8	100 P	CL	Yes
	Sandcone	Sta. 35+00, 10'L of CL	6954.0	Haul Rd.	112.8	12.8	100 P	CL	Yes
08/22	Sandcone	Sta. 37+00, CL	6954.0	Haul Rd.	104.9	8.6	93 F	CL	No
	Sandcone	Sta. 39+00, 5'L of CL	6954.0	Haul Rd.	102.5	10.4	91 F	CL	No
	Sandcone	Sta. 41+00, CL	6954.0	Haul Rd.	108.5	13.6	96 P	CL	Yes
08/23	Retest Sandcone	Sta. 37+00, CL	6954.0	Haul Rd.	109.0	14.9	96 P	CL	Yes
	Retest Sandcone	Sta. 39+00, 5'L of CL	6954.0	Haul Rd.	109.9	13.4	97 P	CL	Yes
10/03	Sandcone	Haul Road-Sta. 32+00	6955.0	Haul Rd.	106.5	7.1	94 F	CL	No
	Sandcone	Haul Road-Sta. 34+00	6955.0	Haul Rd.	100.1	8.6	89 F	CL	No
	Sandcone	Haul Road-Sta. 36+00	6955.0	Haul Rd.	104.1	7.2	92 F	CL	No
	Sandcone	Haul Road-Sta. 38+00	6955.0	Haul Rd.	107.1	9.3	95	CL	Yes
	Sandcone	Haul Road-Sta. 22+00	6955.0	Haul Rd.	108.9	7.4	96	CL	Yes
	Sandcone	Haul Road-Sta. 24+00	6955.0	Haul Rd.	106.6	7.5	94	CL	No
	Sandcone	Haul Road-Sta. 26+00	6955.0	Haul Rd.	107.1	4.2	95	CL	Yes
	Sandcone	Haul Road-Sta. 28+00	6955.0	Haul Rd.	107.3	7.2	95	CL	Yes
	Sandcone	Haul Road-Sta. 30+00	6955.0	Haul Rd.	107.0	6.7	95	CL	Yes

F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
HAUL ROAD INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
10/07	Retest Sandcone	Haul Road-Sta.	32+00		6955.0	HRS	110.1	11.7	97	CL	Yes
	Retest Sandcone	Haul Road-Sta.	34+00		6955.0	HRS	109.2	10.4	97	CL	Yes
	Retest Sandcone	Haul Road-Sta.	36+00		6955.0	HRS	109.5	9.1	97	CL	Yes
	Retest Sandcone	Haul Road-Sta.	24+00		6955.0	HRS	108.7	8.9	96	CL	Yes
	Retest Sandcone	Haul Road-Sta.	40+00		6955.0	HRS	113.9	8.4	100	CL	Yes
	Retest Sandcone	Haul Road-Sta.	42+00		6955.0	HRS	110.8	9.2	98	CL	Yes

F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

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
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/13/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay - Haul Road
Authorized By: E. Morales/Client Date 08/08/91
Source of Material: Haul Road
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	08/08/91	Haul Road Sta. 27+00, L/CL	6954.0
2	08/08/91	Haul Road Sta. 25+00, CL	6954.0
3	08/08/91	Haul Road Sta. 23+00, R/CL	6954.0

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		14.8	113.0	10.2	110.4	98	Yes	1/10/14/18
2		14.8	113.0	12.7	111.6	99	Yes	1/10/14/18
2		14.8	113.0	13.2	110.4	98	Yes	1/10/14/18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: 6955 = Top of Haul Road Subgrade

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Lab/Invoice No. 3141071 6
Date 08/21/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Work
Location: Church Rock, New Mexico
Type of Material: Sandy silty clay
Source of Material: Haul Road
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date 08/13/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	08/13/91	Haul Road, 10'R of CL, Sta. 29+00	6954
2	08/13/91	Haul Road, CL, Sta. 31+00	6954
3	08/13/91	Haul Road, 10'R of CL, Sta. 33+00	6954
4	08/13/91	Haul Road, 10'L of CL, Sta. 35+00	6954

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		14.8	113.0	15.8	108.1	96	Yes	1-10-14-18
2		14.8	113.0	13.3	115.2	100+	Yes	1-10-14-18
3		14.8	113.0	13.8	113.5	100+	Yes	1-10-14-18
4		14.8	113.0	12.8	112.8	100+	Yes	1-10-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: 6955=Top of Haul Road subgrade

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Farmington, New Mexico 87401
(505) 327-4966 • fax 327-5293

LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/26/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy silty clay — Authorized By: E. Morales/Client — Date: 08/22/91
Source of Material: Haul Road — 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	08/22/91	Haul road, Sta. 37+00, CL	6954.0
2	08/22/91	Haul road, Sta. 39+00, 5'L of CL	6954.0
3	08/22/91	Haul road, Sta. 41+00, CL	6954.0

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		14.8	113.0	8.6	104.9	93	No	1-10-14-18
2		14.8	113.0	10.4	102.5	91	No	1-10-14-18
3		14.8	113.0	13.6	108.5	96	Yes	1-10-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: 6954.0 = Top of Haul Road Subgra

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/26/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay
Authorized By: E. Morales/Client Date: 08/23/91
Source of Material: Haul Road
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 †
1R	08/23/91	Retest of #1 (08/22/91) Sta. 37+00, CL of Haul Road	6954.0
2R	08/23/91	Retest of #2 (08/22/91) Sta. 39+00, 5'L of CL of Haul Road	6954.0

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
1R		14.8	113.0	14.9	109.0	96	Yes	1-10-14-18
2R		14.8	113.0	13.4	109.9	97	Yes	1-10-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTOXXX~~
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.

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Note: 6954.0 = Top of Haul Road Subgr

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

SOIL/AGGREGATE FIELD DENSITY TESTS

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

Job No. 3141K062
Lab/Invoice No. 31410925
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Haul Road
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 10/03/91
Tested/Calc. By: H. Kuebler/WT & S. Gutka/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
8	10/03/91	Haul Road, Sta. 32+00, L ribbon, 5'W. of E. side	6955.0*
9	10/03/91	Haul Road, Sta. 34+00, R ribbon, 16'E. of W. side	6955.0*
10	10/03/91	Haul Road, Sta. 36+00, L ribbon, 11'W. of E. side	6955.0*
11	10/03/91	Haul Road, Sta. 38+00, R ribbon, 17'E. of W. side	6955.0*
12	10/03/91	Haul Road, Sta. 22+00, R ribbon, 26'E. of W. side	6955.0*
13	10/03/91	Haul Road, Sta. 24+00, L ribbon, 12'W. of E. side	6955.0*
14	10/03/91	Haul Road, Sta. 26+00, R ribbon, 9'E. of W. side	6955.0*
15	10/03/91	Haul Road, Sta. 28+00, L ribbon, 6'W. of E. side	6955.0*
16	10/03/91	Haul Road, Sta. 30+00, R ribbon, 20'E. of W. side	6955.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
8		14.8	113.0	7.1	106.5	94	No	1-10-14-18
9		14.8	113.0	8.6	100.1	89	No	1-10-14-18
10		14.8	113.0	7.2	104.1	92	No	1-10-14-18
11		14.8	113.0	9.3	107.0	95	Yes	1-10-14-18
12		14.8	113.0	7.4	108.9	96	Yes	1-10-14-18
13		14.8	113.0	7.5	106.6	94	No	1-10-14-18
14		14.8	113.0	4.2	107.1	95	Yes	1-10-14-18
15		14.8	113.0	7.2	107.3	95	Yes	1-10-14-18
16		14.8	113.0	6.7	107.0	95	Yes	1-10-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~XXSHTMXXX~~
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.

*Test elevations represent Top of Haul Road.

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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. 3141K062
Lab/Invoice No. 31410973
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Haul Road
Authorized By: E. Morales/Client Date: 10/07/91
Source of Material: Native
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 †
6R	10/07/91	Retest of #8 (10/03/91) Sta. 32+00, Haul Road	6955.0*
7R	10/07/91	Retest of #9 (10/03/91) Sta. 34+00, Haul Road	6955.0*
8R	10/07/91	Retest of #10 (10/03/91) Sta. 36+00, Haul Road	6955.0*
9R	10/07/91	Retest of #13 (10/03/91) Sta. 24+00, Haul Road	6955.0*
10	10/07/91	Haul Road, Sta. 40+00	6955.0*
11	10/07/91	Haul Road, Sta. 42+00	6955.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
6R		14.8	113.0	11.7	110.1	97	Yes	1-10-14-18
7R		14.8	113.0	10.4	109.2	97	Yes	1-10-14-18
8R		14.8	113.0	9.1	109.5	97	Yes	1-10-14-18
9R		14.8	113.0	8.9	108.7	96	Yes	1-10-14-18
10		14.8	113.0	8.4	113.9	100	Yes	1-10-14-18
11		14.8	113.0	9.2	110.8	98	Yes	1-10-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~XXSHEXXXX~~
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.

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*Test elevations represent Top of Haul Road.

United Nuclear Corporation
HAUL ROAD INTERIM RECLAMATION - 1991

Final Test Summary

Gradation/Atterberg Tests

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/05	Gradation/ Atterberg	--	Haul Road	28+00	6965	**	--	--	--	CL	n/a

Elevations are given in feet above mean sea level

United Nuclear Corporation
HAUL ROAD INTERIM RECLAMATION - 1991

Final Test Summary

Proctor Tests

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
06/05	Proctor ASTM D698	--	Haul Road 28+00		5965	**	113.0	14.8	--	CL	n/a

Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.
400 South Lorena Avenue
Farmington, New Mexico 87401
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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410716
Date of Report 08/13/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/05/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/05/91
Description: Intermediate Tailings Authorized by E. Morales/UNC Date 08/05/91
Source of Material: Sta. 28 + 00 on Haul Road @ elev. 6965

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1"	
1/2"	100
3/8"	99
No. 4	98
10	96
40	93
100	78
200	61

Plasticity Index, ASTM D4318

Liquid Limit 31
Plasticity Index 14

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 113.0
Optimum Moisture Content, % 14.8

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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APPENDIX C

Regraded Tailings Surface (South Cell)

Once the low areas were filled, the surface of the tailings were regraded to provide a smoother surface for the cover material. This regrading was accomplished by moving coarse tailings materials from the west section of the South Cell to the east section. Additional material was also added by hauling material from the Haul Road, Borrow Pit No. 2 Stockpile, and the Old Churchrock Site.

Construction methods of regrading the tailings area consisted of transporting material with catapillar model 633 scrapers into fill sections. After being discharged from scrapers, the material was placed by the use of a catapillar dozer. Water was added for dust control and to aid in achieving compaction requirements.

Soil was placed to tailing surface grade with the use of a road grader. Water was repeatedly sprayed on soil for dust control measures. The final lift was compacted using a pneumatic roller.

Unstable areas along the south end of the site were excavated to depths of two to three feet. Soil consisting of clay or coarser grain, non-tailing soil, (sand with sandstone pieces) were placed to stabilize these areas. Clay and non-tailing soil types appeared to have a better bridging effect than tailing sands. Compaction testing occurred after Nielsons Inc. was satisfied unstable areas met compaction requirements.

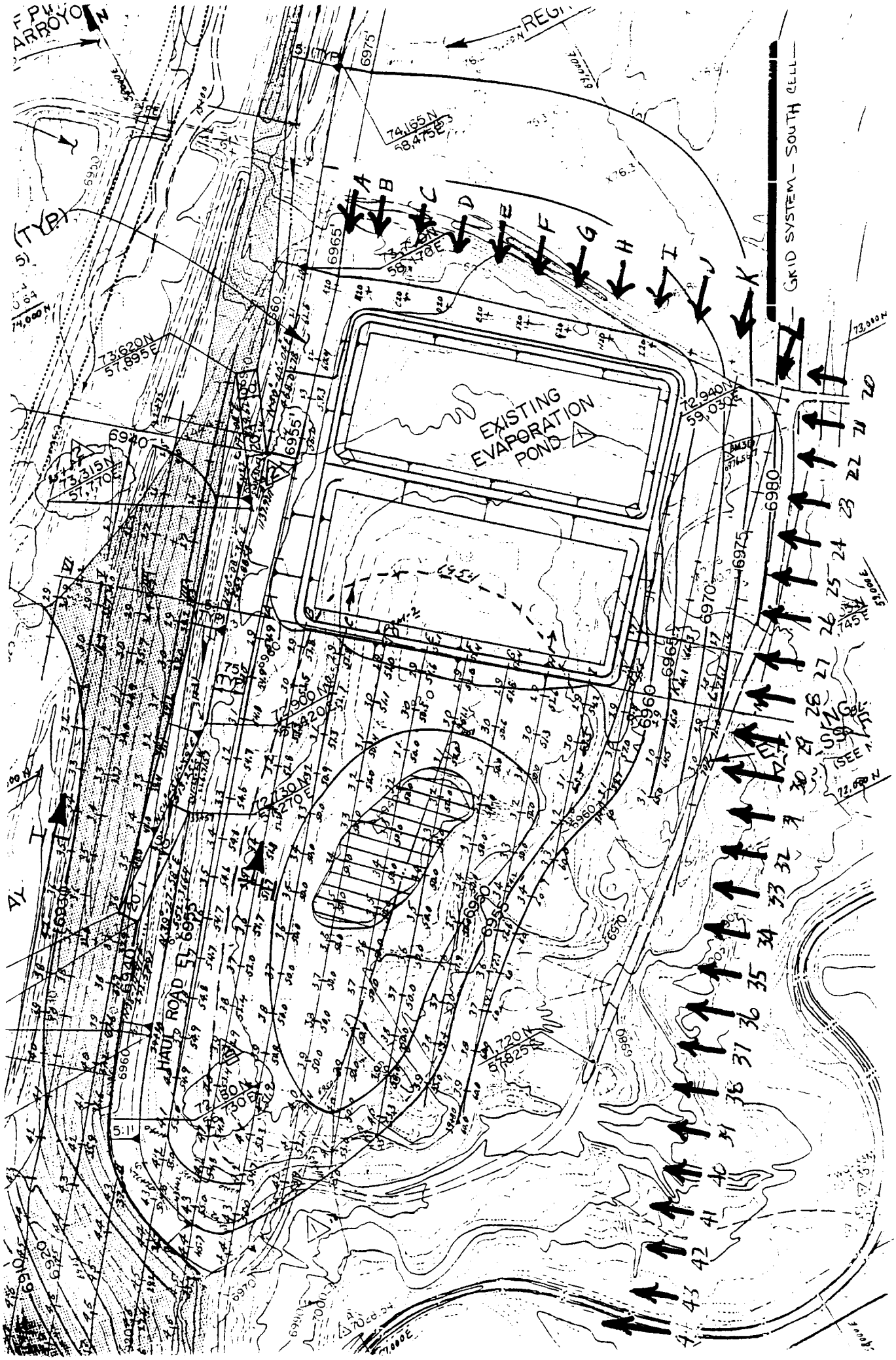
A total of 54 compaction tests were done on the regraded tailing surface in 47 test locations with 7 failing tests. Retests were done in the failing areas after Nielsons Inc. reworked that area. Retests met job specifications.

Regraded Tailings Surface (South Cell) (con't)

Proctor tests (ASTM D698) were done on each soil type encountered in regrading the tailing surface area. Sixteen different proctor tests curves and two "one point" proctors were used during the recontouring of the tailing surface. Maximum dry density ranged from 109.5 lb/cu ft to 120.8 lb/cu ft. Optimum moisture contents ranged from 10.2 to 15.4%. Soil grain size and clay content were the prime factors in causing a change in the proctor test curves.

Three specific gravity tests were performed on material representing the three material types normally encountered. These results indicate specific gravity ranges between 2.63 and 2.70.

Twenty two gradation and atterberg tests were performed during placement of south cell regrading tailing surface.


GRID SYSTEM - SOUTH CELL
EXISTING EVAPORATION POND
HAUL ROAD EL 6955
74,165 N
58,475 E
73,620 N
57,895 E
73,315 N
57,770 E
72,940 N
59,030 E
72,900 N
72,730 N
72,720 N
57,825 E
6975
6965
6960
6955
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6960
6970
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5:1 TYP
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United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Regraded Tailings Surface

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft ^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/11	Sandcone	A-36	72480	57200	6954.7	RTS	108.3	7.3	95	SM	n/a
07/15	Sandcone	H-30.5	72450	58140	6952.0	RTS	104.4	5.0	91	SM	Yes
07/16	Sandcone	B-29	72950	57720	6953.8	RTS	115.3	13.4	100+	SM	Yes
07/24	Sandcone	B-30	72880	57650	6953.5	RTS	108.9	10.8	99	SM	Yes
	Sandcone	A-34	72640	57320	6954.6	RTS	99.8	3.9	90	SM	Yes
	Sandcone	A-31	72870	57600	6954.8	RTS	104.0	9.6	94	SM	Yes
07/29	Sandcone	F-38	72020	57430	6950.0	RTS	115.0	7.4	99	SM	Yes
07/30	Sandcone	A-33	72680	57390	6954.6	RTS	110.3	8.3	98	SM	Yes
08/01	Sandcone	A-24	73400	57950	6956.2	RTS	123.4	11.5	100+	SM	Yes
	Sandcone	A-28	73100	57700	6955.0	RTS	115.0	10.4	93	SM	Yes
08/15	Sandcone	A-26	73250	57830	6955.0	RTS	108.7	10.6	93 P	SM	Yes
08/16	Sandcone	A-39	72240	57000	6954.9	RTS	107.2	6.7	96 P	SM	Yes
	Sandcone	A-41	72100	56860	6955.0	RTS	112.4	7.7	100 P	SM	Yes
	Sandcone	B-32	72710	57530	6952.8	RTS	108.8	6.3	91 P	SM	Yes
	Sandcone	B-36	72400	57260	6951.7	RTS	114.5	5.6	96 P	SM	Yes
	Sandcone	B-38	72260	57130	6952.4	RTS	106.6	6.7	89 F	SM	No
08/19	Sandcone	B-38	72660	57130	6952.4	RTS	117.3	5.1	98 P	SM	Yes
08/20	Sandcone	C-31	72760	57660	6951.3	RTS	108.1	8.6	94 P	CL	Yes
	Sandcone	C-33	72580	57500	6950.0	RTS	107.0	9.1	93 P	CL	Yes
	Sandcone	C-35	72420	57390	6950.0	RTS	115.7	5.9	97 P	SM	Yes

Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Regraded Tailings Surface

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft ^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/22	Sandcone	B-42	71950	57880	6954.8	RTS	106.0	7.1	94 P	CL	Yes
	Sandcone	A-21	73650	58100	6962.6	RTS	102.6	8.7	89 F	CL	No
	Sandcone	B-40	72110	57020	6953.4	RTS	102.7	8.5	89 F	CL	No
	Retest Sandcone	B-40	72110	57020	6953.4	RTS	106.6	13.0	93 P	CL	Yes
08/23	Sandcone	C-41	71970	57020	6953.3	RTS	108.2	11.6	95 P	SM	Yes
	Sandcone	C-39	72120	57150	6950.8	RTS	113.5	5.1	95 P	SM-SC	Yes
	Retest Sandcone	A-21	73650	58100	6962.6	RTS	112.2	15.7	98 P	CL	Yes
08/26	Sandcone	D-30	72750	57810	6951.1	RTS	97.0	8.0	82 F	SC-SM	No
	Sandcone	D-32	72580	57670	6950.0	RTS	109.3	4.6	93 P	SC-SM	Yes
	Sandcone	D-34	72430	57530	6950.0	RTS	101.0	10.6	86 F	SC-SM	No
08/27	Retest Sandcone	D-30	72750	57810	6951.1	RTS	118.8	11.3	100+P	SC-SM	Yes
	Retest Sandcone	D-34	72580	57670	6950.0	RTS	108.0	6.5	92 P	SC-SM	Yes
	Sandcone	D-36	72280	57400	6950.0	RTS	113.8	10.5	96 P	SC-SM	Yes
	Sandcone	D-39	72070	57220	6950.0	RTS	119.7	5.3	100+P	SC-SM	Yes
09/11	Sandcone	E-29	72760	57950	6951.6	RTS	102.4	9.6	85 F	SM	No
	Sandcone	E-31	72600	57810	6950.0	RTS	104.9	7.4	87 F	SM	No
	Sandcone	E-33	72440	57670	6950.0	RTS	112.6	8.5	93	SM	Yes
	Sandcone	E-35	72290	57550	6950.0	RTS	106.6	9.7	88 F	SM	No
	Sandcone	E-37	72150	57430	6950.0	RTS	111.0	5.4	92	SM	Yes

Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Regraded Tailings Surface

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft^3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/12	Retest Sandcone	E-29	72760	57950	6951.6	RTS	108.9	8.8	90	SM	Yes
	Retest Sandcone	E-31	72600	57810	6950.0	RTS	109.2	8.5	90	SM	Yes
	Retest Sandcone	E-35	72290	57550	6950.0	RTS	120.5	11.1	100	SM	Yes
09/13	Sandcone	F-30	72610	57950	6951.1	RTS	108.1	12.3	99	CL	Yes
	Sandcone	F-32	72450	57820	6950.0	RTS	106.3	9.7	97	CL	Yes
	Sandcone	F-34	72300	57680	6950.0	RTS	103.5	9.0	95	CL	Yes
	Sandcone	F-38	72030	57450	6950.0	RTS	116.7	6.7	100	CL	Yes
09/18	Sandcone	G-35	72170	57640	6950.0	RTS	110.6	6.9	99	SC	Yes
	Sandcone	G-29	72620	58100	6951.8	RTS	112.5	9.4	100	CL	Yes
	Sandcone	G-31	72460	57960	6950.0	RTS	111.1	11.9	100	CL	Yes
	Sandcone	G-32	72380	57890	6950.0	RTS	109.1	9.4	98	CL	Yes
	Sandcone	G-33	72310	57820	6950.0	RTS	116.0	8.4	100	CL	Yes
09/19	Sandcone	H-29	72570	58200	6952.6	RTS	116.5	5.8	99	SC-SM	Yes
	Sandcone	H-31	72410	58100	6950.6	RTS	105.8	10.1	90	SC-SM	Yes
09/25	Sandcone	I-34.5	72090	57900	6960.0	RTS	103.6	11.7	91	CL	Yes
	Sandcone	I-34	72110	57910	6960.0	RTS	113.2	12.6	100	CL	Yes

Elevations are given in feet above mean sea level

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

LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410973
Date of Report 11/07/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date See Note
Material: Sandy lean clay Submitted by H. Kuebler/WT Date See Note
Description: See Note Authorized by E. Morales/UNC Date See Note
Source of Material: See Note

Material	SoilType	Specific Gravity
Regraded Tailings Surface	SC-SM	2.68
Regraded Tailings Surface	CL-ML	2.70
Regraded Tailings Surface	SM	2.63

Note: Material for specific gravities was sampled from compaction test moisture samples. A composite sample for each soil type encountered was kept. A total of five specific gravities, three on regraded tailings surface materials and two on soil cover material, south and central cells were performed.

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WESTERN TECHNOLOGIES INC.
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Farmington, New Mexico 87401
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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

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

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/18/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Upper foot of Regraded Tailings Surface
Authorized By: E. Morales/Client Date: 07/11/91
Source of Material: Native
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 †
2	07/11/91	72480N & 57200E (A-36)	6954.7'

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
2		14.5	114.2	7.3	108.3	95	Yes	1-11-14-18

* Comments
1 Subgrade
2. Subbase Fill
3. Base Course
4 Backfill
5 Pavement Area
6 Below Footing Bottom
7 Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13 _____
14 Tested D-1556/~~AASHTO T-191~~
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.

Copies to: Client, E. Morales (1)
Client, J. Fletcher (1)
Billing (1)
/sr

Note: 6954.7'=Top of Regraded Tailing Surface

*Report revised 08/08/91 to reflect correct moisture method.

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 87305

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/25/91
Reviewed By Joseph C. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Regraded Tailings Authorized By E. Morales/Client Date 07/15/91
Source of Material: Native 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	07/15/91	72450N & 58140E (H-30.5)	6952'

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		14.5	114.2	5.0	104.4	91	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

Copies to: Client, J. Fletcher (1)
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Billing (1)
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Note: 6952'=Top of Regraded Tailings Surface.

*Report revised 08/08/91 to reflect correct moisture method.

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Farmington, New Mexico 87401
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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87305

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/25/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Regraded Tailings Authorized By: E. Morales/Client Date: 07/16/91
Source of Material: Native 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	07/16/91	72950N & 57720E (B-29)	6953.8'

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		11.6	110.3	13.4	115.3	100+	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/AASHTO T217
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 D 2216*
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.

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Note: 6953.8'=Top of Regraded Tailings Surface.

*Report revised 08/08/91 to reflect correct moisture method.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, New Mexico 87305

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/31/91
Reviewed By L. Wanebach

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: SM-Silty sand-Surface Regraded Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 07/24/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	07/24/91	72880N & 57650E (B-30)	6953.5
2	07/24/91	72640N & 57320E (A-34)	6954.6
3	07/24/91	72870N & 57600E (A-31)	6954.8

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		11.6	110.3	10.8	108.9	99	Yes	1-11-14-18
2		13.9	111.0	3.9	99.8	90	Yes	1-11-14-18
3		13.9	111.0	9.6	104.0	94	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: Test #1 - 6953.5 = Top of Regraded Tailing Surface
Test #2 - 6954.6 = Top of Regraded Tailings Surface
Test #3 - 6954.8 = Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallip, New Mexico 87305

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/08/91
Reviewed By

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand w/sandstone Regraded tailings surface
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. C

Authorized By: E. Morales/Client Date 07/29/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
2	07/29/91	72020N & 57340E (F-38)	6950.0

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. †	Comments *
2		10.6	116.3	7.4	115.0	99	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: 6950.0 = Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallip, New Mexico 87305

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/08/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Regraded Tailings Surface
Authorized By: E. Morales/Client Date: 07/30/91
Source of Material: Native
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	07/30/91	72700N & 57380E (A-33)	6954.6

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		12.6	112.3	8.3	110.3	98	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTOXXXX~~
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.

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Note: 6954.6 = Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallip, New Mexico 87305

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/08/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Regraded Tailings Surface
Authorized By: E. Morales/Client Date: 08/01/91
Source of Material: Native
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	08/01/91	73400N & 57950E (A-24)	6956.2
2	08/01/91	73100N & 57700E (A-28)	6955.0

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		12.2	117.3	11.5	123.4	100+	Yes	1-11-14-18
2		12.6	112.3	10.4	104.2	93	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: Test #1 6956.2 = Top of Regrade Tailings Surfa
Test #2 6955.0 = Top of Regrade Tailings Surfa

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/21/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Work
Location: Church Rock, New Mexico
Type of Material: Silty sand
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 08/15/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	08/15/91	73250N & 57830E (A-26)	6955

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		12.2	117.3	10.6	108.7	93	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~XXXXXXXX~~
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.

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Note: 6955=Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/21/91
Reviewed By Joseph C. Phillips

Project: 1991 Reclamation Work
Location: Church Rock, New Mexico
Type of Material: Silty sand w/sandstone pieces-Regraded tailings surface*
Authorized By: E. Morales/Client Date 08/16/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. C
Test Locations Designated By: H. Kuebler/WT
*Non-tailings

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	08/16/91	72710N & 57530E (B-32)	6952.8
2	08/16/91	72400N & 57260E (B-36)	6951.7
3	08/16/91	72260N & 57130E (B-38)	6952.4

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. †	Comments *
1		10.2	119.5	6.3	108.8	91	Yes	1-11-14-18
2		10.2	119.5	5.6	114.5	96	Yes	1-11-14-18
3		10.2	119.5	6.7	106.6	89	No	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: Test #1 6952.8 = Top of Regraded Tailings Surfac
Test #2 6951.7 = Top of Regraded Tailings Surfac
Test #3 6952.4 = Top of Regraded Tailings Surfac

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/21/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Work
Location: Church Rock, New Mexico
Type of Material: Silty sand-Regraded Tailings Surface
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 08/16/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	08/16/91	72240N & 57000E (A-39)	6954.9
2	08/16/91	72100N & 56860E (A-41)	6955.0

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. †	Comments *
1		13.8	111.7	6.7	107.2	96	Yes	1-11-14-18
2		13.8	111.7	7.7	112.4	100	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~XXXXXXXX~~
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.

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Note: Test #1 6954.9= Top of Regrade Tailings Surfa
Test #2 6955 = Top of Regrade Tailings Surfa

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/26/91
Reviewed By J Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand w/sandstone pieces Regraded Tailings Surface
Authorized By: E. Morales/Client Date: 08/19/91
Source of Material: Native
Tested/Calc. By: R. Johnston/WT
Moisture/Density Relationship: ASTM D698 Meth. C
Test Locations Designated By: R. Johnston/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1R	08/19/91	Retest of #3 (08/16/91) 72260N & 57130E (B-38)	6952.4

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
1R		10.2	119.5	5.1	117.3	98	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~XXSCHXXXX~~
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.

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Note: 6952.4 = Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/26/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay- Regraded Tailings Surface
Authorized By: E. Morales/Client Date: 08/20/91
Source of Material: Native
Tested/Calc. By: R. Johnston/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: R. Johnston/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	08/20/91	72760N & 57660E (C-31)	6951.3
2	08/20/91	72580N & 57500E (C-33)	6950.0

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		13.0	115.0	8.6	108.1	94	Yes	1-11-14-18
2		13.0	115.0	9.1	107.0	93	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: Test #1 - 6951.3 = Top of Regraded Tailings Surface
Test #2 - 6950.0 = Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Callup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/26/91
Reviewed By J Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand w/sandstone pieces Regraded Tailings Surface
Authorized By: E. Morales/Client Date: 08/20/9
Source of Material: Native
Tested/Calc. By: R. Johnston/WT
Moisture/Density Relationship: ASTM D698 Meth. C
Test Locations Designated By: R. Johnston/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	08/20/91	72420N & 57390E (C-35)	6950.0

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		10.2	119.5	5.9	115.7	97	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO~~
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.

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Note: 6950.0 = Top of Regraded Tailin Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/26/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Regraded Tailings Surface
Authorized By: E. Morales/Client Date: 08/22/91
Source of Material: Native
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	08/22/91	73650N & 58100E (A-21)	6926.6
2	08/22/91	72110N & 57020E (B-40)	6953.4
3R	08/22/91	Retest of #2 (08/22/91) 72110N & 57020E (B-40)	6953.4

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		13.0	115.0	8.7	102.6	89	No	1-11-14-18
2		13.0	115.0	8.5	102.7	89	No	1-11-14-18
3R		13.0	115.0	13.0	106.6	93	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~XXXXXXX~~
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.

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Note: Test #1 6926.6 = Top of Regraded Tailin Surface.
Test #2 & #3 6953.4 = Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/26/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay - Regraded Tailings Surface
Source of Material: Native
Authorized By: E. Morales/Client Date 08/22/91
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	08/22/91	71950N & 57880E (B-42)	6954.8

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		14.8	113.3	7.1	106.0	94	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTOXXX~~
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.

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Note: 6954.8 = Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/26/91
Reviewed By J Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Regraded Tailings Surface — Authorized By: E. Morales/Client — Date: 08/23/91
Source of Material: Native — 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 †
1R	08/23/91	Retest of #1 (08/22/91) 73650N & 58100E (A-21)	6962.6

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. †	Comments *
1R		13.0	115.0	15.7	112.2	98	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO-XX~~
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.

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Note: 6962.6 = Top of Regraded Tailin Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/26/91
Reviewed By J Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Regraded Tailings Surface
Source of Material: Native
Authorized By: E. Morales/Client Date: 08/23/91
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	08/23/91	71970N & 57020E (C-41)	6953.3
2	08/23/91	72120N & 57150E (C-39)	6950.8

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		13.4	113.5	11.6	108.2	95	Yes	1-11-14-18
2		10.2	119.5	5.1	113.5	95	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-180~~
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.

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Note: Test #1 6953.3 = Top of Regraded Tailings Surfac
Test #2 6950.8 = Top of Regraded Tailings Surfac

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/06/91
Reviewed By

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty clayey sand-Regraded Tailings Surface
Authorized By: E. Morales/Client Date: 08/26/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. C
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	08/26/91	72750N & 57810E (D-30)	6951.1
2	08/26/91	72580N & 57670E (D-32)	6950.0
3	08/26/91	72430N & 57530E (D-34)	6950.0

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		12.4	118.0	8.0	97.0	82	No	1-11-14-18
2		12.4	118.0	4.6	109.3	93	Yes	1-11-14-18
3		12.4	118.0	10.6	101.0	86	No	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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Test #1 - 6951.1 = Top of Regraded Tailings Surface
Test #2 & #3 - 6950.0 = Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy silty clay-Regraded Tailings Surface
Authorized By: E. Morales/Client Date: 08/27/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. C
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1R	08/27/91	Retest-72750N & 57810E (D-30)	6951.1
2R	08/27/91	Retest-72580N & 57670E (D-34)	6950.0
3	08/27/91	72280N & 57400E (D-36)	6950.0
4	08/27/91	72070N & 57220E (D-39)	6950.0

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1R		12.4	118.0	11.3	118.8	100+	Yes	1-11-14-18
2R		12.4	118.0	6.5	108.0	92	Yes	1-11-14-18
3		12.4	118.0	10.5	113.8	96	Yes	1-11-14-18
4		12.4	118.0	5.3	119.7	100+	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTOXXXX~~
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.

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Note: Test #1 - 6951.1 = Top of Regraded Tailings Surface
Tests #2 thru #4
6950.0 = Top of Regraded Tailings Surface

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SOIL/AGGREGATE FIELD DENSITY TESTS

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

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/17/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand w/sandstone pieces-Regraded Tailings Surface
Authorized By: Ed Morales/Client Date: 09/11/91
Source of Material: On Site
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. C
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
11	09/11/91	72760N & 57950E (E-29)	6951.6*
12	09/11/91	72600N & 57810E (E-31)	6950.0*
13	09/11/91	72440N & 57670E (E-33)	6950.0*
14	09/11/91	72290N & 57550E (E-35)	6950.0*
15	09/11/91	72150N & 57430E (E-37)	6950.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. †	Comments *
				Moisture %	Dry Density pcf			
11		10.8	120.8	9.6	102.4	85	No	1-11-14-18
12		10.8	120.8	7.4	104.9	87	No	1-11-14-18
13		10.8	120.8	8.5	112.6	93	Yes	1-11-14-18
14		10.8	120.8	9.7	106.6	88	No	1-11-14-18
15		10.8	120.8	5.4	111.0	92	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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 D-2216
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.

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*Note: Test elevations given above represent the Regraded Tailings Surface.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

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

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/17/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand w/sandstone pieces Regraded Tailings Surface
Authorized By: Ed Morales/Client Date: 09/12/91
Source of Material: On Site
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. C
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1R	09/12/91	Retest of #11 (09/11) 72760N & 57950E (E-29)	6951.6*
2R	09/12/91	Retest of #12 (09/11) 72600N & 57810E (E-31)	6950.0*
3R	09/12/91	Retest of #14 (09/11) 72290N & 57550E (E-35)	6950.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
1R		10.8	120.8	8.8	108.9	90	Yes	1-11-14-18
2R		10.8	120.8	8.5	109.2	90	Yes	1-11-14-18
3R		10.8	120.8	11.1	120.5	100	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~XXXXXXXXX~~
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 D-2216
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.

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*Note: Test elevations given above represent Regraded Tailings Surface.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/24/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Regraded Tailings Surface
Authorized By: Ed Morales/Client Date: 09/13/91
Source of Material: On site
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	09/13/91	72610N & 57950E (F-30)	6951.1*
2	09/13/91	72450N & 57820E (F-32)	6950.0*
3	09/13/91	72300N & 57680E (F-34)	6950.0*
4	09/13/91	72030N & 57450E (F-38)	6950.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		14.8	109.5	12.3	108.1	99	Yes	1-11-14-18
2		14.8	109.5	9.7	106.3	97	Yes	1-11-14-18
3		14.8	109.5	9.0	103.5	95	Yes	1-11-14-18
4		14.8	109.5	6.7	116.7	100	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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: Elevations represent top of Regraded Tailings Surface.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/24/91
Reviewed By Joseph V. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay to clayey sand-Regraded Tailings Surface
Authorized By: Ed Morales/Client Date: 09/18/91
Source of Material: On site
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	09/18/91	72620N & 58100E (G-29)	6951.8*
2	09/18/91	72460N & 57960E (G-31)	6950.0*
3	09/18/91	72380N & 57890E (G-32)	6950.0*
4	09/18/91	72310N & 57820E (G-33)	6950.0*
5	09/18/91	72170N & 57640E (G-35)	6950.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. †	Comments *
1		15.4	111.7	9.4	112.5	100	Yes	1-11-14-18
2		15.4	111.7	11.9	111.1	100	Yes	1-11-14-18
3		15.4	111.7	9.4	109.1	98	Yes	1-11-14-18
4		15.4	111.7	8.4	116.0	100	Yes	1-11-14-18
5		15.4	111.7	6.9	110.6	99	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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: Elevations represent top of Regraded Tailings Surface.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

30992

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/24/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty clayey sand
Authorized By: Ed Morales/Client Date: 09/19/91
Source of Material: On site
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. C
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	09/19/91	72570N & 58200E (H-29)	6952.6*
2	09/19/91	72410N & 58100E (H-31)	6950.6*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		12.4	118.0	5.8	116.5	99	Yes	1-11-14-18
2		12.4	118.0	10.1	105.8	90	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-180~~
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.

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*Note: Elevations represent top of Regraded Tailings Surface.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 10/02/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Regraded Tailings Surface Authorized By E. Morales/Client Date 09/25/91
Source of Material: On site 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	09/25/91	72090N & 57900E (I-34.5)	6960.0*
2	09/25/91	72110N & 57910E (I-34)	6960.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		14.8	113.3	11.7	103.6	91	Yes	1-11-14-18
2		14.8	113.3	12.6	113.2	100	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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.

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*Note: Elevations represent Top of Regraded Tailing Surface.

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Gradation/Atterberg Tests
Regraded Tailings Surface

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft 3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/11	Gradation/ Atterberg	A-36	72480	57200	6954.7	RTS	-	-	-	-	-
07/16	Gradation/ Atterberg	A-34	72640	57320	6954.6	RTS	-	-	-	SM	-
07/17	Gradation/ Atterberg	B-29	72950	57720	6953.8	RTS	-	-	-	SM	-
07/24	Gradation/ Atterberg	B-42	71950	57780	6954.8	RTS	-	-	-	SC	-
07/25	Gradation/ Atterberg	A-39	72240	57000	6954.9	RTS	-	-	-	SM	-
07/26	Gradation/ Atterberg	E-38	72090	57370	6950.0	RTS	-	-	-	SM	-
07/29	Gradation/ Atterberg	F-38	72020	57430	6950.0	RTS	-	-	-	SM	-
07/30	Gradation/ Atterberg	A-33	72680	57390	6954.6	RTS	-	-	-	SM	-
07/31	Gradation/ Atterburg	B-40	72120	57020	6953.4	RTS	-	-	-	SM	-
08/01	Gradation/ Atterburg	A-24	73400	57950	6956.2	RTS	-	-	-	SM	-
08/06	Gradation/ Atterberg	B-33	72630	57460	6952.2	RTS	-	-	-	SM	-
08/12	Gradation/ Atterberg	C-33	72580	57540	6950.0	RTS	-	-	-	CL	-
08/13	Gradation/ Atterberg	C-41	71960	57020	6953.3	RTS	-	-	-	SM	-
08/16	Gradation/ Atterberg	B-32	72710	57530	6952.8	RTS	-	-	-	SM	-
08/26	Gradation/ Atterberg	D-36	72280	57400	6950.0	RTS	-	-	-	SC-SM	-

Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Gradation/Atterberg Tests
Regraded Tailings Surface

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft ^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/11	Gradation/ Atterberg	E-37	72150	57430	6950.0	RTS	-	-	-	SM	n/a
09/13	Gradation/ Atterberg	F-30	72610	57950	6951.1	RTS	-	-	-	CL	n/a
	Gradation/ Atterberg	F-34	72300	57680	6950.0	RTS	-	-	-	CL	n/a
09/16	Gradation/ Atterberg	G-30	72550	58050	6950.6	RTS	-	-	-	CL	n/a
09/18	Gradation/ Atterberg	G-35	72170	57640	6950.0	RTS	-	-	-	SC	n/a
09/19	Gradation/ Atterberg	H-31	72410	58100	6950.6	RTS	-	-	-	SC-SM	n/a
09/25	Gradation/ Atterberg	I-34	72110	57910	6960.0	RTS	-	-	-	SM-SC	n/a

Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Proctor Tests
Regraded Tailings Surface

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft 3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/11	Proctor ASTM D698	A-36	72480	57200	6954.7	RTS	114.2	14.5	-	-	-
07/16	Proctor ASTM D698	A-34	72640	57320	6954.6	RTS	111.0	13.9	-	SM	-
07/17	Proctor ASTM D698	B-29	72950	57720	6953.8	RTS	110.3	11.6	-	SM	-
07/24	Proctor ASTM D698	B-42	71950	57780	6954.8	RTS	113.3	14.8	-	SC	-
07/25	Proctor ASTM D698	A-39	72240	57000	6954.9	RTS	111.7	13.8	-	SM	-
07/29	Proctor ASTM D698	F-38	72020	57430	6950.0	RTS	116.3	10.6	-	SM	-
07/30	Proctor ASTM D698	A-33	72680	57390	6954.6	RTS	112.3	12.6	-	SM	-
08/01	Proctor ASTM D698	A-24	73400	57950	6956.2	RTS	117.3	12.2	-	SM	-
08/12	Proctor ASTM D698A	C-33	72580	57540	6950.0	RTS	115.0	13.0	-	CL	-
08/13	Proctor ASTM D698A	C-41	71960	57020	6953.3	RTS	113.5	13.4	-	SM	-
08/16	Proctor ASTM D698C	B-32	72710	57530	6952.8	RTS	119.5	10.2	-	SM	-
08/22	Proctor (1 point) ASTM D698A	B-42	71950	57880	6954.8	RTS	115.0	13.0	-	CL	-
08/26	Proctor ASTM D698C	D-36	72280	57400	6950.0	RTS	118.0	12.4	-	SC-SM	-
09/11	Proctor ASTM D698C	E-37	72150	57430	6950.0	RTS	120.8	10.8	-	SM	n/a
09/13	Proctor ASTM D698A	F-30	72610	57950	6951.1	RTS	109.5	14.8	-	CL	n/a

Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Proctor Tests
Regraded Tailings Surface

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft^3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/16	Proctor ASTM D698A	G-30	72550	58050	6950.6	RTS	111.7	15.4	-	CL	n/a
09/19	Proctor (1 point) ASTM D698C	H-31	72410	58100	6950.6	RTS	118.0	12.4	-	SC-SM	n/a
09/25	Proctor (1 point) ASTM D698C	I-34	72110	57910	6960.0	RTS	113.3	14.8	-	SM-SC	n/a

Elevations are given in feet above mean sea level

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410643
Date of Report 07/18/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/11/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/11/91
Description: Regraded Tailings Authorized by E. Morales/UNC Date 07/11/91
Source of Material: 72480N & 57200E (A-36) Elevation 6954.7

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	100
3/8"	98
No. 4	97
8	92
40	78
100	43
200	35

Plasticity Index, ASTM D4318

Liquid Limit 23
Plasticity Index 2

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 114.2
Optimum Moisture Content, % 14.5

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410643
Date of Report 07/25/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/16/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/16/91
Description: Regraded Tailings Authorized by E. Morales/UNC Date 07/16/91
Source of Material: 72640N & 57320E (A-34) Elevation 6954.6

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1/2"	
3/8"	
No. 4	100
8	100
10	100
40	80
100	22
200	14.6

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 111.0
Optimum Moisture Content, % 13.9

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand

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LABORATORY REPORT

Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410643
Date of Report 07/25/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/17/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/17/91
Description: Regraded Tailings Authorized by E. Morales/UNC Date 07/17/91
Source of Material: 72950N & 57720E (B-29) Elevation 6953.8

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1/2"	100
3/8"	99
No. 4	99
10	99
40	73
100	28
200	19

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 110.3
Optimum Moisture Content, % 11.6

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410643
Date of Report 07/31/91
Reviewed by L. Wareshock

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/24/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/24/91
Description: Regraded Tailings* Authorized by E. Morales/UNC Date 07/24/91
Source of Material: 71950N & 57880E (B-42) Elevation 6954.8

*Fill Material

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	100
3/8"	99
No. 4	96
10	95
40	84
100	56
200	39

Plasticity Index, ASTM D4318

Liquid Limit 28
Plasticity Index 10

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 113.3
Optimum Moisture Content, % 14.8

Soils Classification ASTM D2487

Group Symbol SC
Group Name Clayey Sand

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410643
Date of Report 07/31/91
Reviewed by L. Wardsack

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/25/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/25/91
Description: Regraded Tailings Authorized by E. Morales/UNC Date 07/25/91
Source of Material: 72440N & 57000E (A-39) Elevation 6954.9

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	
3/8"	
No. 4	100
10	99
40	79
100	28
200	18

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 111.7
Optimum Moisture Content, % 13.8

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty Sand

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LABORATORY REPORT

Client: United Nuclear Corporation
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Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410643
Date of Report 07/31/91
Reviewed by L. Wardack

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/26/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/26/91
Description: Regraded Tailings* Authorized by E. Morales/UNC Date 07/26/91
Source of Material: 72090N & 57370E (E-38) Elevation 6950.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1"	100
3/4"	99
3/8"	97
No. 4	95
10	93
40	85
100	57
200	43

Plasticity Index, ASTM D4318

Liquid Limit	23
Plasticity Index	3

Soils Classification ASTM D2487

Group Symbol	SM
Group Name	Silty sand

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410716
Date of Report 08/08/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/29/91
Material: Silty sand w/sandstone pieces Submitted by H. Kuebler/WT Date 07/29/91
Description: Regraded Tailings Authorized by E. Morales/UNC Date 07/29/91
Source of Material: 72020N & 57430E (F-38) Elevation 6950.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1"	100
3/4"	95
3/8"	88
No. 4	84
10	82
40	67
100	24
200	17

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 116.3
Optimum Moisture Content, % 10.6

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand w/gravel

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410716
Date of Report 08/08/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/30/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/30/91
Description: Regraded Tailings Authorized by E. Morales/UNC Date 07/30/91
Source of Material: 72680N & 57390E (A-33) Elevation 6954.6

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	
3/8"	
No. 4	
10	100
40	74
100	29
200	20

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 112.3
Optimum Moisture Content, % 12.6

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand

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LABORATORY REPORT

Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410716
Date of Report 08/08/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/31/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/31/91
Description: Regraded Tailings Authorized by E. Morales/UNC Date 07/31/91
Source of Material: 72120N & 57020E (B-40) Elevation 6953.4

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	
3/8"	
No. 4	100
10	99
40	67
100	17
200	9.9

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410716
Date of Report 08/08/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/01/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 08/01/91
Description: Regraded Tailings Authorized by E. Morales/UNC Date 08/01/91
Source of Material: 73400N & 57950E (A-24) Elevation 6956.2

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	
3/8"	
No. 4	
10	100
40	79
100	34
200	22

Plasticity Index, ASTM D4318

Liquid Limit 21
Plasticity Index N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 117.3
Optimum Moisture Content, % 12.2

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand

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LABORATORY REPORT

Client: United Nuclear Corporation
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Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410716
Date of Report 08/13/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/06/91
Material: Silty sand w/sandstone pieces Submitted by H. Kuebler/WT Date 08/06/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 08/06/91
Source of Material: 72630N & 57460E (B-33) Elevation 6952.2

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1	100
3/4"	98
1/2"	93
3/8"	90
No. 4	86
10	84
40	64
100	23
200	16

Plasticity Index, ASTM D4318

Liquid Limit	N/V
Plasticity Index	N/P

Soils Classification ASTM D2487

Group Symbol	SM
Group Name	Silty sand

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410716
Date of Report 08/21/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/12/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/12/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 08/12/91
Source of Material: 72580N & 57540E (C-33) Elevation 6950

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1"	
1/2"	
3/8"	100
No. 4	98
10	97
40	94
100	72
200	55

Plasticity Index, ASTM D4318

Liquid Limit	29
Plasticity Index	11

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf	115.0
Optimum Moisture Content, %	13.0

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Job No. 3141K062
Invoice No. 31410716
Date of Report 08/21/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/13/91
Material: Silty sand Submitted by H. Kuebler/WT Date 08/13/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 08/13/91
Source of Material: 71960N & 57020E (C-41) Elevation 6953.3

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1"	
3/4"	100
3/8"	99
No. 4	98
10	97
40	87
100	39
200	26

Plasticity Index, ASTM D4318

Liquid Limit	N/V
Plasticity Index	N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf	113.5
Optimum Moisture Content, %	13.4

Soils Classification ASTM D2487

Group Symbol	SM
Group Name	Silty sand

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Job No. 3141K062
Invoice No. 31410716
Date of Report 08/21/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/16/91
Material: Silty sand w/sandstone pieces Submitted by H. Kuebler/WT Date 08/16/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 08/16/91
Source of Material: 72710N & 57530E (B-32) Elevation 6952.8

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1-1/2"	100
1"	99
3/4"	98
1/2"	92
3/8"	89
No. 4	84
No. 10	81
No. 40	65
No. 100	25
No. 200	16

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Moisture Density Relations ASTM D698 C

Maximum Dry Density, pcf 119.5
Optimum Moisture Content, % 11.2

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand w/gravel

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LABORATORY REPORT

Client: United Nuclear Corporation
Post Office Drawer QQ
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Job No. 3141K062
Invoice No. 31410716
Date of Report 08/26/91
Reviewed by J Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/22/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/22/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 08/22/91
Source of Material: 71950N & 57880E (B-42) Elevation 6954.8

Moisture Density Relations (1 point method)*

Maximum Dry Density, pcf 115.5
Optimum Moisture Content, % 13.0

The single point was tested in accordance with the applicable portions of ASTM D698 Method A.

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/06/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/26/91
Material: Silty clayey sand Submitted by H. Kuebler/WT Date 08/26/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 08/26/91
Source of Material: 72280N & 57400E (D-36) Elevation 6950.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1-1/2"	
1"	
3/4"	100
1/2"	98
3/8"	97
No. 4	94
No. 10	91
No. 40	83
No. 100	54
No. 200	40

Plasticity Index, ASTM D4318

Liquid Limit	23
Plasticity Index	5

Moisture Density Relations ASTM D698 C

Maximum Dry Density, pcf	118.0
Optimum Moisture Content, %	12.4

Soils Classification ASTM D2487

Group Symbol	SC-SM
Group Name	Silty clayey sand

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/17/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/11/91
Material: Silty sand Submitted by H. Kuebler/WT Date 09/11/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 09/11/91
Source of Material: 72150N & 57430E (E-37) Elevation 6950.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1-1/8"	100
1"	98
3/4"	98
3/8"	96
No. 4	93
No. 10	90
No. 40	77
No. 100	43
No. 200	33

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 120.8
Optimum Moisture Content, % 10.8

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/24/91
Reviewed by Joseph F Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/13/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/13/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 09/13/91
Source of Material: 72610N & 57950E (F-30) Elevation 6951.1

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	100
1/2"	100
3/8"	98
No. 4	96
No. 10	94
No. 40	89
No. 100	69
No. 200	51

Plasticity Index, ASTM D4318

Liquid Limit 29
Plasticity Index 11

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 109.5
Optimum Moisture Content, % 14.8

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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LABORATORY REPORT

Client: United Nuclear Corporation
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Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/24/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/13/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/13/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 09/13/91
Source of Material: 72300N & 57680E (F-34) Elevation 6950.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	100
1/2"	100
3/8"	97
No. 4	95
No. 10	91
No. 40	88
No. 100	71
No. 200	52

Plasticity Index, ASTM D4318

Liquid Limit	28
Plasticity Index	10

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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LABORATORY REPORT

Client: United Nuclear Corporation
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Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/24/91
Reviewed by Joseph E. Pullyn

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/16/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/16/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 09/16/91
Source of Material: 72550N & 58050E (G-30) Elevation 6950.6

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	100
1/2"	100
3/8"	99
No. 4	97
No. 10	95
No. 40	91
No. 100	70
No. 200	55

Plasticity Index, ASTM D4318

Liquid Limit 25
Plasticity Index 10

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 111.7
Optimum Moisture Content, % 15.4

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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LABORATORY REPORT

Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410844
Date of Report 09/24/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/19/91
Material: Silty clayey sand Submitted by H. Kuebler/WT Date 09/19/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 09/19/91
Source of Material: 72410N & 58100E (H-31) Elevation 6950.6

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	100
1/2"	100
3/8"	97
No. 4	95
No. 10	93
No. 40	88
No. 100	66
No. 200	49

Plasticity Index, ASTM D4318

Liquid Limit	24
Plasticity Index	6

Soils Classification ASTM D2487

Group Symbol	SC-SM
Group Name	Silty clayey sand

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LABORATORY REPORT

Client: United Nuclear Corporation
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Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/24/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/19/91
Material: Silty clayey sand Submitted by H. Kuebler/WT Date 09/19/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 09/19/91
Source of Material: 7241ON & 5810OE (H-31) Elevation 6950.6

Moisture Density Relations (1 point method)*

Single Point Data:

Dry Density, pcf	110.5
Moisture Content, %	12.4

The single point data falls on the same curve as that drawn for material sampled from D-36 on 08/29/91. Therefore, the following values should be used.

Maximum Dry Density, pcf	118.0
Optimum Moisture Content, %	12.4

*The single point was tested in accordance with the applicable portions of ASTM D698 Method A.

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LABORATORY REPORT

Client: United Nuclear Corporation
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Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/24/91
Reviewed by Joyce A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/18/91
Material: Clayey sand Submitted by H. Kuebler/WT Date 09/18/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 09/18/91
Source of Material: 72170N & 57640E (G-35) Elevation 6950.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	100
1/2"	100
3/8"	97
No. 4	95
No. 10	93
No. 40	87
No. 100	59
No. 200	42

Plasticity Index, ASTM D4318

Liquid Limit	26
Plasticity Index	9

Soils Classification ASTM D2487

Group Symbol	SC
Group Name	Clayey sand

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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 09/25/91

Material: Silty clayey sand Submitted by H. Kuebler/WT Date 09/25/91

Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 09/25/91

Source of Material: 7211ON & 5791OE (I-34) Elevation 6960.0

Moisture Density Relations (1 point method)*

Single Point Data:

Dry Density, pcf	111.6
Moisture Content, %	13.3

The single point data falls on the same curve as that drawn for material sampled from B-42 on 08/22/91. Therefore, the following values should be used.

Maximum Dry Density, pcf	113.3
Optimum Moisture Content, %	14.8

*The single point was tested in accordance with the applicable portions of ASTM D698 Method A.

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LABORATORY REPORT

Client: United Nuclear Corporation
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Gallup, New Mexico 87301

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

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/25/91
Material: Silty clayey sand Submitted by H. Kuebler/WT Date 09/25/91
Description: Regraded Tailings Surface Authorized by E. Morales/UNC Date 09/25/91
Source of Material: 72110N & 57910E (T-34) Elevation 6960.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1"	100
3/4"	100
3/8"	98
No. 4	96
No. 10	94
No. 40	89
No. 100	63
No. 200	40

Plasticity Index, ASTM D4318

Liquid Limit	26
Plasticity Index	6

Soils Classification ASTM D2487

Group Symbol	SM-SC
Group Name	Silty clayey sand

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APPENDIX D

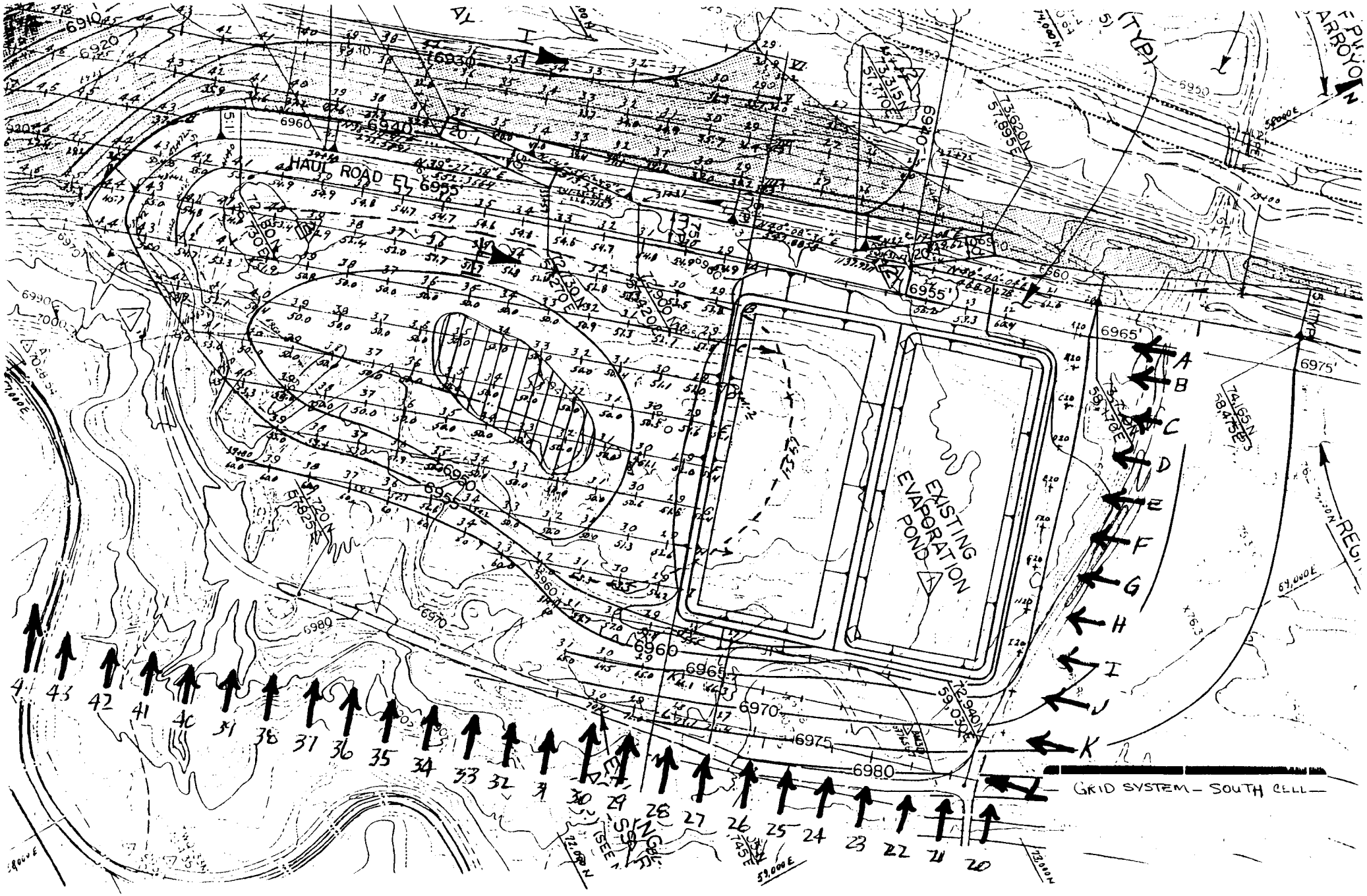
APPENDIX D

GEOTECHNICAL TEST RESULTS
INTERMEDIATE FILL

- Western Technologies, Inc.'s Summary
- Grid Map
- Sand Cone Field Density Tests
- Gradation/Atterberg Tests
- Proctor Tests

Intermediate Fill (South Cell)

Intermediate fill was placed in the South Cell to fill some existing low areas. Material used for this fill came from the Haul Road Embankment, South Cell Tailings, and the Old Churchrock Site Fill. Thirteen sandcone densities, thirteen gradation/Atterberg tests and 5 proctors were performed. These tests were not required by earthwork specifications, but were performed to aid UNC in their Radon Barrier Analyses. The fill material was placed with scrapers and dozers. This heavy equipment provided a moderate level of compaction.


HAUL ROAD
EXISTING EVAPORATION POND
GRID SYSTEM – SOUTH CELL –
A
B
C
D
E
F
G
H
I
J
K
L
20
21
22
23
24
25
26
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28
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36
37
38
41
42
43

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Intermediate Tailings Fill

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/11	Sandcone	B-36	72420	57260	6948.0	*	103.8	7.1	91	SM	n/a
07/15	Sandcone	E-29	72770	57930	6945	*	102.3	11.3	91	SM	n/a
07/16	Sandcone	G-30	72500	58040	6943.6	*	107.3	11.7	96	SM	n/a
07/17	Sandcone	H-29	72580	58190	6946.6	*	108.3	13.3	98	SM	n/a
	Sandcone	G-30	72550	58040	6943.6	*	110.1	14.3	100	SM	n/a
	Sandcone	G-32	72400	57900	6941.0	*	90.3	9.6	82	SM	n/a
07/18	Sandcone	D-30	72750	57800	6943.6	*	107.9	11.4	95	SM	n/a
	Sandcone	E-31	72610	57820	6943.1	*	108.2	12.1	95	SM	n/a
	Sandcone	F-31	72550	57900	6944.6	*	109.9	11.8	97	SM	Yes
	Sandcone	C-30	72820	57730	6945.5	*	111.3	12.5	98	SM	Yes
07/24	Sandcone	D-32	72600	57680	6945.0	*	106.5	10.9	97	SM	Yes
07/29	Sandcone	E-37	72210	57490	6946.0	*	110.2	8.1	95	SM	Yes
07/30	Sandcone	E-33	72450	57680	6941.0	*	106.2	12.1	97	SM	Yes

*Intermediate Tailings Fill
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/18/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Intermediate Tailings Fill
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 07/11/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	07/11/91	72420N & 57260E (B-36)	6948.0'

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		14.5	114.2	7.1	103.8	91	Yes	1-11-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~AASHTO T-191~~
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 D
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.

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Note: 6951.7'=Top of Regraded Tailing Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation
P.O. Drawer QQ
Gallup, NM 87305

30992

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/25/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Intermediate Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 07/15/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
2	07/15/91	72770N & 57930E (E-29)	6945'

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
2		14.3	112.3	11.3	102.3	91	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirement.
14. Tested D-1556/AASHTO T217
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.

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Note: 6951.6 '=Top of Regraded Tailir Surface.

*Report revised 08/08/91 to reflect correct moisture method.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87305

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/25/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand- Intermediate Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 07/16/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	07/16/91	72500N & 58040E (G-30)	6943.6'

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		14.3	112.3	11.7	107.3	96	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirement
14. Tested D-1556/AASHTO T-191
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: 6950.6'=Top of Regraded Tailin Surface.

*Report revised 08/08/91 to reflect correct moisture method.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation
P.O. Drawer QQ
Gallup, NM 87305

30992

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/25/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Intermediate Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 07/17/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	07/17/91	72580N & 58190E (H-29)	6946.6'

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		11.6	110.3	13.3	108.3	98	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirement.
14. Tested D-1556/AASHTO T-217
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.

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Note: 6952.6'=Top of Regraded Tailing Surface.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87305

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/25/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Intermediate Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date 07/17/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
2	07/17/91	72550N & 58040E (G-30)	6943.6'

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
2		11.6	110.3	14.3	110.1	100	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirement.
14. Tested D-1556/AASHTO T-191
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 D 2216*
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.

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Note: 6950.6'=Top of Regraded Tailings Surface.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87305

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/25/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Intermediate Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date 07/17/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
3	07/17/91	72400N & 57900E (G-32)	6941'

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
3		11.6	110.3	9.6	90.3	82	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirement.
14. Tested D-1556/AASHTO T-217
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.

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Note: 6950.0'=Top of Regraded Tailings Surface.

*Report revised 08/08/91 to reflect correct moisture method.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87305

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/25/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Intermediate Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 07/18/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	07/18/91	72750N & 57800E (D-30)	6943.6'

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		13.2	113.7	11.4	107.9	95	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirement.
14. Tested D-1556/AXXXXXXXX
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

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Note: 6951.1'=Top of Regraded Tailings Surface.

*Report revised 08/08/91 to reflect correct moisture method.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation
P.O. Drawer QQ
Gallup, NM 87305

30992

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/25/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Intermediate Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 07/18/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
2	07/18/91	72610N & 57820E (E-31)	6943.1'

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
2		13.2	113.7	12.1	108.2	95	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirement.
14. Tested D-1556/AASHTO T-191
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.

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Note: 6950'=Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87305

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/31/91
Reviewed By L. Waresbach

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: SM-Silty sand-Intermediate Tailings
Authorized By: E. Morales/Client Date 07/22/91
Source of Material: Native
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	07/22/91	72550N & 57900E (F-31)	6944.6
2	07/22/91	72820N & 57730E (C-30)	6945.5

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics Moisture %	In-Place Characteristics Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		13.2	113.7	11.8	109.9	97	n/a	1-13-14-18
2		13.2	113.7	12.5	111.3	98	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirement.
14. Tested D-1556/~~XXXXXXXX~~
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.

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Note: Test #1 - 6944.6=Top of Regraded Tailing Surface.
Test #2 - 6945.5=Top of Regraded Tailing Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87305

Job No. 3141K062
Lab/Invoice No. 31410643
Date 07/31/91
Reviewed By L. Warnock

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: SM-Silty sand-Intermediate Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date 07/24/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	07/24/91	72600N & 57680E (D-32)	6945.0

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		12.8	109.5	10.9	106.5	97	Yes	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. _____
14. Tested D-1556/~~XXXXXXXXX~~
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.

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Note: 6945.0=Top of Regraded Tailings Surface

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, New Mexico 87305

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/08/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand w/sandstone pieces Intermediate Tailings
Authorized By: E. Morales/Client Date 07/29/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. C
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	07/29/91	72210N & 57490E (E-37)	6946.0

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		10.6	116.3	8.1	110.2	95	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirement
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: 6950.0 = Top of Regraded Tailings Surface.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallip, New Mexico 87305

Job No. 3141K062
Lab/Invoice No. 31410716
Date 08/08/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty sand-Intermediate Tailings
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date 07/30/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	07/30/91	72450N & 57680E (E-33)	6941.0

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		12.8	109.5	12.1	106.2	97	n/a	1-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. no compaction requirements.
14. Tested D-1556/~~AASHTO T-191~~
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.

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Note: 6950.0 = Top of Regraded Tailing Surface

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Gradation/Atterberg Tests
Intermediate Tailings Fill

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft^3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/15	Gradation/ Atterberg	E-29	72770	57930	6945	*	-	-	-	SM	-
07/18	Gradation/ Atterberg	B-30	72750	57800	6943.6	*	-	-	-	SM	-
07/19	Gradation/ Atterberg	D-31	72610	57820	6943.6	*	-	-	-	SM	-
07/22	Gradation/ Atterberg	A-43	71930	56730	6950.4	**	-	-	-	SM	-
07/23	Gradation/ Atterberg	D-32	72600	57680	6945.0	*	-	-	-	SM	-
08/02	Gradation/ Atterberg	D-34	72430	57450	6940.0	*	-	-	-	SM	-
08/07	Gradation/ Atterberg	E-29	72770	57930	6944.3	*	-	-	-	CL	-
08/08	Gradation/ Atterberg	D-31	72660	57730	6946.7	*	-	-	-	CL	-
08/09	Gradation/ Atterburg	C-32	72650	57600	6948.2	*	-	-	-	CL-ML	-
08/14	Gradation/ Atterberg	G-30	72550	58040	6947.0	*	-	-	-	SC/SM	-
08/15	Gradation/ Atterberg	G-31	72610	57820	6946.5	*	-	-	-	CL	-
08/28	Gradation/ Atterberg	from old Church Rock site for intermediate fill for South Cell								CL	
09/10	Gradation/ Atterberg	Old Church Rock Site Borrow (Used as Intermediate Fill)								CL	n/a

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Proctor Tests
Intermediate Tailings Fill

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft^3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
07/15	Proctor ASTM D698	E-29	72770	57930	6945	*	112.3	14.3	-	SM	-
07/18	Proctor ASTM D698	B-30	72750	57800	6943.6	*	113.7	13.2	-	SM	-
07/19	Proctor ASTM D698	G-31	72610	57820	6943.6	*	111.6	14.0	-	SM	-
07/22	Proctor ASTM D698	A-43	71930	56730	6950.4	**	114.2	13.6	-	SM	-
07/23	Proctor ASTM D698	D-32	72600	57680	6945.0	*	109.5	12.8	-	SM	-

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

LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410643
Date of Report 07/25/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/15/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/15/91
Description: Intermediate Tailings Authorized by E. Morales/UNC Date 07/15/91
Source of Material: 72770N & 57930E (E-29) Elevation 6945.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1/2"	100
3/8"	100
No. 4	99
10	98
40	80
100	35
200	23

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 112.3
Optimum Moisture Content, % 14.3

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand

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Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410643
Date of Report 07/25/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/18/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/18/91
Description: Intermediate Tailings Authorized by E. Morales/UNC Date 07/18/91
Source of Material: 72750N & 57800E (B-30) Elevation 6943.6

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1/2"	
3/8"	
No. 4	100
10	99
40	80
100	31
200	19

Plasticity Index, ASTM D4318

Liquid Limit N/V
Plasticity Index N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 113.7
Optimum Moisture Content, % 13.2

Soils Classification ASTM D2487

Group Symbol SM
Group Name Silty sand

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Job No. 3141K062
Invoice No. 31410643
Date of Report 07/25/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/19/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/19/91
Description: Intermediate Tailings Authorized by E. Morales/UNC Date 07/19/91
Source of Material: 72610N & 57820E (G-31) Elevation 6643.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1/2"	
3/8"	100
No. 4	100
10	99
40	72
100	23
200	13

Plasticity Index, ASTM D4318

Liquid Limit	N/V
Plasticity Index	N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf	111.6
Optimum Moisture Content, %	14.0

Soils Classification ASTM D2487

Group Symbol	SM
Group Name	Silty sand

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Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410643
Date of Report 07/31/91
Reviewed by L. Warstack

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/22/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/22/91
Description: Non Tailings Authorized by E. Morales/UNC Date 07/22/91
Source of Material: 71930N & 56730E (A-43) Elevation 6950.4

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	100
3/8"	92
No. 4	88
10	86
40	62
100	22
200	15

Plasticity Index, ASTM D4318

Liquid Limit	N/V
Plasticity Index	N/P

Moisture Density Relations ASTM D698 C

Maximum Dry Density, pcf	114.2
Optimum Moisture Content, %	13.6

Soils Classification ASTM D2487

Group Symbol	SM
Group Name	Silty sand

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Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410643
Date of Report 07/31/91
Reviewed by L. Wareebock

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 07/23/91
Material: SM-Silty sand Submitted by H. Kuebler/WT Date 07/23/91
Description: Intermediate Tailings Authorized by E. Morales/UNC Date 07/23/91
Source of Material: 72600N & 57680E (D-32) Elevation 6945.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	
3/8"	
No. 4	
10	100
40	73
100	21
200	12

Plasticity Index, ASTM D4318

Liquid Limit	N/V
Plasticity Index	N/P

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf	109.5
Optimum Moisture Content, %	12.8

Soils Classification ASTM D2487

Group Symbol	SM
Group Name	Silty sand

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LABORATORY REPORT

Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410716
Date of Report 08/13/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/07/91
Material: Lean clay w/sand Submitted by H. Kuebler/WT Date 08/07/91
Description: Intermediate Fill Authorized by E. Morales/UNC Date 08/07/91
Source of Material: 72770N & 57930E (E-29) Elevation 6944.3

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1	
3/4"	
1/2"	
3/8"	100
No. 4	100
10	99
40	98
100	93
200	79

Plasticity Index, ASTM D4318

Liquid Limit 41
Plasticity Index 23

Soils Classification ASTM D2487

Group Symbol CL
Group Name Lean clay w/sand

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Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410716
Date of Report 08/13/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/08/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/08/91
Description: Intermediate Fill Authorized by E. Morales/UNC Date 08/08/91
Source of Material: 72660N & 57730E (D-31) Elevation 6946.7

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1	
3/4"	
1/2"	
3/8"	100
No. 4	97
10	94
40	91
100	73
200	57

Plasticity Index, ASTM D4318

Liquid Limit 29
Plasticity Index 10

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410716
Date of Report 08/13/91
Reviewed by Joseph C. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/09/91
Material: Sandy silty clay Submitted by H. Kuebler/WT Date 08/09/91
Description: Intermediate Fill Authorized by E. Morales/UNC Date 08/09/91
Source of Material: 72650N & 57600E (C-32) Elevation 6948.2

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
1	
3/4"	100
1/2"	
3/8"	98
No. 4	97
10	93
40	89
100	72
200	52

Plasticity Index, ASTM D4318

Liquid Limit 26
Plasticity Index 6

Soils Classification ASTM D2487

Group Symbol CL-ML
Group Name Sandy silty clay

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Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410716
Date of Report 08/21/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/14/91
Material: Silty sand w/gravel Submitted by H. Kuebler/WT Date 08/14/91
Description: Intermediate Fill Authorized by E. Morales/UNC Date 08/14/91
Source of Material: 72550N & 58040E (G-30) Elevation 6947.0
Borrow Pit #2 Stockpile

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
4"	100
3"	94
2"	88
1-1/2"	87
1"	84
3/4"	81
1/2"	79
3/8"	77
No. 4	75
No. 10	73
No. 40	67
No. 100	28
No. 200	21

Plasticity Index, ASTM D4318

Liquid Limit	20
Plasticity Index	4

Soils Classification ASTM D2487

Group Symbol	SC-SM
Group Name	Silty clayey sand with gravel

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LABORATORY REPORT

Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410844
Date of Report 09/06/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Intermediate Fill Authorized by R. Morales/UNC Date 08/28/91
Source of Material: Old Church Rock Fill

Unit Weights (ASTM C-29) Modified*

Loose Unit Weight, pcf	77
Unit Weight by Rodding, pcf	85

*Exceptions to Test Procedure: A 1/30 cubic foot measure was used and the sample was tested at a moisture content of 5.6%. Unit weights reported above are wet weights.

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LABORATORY REPORT

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

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/06/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Intermediate Fill Authorized by E. Morales/UNC Date 08/28/91
Source of Material: Old Church Rock Fill

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	
1/2"	
3/8"	100
No. 4	99
No. 10	98
No. 40	95
No. 100	70
No. 200	57

Plasticity Index, ASTM D4318

Liquid Limit	29
Plasticity Index	9

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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LABORATORY REPORT

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

Job No. 3141KO62
Invoice No. 31410844
Date of Report 09/17/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/10/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/10/91
Description: Intermediate Fill Authorized by E. Morales/UNC Date 09/10/91
Source of Material: Old Church Rock Fill

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative
3/4"	
1/2"	
3/8"	
No. 4	100
No. 10	99
No. 40	94
No. 100	74
No. 200	60

Plasticity Index, ASTM D4318

Liquid Limit 32
Plasticity Index 11

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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