

Appendix D

Appendix D

Placement and Quality Control Test Records for the AGTI Enhancement:

Regrade, Toe, and East Canyon Creek Realignment

Table D.1. Daily Quantities, Quality Control Test Frequencies, and Sand-Cone Correlation Test Results for the AGTI Regrade

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements:

Field Compaction Tests: 1: 1000 CY

Proctors: 1: 5000 CY

Sand-Cones: 1:10 NG tests

Date	Total Quantities		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency			
	Daily Yardage	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)	
6/5/00	2,940	2,940		0	--		0	--		0	--	
6/7/00	1,512	4,452		0	--		0	--		0	--	
6/14/00	84	4,536		0	--		0	--		0	--	
6/19/00	63	4,599		0	--		0	--		0	--	
6/21/00	1,533	6,132		0	--		0	--		0	--	
6/22/00	3,423	9,555	<i>Note:</i> Only a small portion of material was ready for testing in 2000; see 2001 tests below. No material was placed in 2001 - AGTI construction activities this year consisted only of grading and compaction of the existing AGTI cover.								0	--
6/23/00	1,008	10,563									0	--
6/26/00	609	11,172									0	--
6/27/00	1,470	12,642									0	--
7/5/00	399	13,041		0	--		0	--		0	--	
7/6/00	1,659	14,700		0	--		0	--		0	--	
7/7/00	399	15,099		0	--		0	--		0	--	
7/10/00	252	15,351		0	--		0	--		0	--	
7/14/00	1,092	16,443		0	--		0	--		0	--	
8/7/00	441	16,884		0	--		0	--		0	--	
8/8/00	0	16,884		0	--	1	1	1: 16,884		0	--	
8/16/00	3,612	20,496		0	--		1	1: 20,496		0	--	
8/22/00	0	20,496	1	1	1: 20,496		1	1: 20,496		0	--	
8/23/00	0	20,496	1	2	1: 10,248		1	1: 20,496	1	1	1: 2	
8/24/00	0	20,496	1	3	1: 6832		1	1: 20,496		1	1: 3	
9/6/00	756	21,252		3	1: 7084		1	1: 21,252		1	1: 3	
4/24/01	0	21,252	2	5	1: 4250	3	4	1: 5,313		1	1: 5	
4/25/01	0	21,252	2	7	1: 3036		4	1: 5,313	2	3	1: 2	
6/21/01	0	21,252	8	15	1: 1417		4	1: 5,313	1	4	1: 4	
8/5/01	0	21,252	4	19	1: 1119		4	1: 5,313	1	5	1: 4	
9/17/01	0	21,252	2	21	1: 1012	1	5	1: 4,250		5	1: 4	
10/2/01	0	21,252	2	23	1: 924	1	6	1: 3,542		5	1: 5	
10/3/01	0	21,252	4	27	1: 787		6	1: 3,542		5	1: 5	
10/4/01	0	21,252	2	29	1: 733		6	1: 3,542		5	1: 6	

Table D.1. Daily Quantities, Quality Control Test Frequencies, and Sand-Cone Correlation Test Results for the AGTI Regrade

Sand-Cone Correlation Test Results

Date	Compaction Test ID	Nuclear Gauge Test		Sand-Cone Compaction Tests		Sand-Cone Correlation Results	
		In-Place Wet Unit Weight (pcf)	Moisture Content (%)	In-Place Wet Unit Weight (pcf)	Moisture Content (%)	Wet Unit Weight Variation (%)	Moisture Content Variation (%)
8/23/00	AGRG-3	130.7	9.9	134.0	10.3	2.5	0.4
4/25/01	AGRG-6	134.4	15.8	133.1	18.6	-1.0	2.8
4/25/01	AGRG-7	133.1	12.6	133.1	15.0	0.0	2.4
6/21/01	AGRG-13	130.3	10.4	129.1	10.9	-0.9	0.5
8/5/01	AGRG-17	128.7	10.3	127.4	10.5	1.4	-0.9

pcf - pounds per cubic foot

Number of sand-cone tests: 5
average percent variation (on absolute value): **1.2**
standard deviation: 0.9

Note:

For the Regrading of the Previously Existing Above-Grade Tailings Impoundment Cover, a sand-cone correlation test was performed for every ten nuclear gauge tests. Correlations were deemed acceptable if the average of ten nuclear test results vs. sand cone test results comparisons met the following criteria:

sand-cone method wet density: +/- 3%
 sand-cone method moisture content: +/- 2%

As indicated above, these criteria were met even for discrete results (vs. running average).

Table D.2. Field Compaction Test Results for the Above-Grade Tailings Impoundment Design Enhancement: Regrade of the Existing Cover

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed.

Max.= Maximum; FG = Finish Grade; P = Pass; F Comp = Fails Compaction. See summary statistics at the end of this table.

Note that requirements differed according to location - in the enhancement area (rows shaded below), requirements were more stringent than in the existing cover area.

For the enhancement area, 95% compaction and moisture content \geq Optimum - 2 was required. For other areas, a minimum of 90% compaction and no moisture requirement applied.

Compaction Test ID	Date	Location		Lift or Elevation	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture	Percent Compaction		
								Requirements:	NA or ≥ Opt. -2	≥ 90 - 95		Requirements varied; see above.
AGRG-1	8/22/00	792980	838600		AGRG-PR1	115.3	13.3	112.3	13.0	97.4	P	Existing cover area
AGRG-2	8/23/00	792980	838600	FG	AGRG-PR1	115.3	13.3	117.2	10.7	101.6	P	" "
AGRG-3 *	8/24/00	793230	838440	FG	AGRG-PR1	115.3	13.3	118.9	9.9	103.1	P	" "
AGRG-4	4/24/01	794830	837895	FG	AGRG-PR3	113.2	14.0	112.1	15.7	99.0	P	Enhancement area
AGRG-5	4/24/01	793670	837420	FG	AGRG-PR3	113.2	14.0	111.7	14.6	98.7	P	Existing cover area
AGRG-6 *	4/25/01	794300	837100	FG	AGRG-PR3	113.2	14.0	116.1	15.8	102.6	P	Enhancement area
AGRG-7 *	4/25/01	794200	837700	FG	AGRG-PR3	113.2	14.0	118.1	12.6	104.3	P	Existing cover area
AGRG-8	6/21/01	794620	838500	FG	AGRG-PR3	113.2	14.0	114.7	14.7	101.3	P	Enhancement area
AGRG-9	6/21/01	794430	838190	FG	AGRG-PR3	113.2	14.0	111.8	16.6	98.8	P	Existing cover area
AGRG-10	6/21/01	794400	839170	FG	AGRG-PR2	114.4	13.5	114.0	12.1	99.7	P	Enhancement area
AGRG-11	6/21/01	794100	839040	FG	AGRG-PR2	114.4	13.5	108.7	18.9	95.0	P	Existing cover area
AGRG-12	6/21/01	793850	838750	FG	AGRG-PR2	114.4	13.5	113.9	15.0	99.6	P	" "
AGRG-13 *	6/21/01	793940	838230	FG	AGRG-PR2	114.4	13.5	114.1	11.6	99.7	P	" "
AGRG-14	6/21/01	793470	838070	FG	AGRG-PR2	114.4	13.5	111.0	17.2	97.0	P	" "
AGRG-15	6/21/01	793480	838510	FG	AGRG-PR2	114.4	13.5	110.7	17.7	96.8	P	" "
AGRG-16	8/5/01	793750	839680	FG	AGRG-PR4	115.5	13.2	113.7	10.7	98.4	P	" "
AGRG-17 *	8/5/01	793440	839310	FG	AGRG-PR4	115.5	13.2	116.7	10.3	101.0	P	" "
AGRG-18	8/5/01	793020	839140	FG	AGRG-PR4	115.5	13.2	118.3	10.5	102.4	P	" "
AGRG-19	8/5/01	792950	838380	FG	AGRG-PR4	115.5	13.2	119.5	7.9	103.5	P	" "
AGRG-20	9/17/01	794075	839890	FG	AGRG-PR5	119.3	13.0	117.9	13.8	98.8	P	Enhancement area
AGRG-21	9/17/01	793920	840000	FG	AGRG-PR5	119.3	13.0	116.8	12.8	97.9	P	" "
AGRG-22	10/2/01	794000	839995	FG	AGRG-PR6	115.8	14.3	116.2	12.8	100.3	P	" "
AGRG-23	10/2/01	794260	839993	FG	AGRG-PR6	115.8	14.3	114.1	13.4	98.5	P	" "
AGRG-24	10/3/01	793495	839850	FG	AGRG-PR6	115.8	14.3	115.4	15.0	99.7	P	" "
AGRG-25	10/3/01	793625	839950	FG	AGRG-PR6	115.8	14.3	112.3	14.7	97.0	P	" "
AGRG-26	10/3/01	793850	839950	FG	AGRG-PR6	115.8	14.3	113.6	13.6	98.1	P	" "
AGRG-27	10/3/01	794000	840000	FG	AGRG-PR6	115.8	14.3	112.0	13.1	96.7	P	" "
AGRG-28	10/4/01	794125	839940	FG	AGRG-PR6	115.8	14.3	116.7	15.1	100.8	P	" "
AGRG-29	10/4/01	794030	839985	FG	AGRG-PR6	115.8	14.3	114.5	13.5	98.9	P	" "

Field density and moisture tests were taken using a nuclear density gauge. The gauge was field standardized at each test location and was correlated by a Sand Cone Test at a minimum frequency of one for every ten nuclear gauge tests. Field rock corrections were performed at each compaction test location.

<i>Total Number of Tests (N):</i>	29		
<i>Total Quantities placed:</i>	21,252	cubic yards (CY)	
<i>Frequency:</i>	1: 733 CY	Exceeds the required frequency of 1:1000 CY.	
<i>average:</i>	114.6	13.6	99.5
<i>minimum:</i>	108.7	7.9	95.0
<i>maximum:</i>	119.5	18.9	104.3
<i>standard deviation:</i>	2.7	2.5	2.3

**Table D.3. Daily Quantities and Quality Control Test Results for the Above-Grade Tailings Impoundment Design Enhancement:
Toe Protection (2000-2002)**

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements:

Field Compaction Tests: 1: 500 CY

Proctors: 1: 5000 CY

Sand-Cones: 1:10 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily Yardage	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)
8/14/00	0	0	2	2	1: 0	1	1	1: 0		0	--
8/15/00	2,715	2,715	7	9	1: 302	1	2	1: 1358	2	2	1: 5
8/16/00	1,422	4,137	2	11	1: 376	1	3	1: 1379		2	1: 6
8/17/00	972	5,109		11	1: 464		3	1: 1703		2	1: 6
10/12/00	0	5,109		11	1: 464		3	1: 1703	1	3	1: 4
10/13/00	0	5,109	3	14	1: 365	1	4	1: 1,277		3	1: 5
10/18/00	0	5,109	1	15	1: 341		4	1: 1,277		3	1: 5
5/23/01	0	5,109	4	19	1: 269	1	5	1: 1,022		3	1: 6
6/7/01	1,500	6,609		19	1: 348		5	1: 1,322		3	1: 6
6/8/01	1,239	7,848	6	25	1: 314	2	7	1: 1,121		3	1: 8
6/11/01	2,898	10,746	6	31	1: 347		7	1: 1,535	1	4	1: 8
6/20/01	0	10,746	5	36	1: 299	1	8	1: 1,343	1	5	1: 7
9/7/01	108	10,854		36	1: 302		8	1: 1,357		5	1: 7
9/10/01	7,407	18,261		36	1: 507		8	1: 2,283		5	1: 7
9/11/01	5,313	23,574	15	51	1: 462	4	12	1: 1,965		5	1: 10
9/12/01	3,486	27,060	11	62	1: 436	1	13	1: 2,082		5	1: 12
9/13/01	4,137	31,197	19	81	1: 385		13	1: 2,400		5	1: 16
9/14/01	4,746	35,943	15	96	1: 374	1	14	1: 2,567		5	1: 19
9/17/01	168	36,111		96	1: 376		14	1: 2,579		5	1: 19
10/2/01	1,701	37,812		96	1: 394		14	1: 2,701		5	1: 19
10/3/01	1,722	39,534	5	101	1: 391	1	15	1: 2,636	5	10	1: 10
10/9/01	720	40,254		101	1: 399		15	1: 2,684		10	1: 10
10/30/01	1,680	41,934		101	1: 415		15	1: 2,796		10	1: 10
10/31/01	342	42,276	3	104	1: 407	1	16	1: 2,642		10	1: 10
11/6/01	774	43,050		104	1: 414		16	1: 2,691		10	1: 10
11/7/01	1,224	44,274		104	1: 426		16	1: 2,767		10	1: 10
11/9/01	936	45,210		104	1: 435		16	1: 2,826		10	1: 10
11/12/01	144	45,354		104	1: 436		16	1: 2,835		10	1: 10
11/13/01	54	45,408		104	1: 437		16	1: 2,838		10	1: 10
5/6/02	0	45,408	4	108	1: 420	1	17	1: 2,671		10	1: 11
5/9/02	1,920	47,328	3	111	1: 426		17	1: 2,784		10	1: 11
5/10/02	585	47,913	4	115	1: 417	1	18	1: 2,662		10	1: 12
5/17/02	3,732	51,645		115	1: 449		18	1: 2,869		10	1: 12
5/20/02	2,688	54,333		115	1: 472		18	1: 3,019		10	1: 12

**Table D.3. Daily Quantities and Quality Control Test Results for the Above-Grade Tailings Impoundment Design Enhancement:
Toe Protection (2000-2002)**

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements:

Field Compaction Tests: 1: 500 CY

Proctors: 1: 5000 CY

Sand-Cones: 1:10 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily Yardage	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio ((NG tests)
5/21/02	2,676	57,009	10	125	1: 456	1	19	1: 3,000		10	1: 13
5/22/02	1,689	58,698	7	132	1: 445	1	20	1: 2,935		10	1: 13
5/23/02	546	59,244		132	1: 449		20	1: 2,962		10	1: 13
5/24/02	714	59,958	3	135	1: 444		20	1: 2,998		10	1: 14
5/28/02	1,173	61,131		135	1: 453		20	1: 3,057		10	1: 14
5/29/02	1,071	62,202	2	137	1: 454		20	1: 3,110		10	1: 14
5/30/02	420	62,622		137	1: 457		20	1: 3,131		10	1: 14
5/31/02	420	63,042		137	1: 460		20	1: 3,152		10	1: 14
6/5/02	0	63,042	2	139	1: 454	1	21	1: 3,002		10	1: 14
6/6/02	441	63,483	3	142	1: 447		21	1: 3,023	1	11	1: 13
6/10/02	525	64,008	2	144	1: 445		21	1: 3,048	1	12	1: 12
6/12/02	525	64,533		144	1: 448		21	1: 3,073	1	13	1: 11
6/17/02	273	64,806		144	1: 450		21	1: 3,086		13	1: 11
6/18/02	1,029	65,835		144	1: 457		21	1: 3,135		13	1: 11
7/12/02	0	65,835	2	146	1: 451	1	22	1: 2,993		13	1: 11
7/30/02	3,276	69,111	6	152	1: 455		22	1: 3,141	1	14	1: 11
8/16/02	0	69,111	3	155	1: 446	1	23	1: 3,005	1	15	1: 10
9/5/02	0	69,111	2	157	1: 440	1	24	1: 2,880	1	16	1: 10
9/9/02	715	69,826		157	1: 445		24	1: 2,909		16	1: 10
9/10/02	450	70,276	3	160	1: 439		24	1: 2,928	1	17	1: 9
9/11/02	1,296	71,572	3	163	1: 439	1	25	1: 2,863		17	1: 10
9/12/02	1,548	73,120	5	168	1: 435		25	1: 2,925	1	18	1: 9

Total Quantities Placed for the Above-Grade Toe Protection, Summary by Year

Year	Cu Yds Placed
2000	5,109
2001	40,299
2002	27,712
TOTAL:	73,120

Table D.4. Field Compaction Test Results for the Above-Grade Tailings Impoundment Enhancement Toe Protection

Note: R denotes Re-Test sample. * Indicates that Sand-Cone Correlation performed.

Max.= Maximum; SG (Subgrade) = Original Ground Surface; FG = Finish Grade; P = Pass; F Comp = Fails Compaction. F Moist = Fails Moisture; F C&M = Fails Compaction & Moisture.

Compaction Test ID	Date	Location		Lift or Elevation	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture	Percent Compaction		
								<i>Requirements:</i>	NA or \geq Opt. -2	$\geq 90 - 95$		<i>Requirements varied; see above.</i>
T1	8/14/00	792300	838947	SG	TT-1	113.8	13.6	109.9	14.0	96.6	P	Subgrade, so no moisture requirement.
T2	8/14/00	792390	839285	SG	TT-2	113.8	13.6	128.1	7.4	112.6	P	Subgrade, so no moisture requirement.
T3	8/15/00	792305	839015	1	TT-2	113.8	13.6	112.5	12.1	98.9	P	
T4	8/15/00	792490	839440	2	TT-2	113.8	13.6	111.4	10.9	97.9	P	
T5	8/15/00	792370	839245	3	TT-2	113.8	13.6	113.0	10.0	99.3	P	
T6	8/15/00	792480	839415	4	TT-2	113.8	13.6	113.1	11.1	99.4	P	
T7	8/15/00	792320	839040	5	TT-2	113.8	13.6	112.6	16.4	98.9	P	
T8	8/15/00	792390	839255	6	TT-3	117.1	12.6	113.4	12.4	96.8	P	
T9	8/15/00	792315	838980	7	TT-3	117.1	12.6	112.3	9.2	95.9	P	
T10	* 8/16/00	792413	839280	FG	TT-3	117.1	12.6	118.0	9.0	100.8	P	
T11	* 8/16/00	792492	839450	FG	TT-3	117.1	12.6	118.2	10.8	100.9	P	
T12	* 10/13/00	794900	838350	SG	TT-4	117.5	12.9	122.1	11.3	103.9	P	Subgrade, so no moisture requirement.
T13	10/13/00	794790	838720	SG	TT-4	117.5	12.9	121.5	9.8	103.4	P	Subgrade, so no moisture requirement.
T14	10/13/00	794730	839140	SG	TT-4	117.5	12.9	114.4	7.3	97.4	P	Subgrade, so no moisture requirement.
T15	10/18/00	794430	839900	SG	TT-4	117.5	12.9	115.0	8.2	97.9	P	Subgrade, so no moisture requirement.
T16	5/23/01	794158	836723	SG	TT-5	121.2	11.5	121.1	8.5	99.9	P	Subgrade, so no moisture requirement.
T17	5/23/01	794386	836799	SG	TT-5	121.2	11.5	121.6	9.0	100.3	P	Subgrade, so no moisture requirement.
T18	5/23/01	794484	836828	SG	TT-5	121.2	11.5	124.6	7.4	102.8	P	Subgrade, so no moisture requirement.
T19	5/23/01	794644	836906	SG	TT-5	121.2	11.5	120.2	9.3	99.2	P	Subgrade, so no moisture requirement.
T20	6/8/01	794100	836710	1	TT-6	114.8	14.5	111.4	16.2	97.0	P	
T21	6/8/01	794800	837010	1	TT-6	114.8	14.5	111.3	17.0	97.0	P	
T22	6/8/01	794450	836820	1	TT-6	114.8	14.5	109.1	15.0	95.0	P	
T23	6/8/01	794400	836810	1	TT-6	114.8	14.5	111.2	17.0	96.9	P	
T24	6/8/01	794250	836740	2	TT-6	114.8	14.5	116.1	14.5	101.1	P	
T25	6/8/01	794800	837000	3	TT-6	114.8	14.5	109.7	16.4	95.6	P	
T26	6/11/01	794350	836800	3	TT-6	114.8	14.5	117.7	13.1	102.5	P	
T27	6/11/01	794700	836930	4	TT-6	114.8	14.5	109.0	15.0	95.0	P	Test passed by QC officer.
T28	6/11/01	794400	836800	4	TT-6	114.8	14.5	112.2	15.6	97.7	P	
T29	* 6/11/01	794250	836750	5	TT-6	114.8	14.5	121.2	12.4	105.6	P	Test passed by QC officer.
T30	6/11/01	794700	836920	6	TT-7	114.5	14.8	112.1	15.9	97.9	P	
T31	6/11/01	794280	836750	6	TT-7	114.5	14.8	113.8	13.7	99.4	P	
T32	6/20/01	794956	837190	SG	TT-8	119.8	12.5	116.5	13.6	97.2	P	Subgrade, so no moisture requirement.
T33	6/20/01	794970	837318	SG	TT-8	119.8	12.5	117.5	13.2	98.1	P	Subgrade, so no moisture requirement.
T34	6/20/01	794980	837413	SG	TT-8	119.8	12.5	118.5	9.4	98.9	P	Subgrade, so no moisture requirement.
T35	6/20/01	794963	837753	SG	TT-8	119.8	12.5	119.2	10.3	99.5	P	Subgrade, so no moisture requirement.
T36	* 6/20/01	795020	838017	SG	TT-8	119.8	12.5	117.2	13.9	97.8	P	Subgrade, so no moisture requirement.
T37	9/11/01	795010	837580	1	TT-9	118.1	12.0	116.8	12.5	98.9	P	

Table D.4. Field Compaction Test Results for the Above-Grade Tailings Impoundment Enhancement Toe Protection

Note: R denotes Re-Test sample. * Indicates that Sand-Cone Correlation performed.

Max.= Maximum; SG (Subgrade) = Original Ground Surface; FG = Finish Grade; P = Pass; F Comp = Fails Compaction. F Moist = Fails Moisture; F C&M = Fails Compaction & Moisture.

Compaction Test ID	Date	Location		Lift or Elevation	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture	Percent Compaction		
								Requirements:	NA or ≥ Opt. -2	≥ 90 - 95		Requirements varied; see above.
T38	9/11/01	795000	837745	1	TT-9	118.1	12.0	119.5	11.6	101.2	P	
T39	9/11/01	795010	837950	1	TT-9	118.1	12.0	118.2	11.1	100.1	P	
T40	9/11/01	795050	838100	1	TT-9	118.1	12.0	112.5	11.9	95.3	P	
T41	9/11/01	794960	838225	1	TT-9	118.1	12.0	112.7	12.7	95.4	P	
T42	9/11/01	794995	837855	1	TT-9	118.1	12.0	113.2	11.5	95.9	P	
T43	9/11/01	795000	837655	1	TT-9	118.1	12.0	113.5	13.0	96.1	P	
T44	9/11/01	794980	837475	1	TT-9	118.1	12.0	117.0	12.5	99.1	P	
T45	9/11/01	794985	837585	2	TT-9	118.1	12.0	115.2	11.2	97.5	P	
T46	9/11/01	794970	837690	2	TT-9	118.1	12.0	113.5	13.7	96.1	P	
T47	9/11/01	794940	837799	2	TT-10	114.2	12.2	118.3	11.2	103.6	P	
T48	9/11/01	794965	837900	2	TT-10	114.2	12.2	120.5	11.1	105.5	P	
T49	9/11/01	794915	838465	2	TT-10	114.2	12.2	113.5	11.1	99.4	P	
T50	9/11/01	794920	838380	2	TT-10	114.2	12.2	115.4	12.0	101.1	P	
T51	9/11/01	794940	838250	2	TT-10	114.2	12.2	114.9	11.8	100.6	P	
T52	9/12/01	794990	838255	2	TT-10	114.2	12.2	115.4	10.5	101.1	P	
T53	9/12/01	795010	838160	2	TT-10	114.2	12.2	117.6	11.2	103.0	P	
T54	9/12/01	794980	837555	3	TT-10	114.2	12.2	113.5	14.5	99.4	P	
T55	9/12/01	794960	837745	3	TT-10	114.2	12.2	115.5	14.0	101.1	P	
T56	9/12/01	795005	837880	3	TT-10	114.2	12.2	114.7	13.0	100.4	P	
T57	9/12/01	795050	838022	3	TT-11	112.3	12.0	116.6	11.7	103.8	P	
T58	9/12/01	794890	838307	1	TT-11	112.3	12.0	111.2	16.0	99.0	P	
T59	9/12/01	794804	838870	1	TT-11	112.3	12.0	109.1	11.5	97.2	P	
T60	9/12/01	794840	838595	1	TT-11	112.3	12.0	114.0	11.2	101.5	P	
T61	9/12/01	794690	839390	1	TT-11	112.3	12.0	110.2	11.9	98.1	P	
T62	9/12/01	794685	839180	1	TT-11	112.3	12.0	111.1	11.2	98.9	P	
T63	9/13/01	795017	837570	4	TT-11	112.3	12.0	111.9	11.9	99.6	P	
T64	9/13/01	794983	837720	4	TT-11	112.3	12.0	107.0	11.8	95.3	P	
T65	9/13/01	794903	838365	4	TT-11	112.3	12.0	111.0	15.9	98.8	P	
T66	9/13/01	794878	838595	4	TT-11	112.3	12.0	111.2	15.0	99.0	P	
T67	9/13/01	794780	838858	4	TT-12	119.3	12.5	118.3	13.4	99.2	P	
T68	9/13/01	794960	838250	4	TT-12	119.3	12.5	121.1	10.7	101.5	P	
T69	9/13/01	794875	838475	4	TT-12	119.3	12.5	119.0	11.9	99.7	P	
T70	9/13/01	794879	838575	4	TT-12	119.3	12.5	119.6	11.7	100.3	P	
T71	9/13/01	794810	838695	FG	TT-12	119.3	12.5	120.2	11.4	100.8	P	
T72	9/13/01	795005	837910	FG	TT-12	119.3	12.5	118.1	13.8	99.0	P	
T73	9/13/01	795010	837715	FG	TT-12	119.3	12.5	117.6	13.1	98.6	P	
T74	9/13/01	794940	838345	FG	TT-12	119.3	12.5	118.3	13.0	99.2	P	

Table D.4. Field Compaction Test Results for the Above-Grade Tailings Impoundment Enhancement Toe Protection

Note: R denotes Re-Test sample. * Indicates that Sand-Cone Correlation performed.

Max.= Maximum; SG (Subgrade) = Original Ground Surface; FG = Finish Grade; P = Pass; F Comp = Fails Compaction. F Moist = Fails Moisture; F C&M = Fails Compaction & Moisture.

Compaction Test ID	Date	Location		Lift or Elevation	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture	Percent Compaction		
								Requirements:	NA or ≥ Opt. -2	≥ 90 - 95		Requirements varied; see above.
T75	9/13/01	794815	838738	2	TT-12	119.3	12.5	118.9	10.5	99.7	P	
T76	9/13/01	794747	839110	2	TT-12	119.3	12.5	115.6	10.6	96.9	P	
T77	9/13/01	794650	839415	2	TT-13	118.7	12.1	118.8	10.9	100.1	P	
T78	9/13/01	794845	838550	FG	TT-13	118.7	12.1	120.5	11.6	101.5	P	
T79	9/13/01	794924	838370	FG	TT-13	118.7	12.1	116.2	10.4	97.9	P	
T80	9/13/01	794925	838250	FG	TT-13	118.7	12.1	118.7	11.8	100.0	P	
T81	9/13/01	794750	838910	FG	TT-13	118.7	12.1	114.2	13.6	96.2	P	
T82	9/14/01	794590	839705	1	TT-13	118.7	12.1	112.9	12.6	95.1	P	
T83	9/14/01	794519	839820	1	TT-13	118.7	12.1	115.5	11.6	97.3	P	
T84	9/14/01	794630	839610	1	TT-13	118.7	12.1	115.4	12.1	97.2	P	
T85	9/14/01	794649	839530	1	TT-13	118.7	12.1	117.8	11.9	99.2	P	
T86	9/14/01	794904	838390	1	TT-13	118.7	12.1	118.3	13.2	99.7	P	
T87	9/14/01	794838	838635	3	TT-14	120.8	11.1	116.2	12.0	96.2	P	
T88	9/14/01	794800	838895	3	TT-14	120.8	11.1	115.0	12.4	95.2	P	
T89	9/14/01	794695	839195	3	TT-14	120.8	11.1	119.9	12.4	99.3	P	
T90	9/14/01	794680	839435	3	TT-14	120.8	11.1	116.0	12.8	96.0	P	
T91	9/14/01	794505	839800	4	TT-14	120.8	11.1	115.1	10.6	95.3	P	
T92	9/14/01	794593	839650	4	TT-14	120.8	11.1	118.1	10.9	97.8	P	
T93	9/14/01	794625	839500	4	TT-14	120.8	11.1	115.3	12.3	95.4	P	
T94	9/14/01	794860	838490	4	TT-14	120.8	11.1	115.9	13.6	95.9	P	
T95	9/14/01	794835	838743	4	TT-14	120.8	11.1	115.5	15.0	95.6	P	
T96	9/14/01	794729	839130	4	TT-14	120.8	11.1	117.3	12.4	97.1	P	
T97	*	10/3/01	794800	FG	TT-15	117.3	13.5	112.0	17.5	95.5	P	
T98	*	10/3/01	794900	FG	TT-15	117.3	13.5	113.4	13.5	96.7	P	
T99		10/3/01	794750	FG	TT-15	117.3	13.5	117.0	14.8	99.7	P	
T100	*	10/3/01	794650	FG	TT-15	117.3	13.5	113.9	13.0	97.1	P	
T101	*	10/3/01	794560	FG	TT-15	117.3	13.5	111.9	12.8	95.4	P	
T102		10/31/01	794135	FG	TT-16	116.3	13.8	114.5	15.4	98.5	P	
T103		10/31/01	794520	FG	TT-16	116.3	13.8	114.6	13.9	98.5	P	
T104		10/31/01	794780	FG	TT-16	116.3	13.8	111.2	15.3	95.6	P	
T105	5/6/02	792400	839310	1	TT-17	110.0	13.7	107.2	14.0	97.5	P	
T106	5/6/02	792580	839580	1	TT-17	110.0	13.7	105.4	16.3	95.8	P	
T107	5/6/02	792770	839800	1	TT-17	110.0	13.7	108.7	14.8	98.8	P	
T108	5/6/02	792960	839850	1	TT-17	110.0	13.7	107.3	15.9	97.5	P	
T109	5/9/02	792380	839250	2	TT-17	110.0	13.7	107.0	13.2	97.3	P	
T110	5/9/02	792650	839710	2	TT-17	110.0	13.7	105.4	16.4	96.1	P	
T111	5/9/02	792850	739820	2	TT-17	110.0	13.7	110.1	12.6	100.1	P	

Table D.4. Field Compaction Test Results for the Above-Grade Tailings Impoundment Enhancement Toe Protection

Note: R denotes Re-Test sample. * Indicates that Sand-Cone Correlation performed.

Max.= Maximum; SG (Subgrade) = Original Ground Surface; FG = Finish Grade; P = Pass; F Comp = Fails Compaction. F Moist = Fails Moisture; F C&M = Fails Compaction & Moisture.

Compaction Test ID	Date	Location		Lift or Elevation	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Eastng		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture	Percent Compaction		
								<i>Requirements:</i>	NA or \geq Opt. -2	$\geq 90 - 95$		Requirements varied; see above.
T112	5/10/02	792980	839870	2	TT-18	121.7	11.8	112.0	11.2	92.0	F Comp	Fails Compaction
T112R	5/17/02	792980	839870	2	TT-18	121.7	11.8	118.2	11.1	97.1	P	Retest passes
T113	5/10/02	792550	839550	3	TT-18	121.7	11.8	114.3	10.2	93.9	F Comp	Fails Compaction
T113R	5/17/02	792550	839550	3	TT-18	121.7	11.8	115.8	13.5	95.2	P	Retest passes
T114	5/10/02	792750	839780	3	TT-18	121.7	11.8	110.1	8.9	90.5	F C & M	Fails Compaction and Moisture
T114R	5/17/02	792750	839780	3	TT-18	121.7	11.8	116.6	13.1	95.8	P	Retest passes
T115	5/10/02	792985	839855	3	TT-18	121.7	11.8	113.6	9.1	93.3	F C & M	Fails Compaction and Moisture
T115R	5/17/02	792985	839855	3	TT-18	121.7	11.8	117.1	10.3	96.2	P	Retest passes
T116	5/21/02	793100	839900	4	TT-18	121.7	11.8	116.5	10.3	95.7	P	
T117	5/21/02	792900	839850	4	TT-18	121.7	11.8	122.7	11.4	100.8	P	
T118	5/21/02	792850	839840	4	TT-19	116.1	13.0	115.0	12.4	99.1	P	
T119	5/21/02	792750	839790	4	TT-19	116.1	13.0	115.5	11.7	100.5	P	
T120	5/21/02	792350	839220	5	TT-19	116.1	13.0	114.4	11.3	98.5	P	
T121	5/21/02	792500	839490	5	TT-19	116.1	13.0	112.6	13.4	96.9	P	
T122	5/21/02	792440	839400	5	TT-19	116.1	13.0	110.2	14.1	94.9	P	Test passed by QC officer.
T123	5/21/02	792640	839700	5	TT-19	116.1	13.0	111.4	13.5	96.0	P	
T124	5/21/02	792830	839820	5	TT-19	116.1	13.0	110.9	13.6	95.5	P	
T125	5/21/02	793060	839890	5	TT-19	116.1	13.0	113.5	15.5	97.8	P	
T126	5/22/02	792340	839200	6	TT-19	116.1	13.0	111.2	17.3	95.8	P	
T127	5/22/02	792250	838880	6	TT-19	116.1	13.0	112.3	14.0	96.7	P	
T128	5/22/02	792560	839600	6	TT-19	116.1	13.0	112.0	14.3	96.4	P	
T129	5/22/02	792850	839830	6	TT-20	116.2	14.2	113.0	12.8	97.2	P	
T130	5/22/02	793110	839950	6	TT-20	116.2	14.2	113.8	15.3	97.9	P	
T131	5/22/02	792700	839750	6	TT-20	116.2	14.2	111.5	13.1	96.0	P	
T132	5/22/02	792800	839780	6	TT-20	116.2	14.2	111.0	13.1	95.5	P	
T133	5/24/02	792320	839020	6	TT-20	116.2	14.2	118.9	13.7	102.3	P	
T134	5/24/02	792480	839400	6	TT-20	116.2	14.2	111.9	14.5	96.3	P	
T135	5/24/02	792600	839580	6	TT-20	116.2	14.2	113.1	14.6	97.3	P	
T136	5/29/02	792320	839140	4	TT-20	116.2	14.2	111.2	12.7	95.7	P	
T137	5/29/02	792550	839570	4	TT-20	116.2	14.2	111.7	16.3	96.1	P	
T138	6/5/02	792290	838800	FG	TT-21	116.6	13.7	112.0	14.5	96.1	P	
T139	6/5/02	792330	839120	FG	TT-21	116.6	13.7	111.1	14.2	95.3	P	
T140	* 6/6/02	792300	838780	6	TT-21	116.6	13.7	111.8	14.9	95.8	P	
T141	6/6/02	792380	839220	6	TT-21	116.6	13.7	111.5	15.1	95.6	P	
T142	6/6/02	792510	839480	6	TT-21	116.6	13.7	112.8	13.0	96.7	P	
T143	6/10/02	792820	839820	7	TT-21	116.6	13.7	113.9	16.6	97.7	P	
T144	* 6/10/02	793110	839930	7	TT-21	116.6	13.7	113.4	14.4	97.3	P	

Table D.4. Field Compaction Test Results for the Above-Grade Tailings Impoundment Enhancement Toe Protection

Note: R denotes Re-Test sample. * Indicates that Sand-Cone Correlation performed.

Max.= Maximum; SG (Subgrade) = Original Ground Surface; FG = Finish Grade; P = Pass; F Comp = Fails Compaction. F Moist = Fails Moisture; F C&M = Fails Compaction & Moisture.

Compaction Test ID	Date	Location		Lift or Elevation	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments	
		Northing	Easting		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture	Percent Compaction			
								Requirements:	NA or ≥ Opt. -2	≥ 90 - 95		Requirements varied; see above.	
T145	*	7/12/02	793140	840000	SG	TT-22	116.1	13.5	114.8	7.2	98.9	P	Subgrade, so no moisture requirement.
T146		7/12/02	793190	840100	SG	TT-22	116.1	13.5	129.5	11.1	111.5	P	Subgrade, so no moisture requirement.
T147		7/30/02	793140	839990	1	TT-22	116.1	13.5	111.4	14.7	96.0	P	
T148		7/30/02	793180	840100	1	TT-22	116.1	13.5	112.1	12.3	96.6	P	
T149		7/30/02	793190	840120	2	TT-22	116.1	13.5	111.7	14.0	96.2	P	
T150	*	7/30/02	793150	840010	2	TT-22	116.1	13.5	118.2	13.8	101.8	P	
T151		7/30/02	793145	840020	3	TT-22	116.1	13.5	111.2	14.6	95.8	P	
T152		7/30/02	793180	840110	3	TT-22	116.1	13.5	111.1	15.7	95.7	P	
T153		8/16/02	792450	839350	FG	TT-22	116.1	13.5	112.0	14.6	96.5	P	
T154		8/16/02	792570	839600	FG	TT-22	116.1	13.5	110.7	13.3	95.3	P	
T155	*	8/16/02	792750	839750	FG	TT-23	110.7	16.2	110.7	16.3	100.0	P	
T156	*	9/5/02	794220	840129	SG	TT-24	112.8	14.8	110.7	13.9	98.1	P	Subgrade, so no moisture requirement.
T157		9/5/02	794232	840068	SG	TT-24	112.8	14.8	109.2	13.9	96.8	P	Subgrade, so no moisture requirement.
T158		9/10/02	794233	840054	1	TT-24	112.8	14.8	107.3	13.1	95.1	P	
T159	*	9/10/02	794220	840118	2	TT-24	112.8	14.8	109.3	15.7	96.9	P	
T160		9/10/02	794233	840067	3	TT-24	112.8	14.8	109.8	14.8	97.3	P	
T161		9/11/02	794282	840024	3	TT-24	112.8	14.8	109.0	15.2	96.6	P	
T162		9/11/02	794249	840055	4	TT-25	120.3	11.7	114.3	13.0	95.0	P	
T163		9/11/02	794221	840118	4	TT-25	120.3	11.7	115.0	10.9	95.6	P	
T164		9/12/02	794240	840095	5	TT-25	120.3	11.7	114.3	13.3	95.0	P	
T165		9/12/02	794303	840018	5	TT-25	120.3	11.7	117.1	10.1	97.3	P	
T166	*	9/12/02	794273	840027	FG	TT-25	120.3	11.7	116.0	12.9	96.4	P	
T167		9/12/02	794305	840008	FG	TT-25	120.3	11.7	118.4	10.7	98.4	P	
T168		9/12/02	794235	840123	FG	TT-25	120.3	11.7	118.6	11.8	98.6	P	

Field density and moisture tests were taken using a nuclear density gauge. The gauge was field standardized at each test location and was correlated by a Sand Cone Test at a frequency of one for every ten nuclear gauge tests. Field rock corrections were performed at each compaction test location.

<i>Total Number of Tests (N):</i>	168	(N reflects passing tests only)	
<i>Total Quantities placed:</i>	73,120	cubic yards (CY)	
<i>Frequency:</i>	1: 435 CY	Meets the required frequency of 1:1000 CY.	
<i>average:</i>	114.5	12.8	98.2
<i>minimum:</i>	105.4	7.2	94.9
<i>maximum:</i>	129.5	17.5	112.6
<i>standard deviation:</i>	4.0	2.1	2.8

Table D.5. Sand-Cone Correlation Documentation for the Above-Grade Tailings Impoundment Toe

Date	Compaction Test ID	Nuclear Gauge Test		Sand-Cone Compaction Tests		Sand-Cone Correlation Results	
		In-Place Wet Unit Weight (pcf)	Moisture Content (%)	In-Place Wet Unit Weight (pcf)	Moisture Content (%)	Wet Unit Weight Variation (%)	Moisture Content Variation (%)
8/16/00	T-10	130.1	8.5	127.4	7.2	-2.1	-1.3
8/16/00	T-11	132.6	10.1	134.6	8.3	1.5	-1.8
10/13/00	T-12	135.9	11.3	139.9	11.9	2.9	0.6
6/11/01	T-29	137.6	11.6	138.9	10.1	0.9	-1.5
6/20/01	T-36	133.5	13.9	136.7	12.0	2.4	-1.9
10/3/01	T-97	131.5	17.5	133.6	15.7	1.6	-1.8
10/3/01	T-98	128.8	13.5	129.8	11.6	0.8	-1.9
10/3/01	T-99	134.3	14.8	134.5	13.6	0.1	-1.2
10/3/01	T-100	128.7	13.0	132.3	12.7	2.8	-0.3
10/3/01	T-101	126.1	12.8	125.7	11.4	-0.3	-1.4
6/6/02	T-140	128.4	14.9	132.1	12.9	2.9	-2.0
6/10/02	T-144	129.7	14.4	129.9	12.5	0.2	-1.9
7/12/02	T-145	123.1	7.2	124.0	6.0	0.7	-1.2
7/30/02	T-150	134.5	13.8	136.7	13.2	1.6	-0.6
8/16/02	T-155	128.7	16.3	129.0	15.4	0.2	-0.9
9/5/02	T-156	126.1	13.9	127.8	12.3	1.3	-1.6
9/10/02	T-159	126.5	15.7	128.2	14.4	1.3	-1.3
9/12/02	T-166	131.0	12.9	128.7	12.7	-1.8	-0.2

pcf - pounds per cubic foot

<i>Number of sand-cone tests:</i>	18	
<i>average percent variation (on absolute value):</i>	1.4	1.3
<i>standard deviation:</i>	0.9	0.6

Note:

For the Above-Grade Tailings Impoundment toe, a sand-cone correlation test was performed for every ten nuclear gauge tests. Correlations were deemed acceptable if the average of ten nuclear test results vs. sand cone test results comparisons met the following criteria:

sand-cone method wet density: +/- 3%
sand-cone method moisture content: +/- 2%

As indicated above, these criteria were met even for discrete results (vs. running average).

Table D.6. Daily Quantities, Quality Control Test Frequencies, and Sand-Cone Correlation Documentation for the East Canyon Creek Realignment

Note: This table lists only those days that fill was placed and/or testing performed. CY = Cubic Yards; NG = Nuclear Gauge (test), i.e., field compaction test.

Testing Frequency Requirements:

Field Compaction Tests: 1: 500 CY

Proctors: 1: 5000 CY

Sand-Cones: 1:10 NG tests

Date	Total Quantities Placed		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily Yardage	Cumulative Yardage	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (per CY)	Daily Tests Performed	Cumulative No. of Tests	Ratio (/NG tests)
5/23/02	0	0	3	3	1: 0	1	1	1: 0		0	--
5/24/02	0	0	2	5	1: 0	1	2	1: 0		0	--
5/28/02	0	0	2	7	1: 0		2	1: 0		0	--
5/29/02	1,029	1,029	4	11	1: 94		2	1: 515	1	1	1: 11
5/30/02	1,407	2,436	2	13	1: 187		2	1: 1218		1	1: 13
5/31/02	0	2,436	2	15	1: 162	1	3	1: 812		1	1: 15
6/3/02	0	2,436	2	17	1: 143		3	1: 812		1	1: 17
6/5/02	546	2,982		17	1: 175		3	1: 994		1	1: 17
6/6/02	1,008	3,990	2	19	1: 210		3	1: 1330		1	1: 19
6/21/02	2,016	6,006		19	1: 316		3	1: 2002		1	1: 19
7/22/02	1,281	7,287		19	1: 384		3	1: 2,429		1	1: 19
7/23/02	0	7,287	4	23	1: 317		3	1: 2,429	1	2	1: 12
7/25/02	546	7,833		23	1: 341		3	1: 2,611		2	1: 12
8/7/02	2,583	10,416		23	1: 453		3	1: 3,472		2	1: 12
8/9/02	2,856	13,272	6	29	1: 458	1	4	1: 3,318	1	3	1: 10
8/12/02	3,801	17,073	9	38	1: 449	1	5	1: 3,415	1	4	1: 10
8/13/02	4,263	21,336	7	45	1: 474	1	6	1: 3,556	1	5	1: 9
8/14/02	1,155	22,491	5	50	1: 450		6	1: 3,749		5	1: 10
8/16/02	966	23,457	6	56	1: 419	1	7	1: 3,351	1	6	1: 9
8/19/02	864	24,321		56	1: 434		7	1: 3,474		6	1: 9
8/20/02	1,872	26,193	4	60	1: 437	1	8	1: 3,274		6	1: 10
8/22/02	0	26,193	2	62	1: 422		8	1: 3,274		6	1: 10

Table D.6. Daily Quantities, Quality Control Test Frequencies, and Sand-Cone Correlation Documentation for the East Canyon Creek Realignment

Sand-Cone Correlation Test Results

Date	Compaction Test ID	Nuclear Gauge Test		Sand-Cone Compaction Tests		Sand-Cone Correlation Results	
		In-Place Wet Unit Weight (pcf)	Moisture Content (%)	In-Place Wet Unit Weight (pcf)	Moisture Content (%)	Wet Unit Weight Variation (%)	Moisture Content Variation (%)
5/29/02	E-11	133.6	14.5	130.3	13.8	-2.5	-0.7
7/23/02	E-23	125.2	16.5	124.2	14.7	-0.8	-1.8
8/9/02	E-28	132.5	11.8	129.4	10.2	-2.3	-1.6
8/12/02	E-33	126.9	12.2	123.1	10.4	-3.0	-1.8
8/13/02	E-42	125.8	16.0	127.9	13.4	1.7	-2.6
8/16/02	E-56	131.4	12.9	136.1	12.5	1.4	-0.9

pcf - pounds per cubic foot

<i>Number of sand-cone tests:</i>	6	
<i>average percent variation (on absolute value):</i>	2.0	1.6
<i>standard deviation:</i>	0.8	0.7

Note:

For the East Canyon Creek Realignment, a sand-cone correlation test was performed for every ten nuclear gauge tests. Correlations were deemed acceptable if the average of ten nuclear test results vs. sand cone test results comparisons met the following criteria:

sand-cone method wet density: +/- 3%
sand-cone method moisture content: +/- 2%

As indicated above, these criteria were met even for discrete results (vs. running average).

Table D.7. Field Compaction Test Results for the East Canyon Creek Realignment Fill

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; FG = Finish Grade; SG (Subgrade) = Original Ground Surface; P = Pass. [No tests failed the enhanced reclamation plan placement requirements.]

Compaction Test ID	Date	Location			Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments
		Northing	Easting	Lift	Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction		
								<i>Requirements:</i>	$PM \geq \text{Opt.} - 2$	≥ 95		
E-1	5/23/02	794220	840170	SG	ECC-1	114.3	14.1	111.8	12.4	97.8	P	
E-2	5/23/02	794300	840180	SG	ECC-1	114.3	14.1	110.8	16.6	96.9	P	
E-3	5/23/02	794500	840170	SG	ECC-1	114.3	14.1	116.5	14.9	101.9	P	
E-4	5/24/02	793650	840250	1	ECC-2	110.4	14.5	106.2	13.5	96.2	P	
E-5	5/24/02	794150	840220	1	ECC-2	110.4	14.5	111.6	15.0	101.1	P	
E-6	5/28/02	794100	840210	2	ECC-2	110.4	14.5	105.5	14.3	95.6	P	
E-7	5/28/02	793900	840230	2	ECC-2	110.4	14.5	108.0	15.6	97.8	P	
E-8	5/29/02	793860	840280	3	ECC-2	110.4	14.5	113.4	13.4	102.7	P	
E-9	5/29/02	793720	840240	3	ECC-2	110.4	14.5	113.3	12.4	102.6	P	
E-10	5/29/02	793640	840260	3	ECC-2	110.4	14.5	105.8	12.9	95.8	P	
E-11	* 5/29/02	793580	840200	3	ECC-2	110.4	14.5	116.7	14.5	105.7	P	
E-12	5/30/02	793460	840180	4	ECC-2	110.4	14.5	105.5	14.1	95.6	P	
E-13	5/30/02	793400	840220	4	ECC-2	110.4	14.5	110.4	14.5	100.0	P	
E-14	5/31/02	794000	840160	4	ECC-3	112.7	15.5	109.1	16.0	96.8	P	
E-15	5/31/02	793360	840210	4	ECC-3	112.7	15.5	107.5	14.8	95.4	P	
E-16	6/3/02	794320	840160	5	ECC-3	112.7	15.5	110.3	13.6	97.8	P	
E-17	6/3/02	794220	840150	5	ECC-3	112.7	15.5	109.5	15.2	97.2	P	
E-18	6/6/02	793640	840180	4	ECC-3	112.7	15.5	108.2	17.3	96.0	P	
E-19	6/6/02	794540	840140	4	ECC-3	112.7	15.5	107.9	16.1	95.7	P	
E-20	7/23/02	793500	840190	FG	ECC-3	112.7	15.5	107.7	14.1	95.6	P	
E-21	7/23/02	793580	840180	FG	ECC-3	112.7	15.5	107.3	17.1	95.2	P	
E-22	7/23/02	793600	840200	FG	ECC-3	112.7	15.5	107.5	16.2	95.4	P	
E-23	* 7/23/02	793520	840180	FG	ECC-3	112.7	15.5	107.5	16.5	95.4	P	
E-24	8/9/02	793480	840020	1	ECC-4	117.9	12.5	116.5	11.3	98.8	P	
E-25	8/9/02	793920	840100	1	ECC-4	117.9	12.5	116.4	11.1	98.7	P	
E-26	8/9/02	793500	840120	2	ECC-4	117.9	12.5	112.8	11.5	95.7	P	
E-27	8/9/02	793940	840140	2	ECC-4	117.9	12.5	116.0	13.3	98.4	P	
E-28	* 8/9/02	793580	840060	3	ECC-4	117.9	12.5	118.6	11.8	100.6	P	
E-29	8/9/02	793480	840080	3	ECC-4	117.9	12.5	116.2	13.9	98.6	P	
E-30	8/12/02	793900	840120	3	ECC-4	117.9	12.5	118.4	11.8	100.4	P	
E-31	8/12/02	793990	840080	3	ECC-4	117.9	12.5	114.6	14.0	97.2	P	
E-32	8/12/02	793400	840120	4	ECC-4	117.9	12.5	115.0	13.4	97.5	P	
E-33	* 8/12/02	793520	840100	4	ECC-4	117.9	12.5	113.1	12.2	95.9	P	
E-34	8/12/02	793640	840080	4	ECC-5	109.7	17.1	112.4	15.8	102.5	P	
E-35	8/12/02	794000	840100	4	ECC-5	109.7	17.1	106.6	17.5	97.2	P	
E-36	8/12/02	793920	840080	4	ECC-5	109.7	17.1	108.9	18.1	99.3	P	

Table D.7. Field Compaction Test Results for the East Canyon Creek Realignment Fill

Note: R denotes Re-Test sample. To facilitate review, re-tests are shown directly under the corresponding failed test result (note dates). * Indicates that Sand-Cone Correlation performed. Max.= Maximum; FG = Finish Grade; SG (Subgrade) = Original Ground Surface; P = Pass. [No tests failed the enhanced reclamation plan placement requirements.]

Compaction Test ID	Date	Location		Lift	Laboratory Standard Proctor			Field Compaction Tests			Pass/Fail	Comments	
		Northing	Easting		Proctor ID	Max. Dry Density (lbs/cu ft)	Optimum Moisture (%)	Dry Density (lbs/cu ft)	Percent Moisture (PM)	Percent Compaction			
								Requirements:	PM ≥ Opt. - 2	≥ 95			
E-37	8/12/02	793420	840040	5	ECC-5	109.7	17.1	109.7	18.5	100.0	P		
E-38	8/12/02	793560	840100	5	ECC-5	109.7	17.1	112.9	16.7	102.9	P		
E-39	8/13/02	793700	840100	5	ECC-5	109.7	17.1	112.7	16.3	102.7	P		
E-40	8/13/02	793860	840080	5	ECC-5	109.7	17.1	106.7	20.3	97.3	P		
E-41	8/13/02	794000	840060	5	ECC-5	109.7	17.1	108.4	16.0	98.8	P		
E-42	*	8/13/02	793460	840020	6	ECC-5	109.7	17.1	109.8	16.0	100.1	P	
E-43	8/13/02	793620	840120	6	ECC-5	109.7	17.1	107.1	15.9	97.6	P		
E-44	8/13/02	793780	840120	6	ECC-6	113.4	15.2	107.6	16.4	95.0	P		
E-45	8/13/02	793920	840120	6	ECC-6	113.4	15.2	114.1	13.5	100.6	P		
E-46	8/14/02	793500	840100	FG	ECC-6	113.4	15.2	111.8	15.1	98.6	P		
E-47	8/14/02	793570	840130	FG	ECC-6	113.4	15.2	110.8	17.2	97.7	P		
E-48	8/14/02	793630	840140	FG	ECC-6	113.4	15.2	112.7	17.2	99.4	P		
E-49	8/14/02	793640	840100	FG	ECC-6	113.4	15.2	112.8	16.6	99.5	P		
E-50	8/14/02	793670	840090	FG	ECC-6	113.4	15.2	111.6	16.7	98.4	P		
E-51	8/16/02	794200	840100	FG	ECC-6	113.4	15.2	112.9	16.8	99.6	P		
E-52	8/16/02	794150	840115	FG	ECC-6	113.4	15.2	110.4	17.7	97.4	P		
E-53	8/16/02	794100	840100	FG	ECC-6	113.4	15.2	109.8	15.9	96.8	P		
E-54	8/16/02	794150	840050	FG	ECC-7	117.8	13.0	114.8	13.9	97.5	P		
E-55	8/16/02	793950	840125	FG	ECC-7	117.8	13.0	113.8	12.8	96.6	P		
E-56	*	8/16/02	793999	840120	FG	ECC-7	117.8	13.0	116.5	12.9	98.9	P	
E-57	8/20/02	794410	840220	FG	ECC-8	111.8	15.0	110.4	13.0	98.7	P		
E-58	8/20/02	794360	840225	FG	ECC-8	111.8	15.0	115.0	16.7	102.9	P		
E-59	8/20/02	794320	840215	FG	ECC-8	111.8	15.0	110.2	16.1	98.6	P		
E-60	8/20/02	794230	840200	FG	ECC-8	111.8	15.0	111.9	15.0	100.1	P		
E-61	8/22/02	794130	840190	FG	ECC-8	111.8	15.0	111.0	15.1	99.3	P		
E-62	8/22/02	794150	840210	FG	ECC-8	111.8	15.0	106.3	15.0	95.1	P		

Field density and moisture tests were taken using a nuclear density gauge. The gauge was field standardized at each test location and was correlated by a Sand Cone Test at a frequency of one for every ten nuclear gauge tests.

Total Number of Tests (N): 62 (N reflects passing tests only)
Total Quantities placed: 26,193 cubic yards (CY)
Frequency: 1: 422 CY Meets plan requirements

average:	111.2	15.0	98.4
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minimum: 105.5 11.1 95.0
maximum: 118.6 20.3 105.7
standard deviation: 3.5 2.0 2.4