

Appendix C
A-9 Frost Protection

Appendix C

A-9 Repository Design Enhancement Quality Control Test Results: Frost Protection Layer

Table C.1. Daily Quantities and Quality Control Test Frequencies for the A-9 Repository Frost Protection Layer: 2001-2004

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		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	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)
5/18/01	1,255	1,255		0		1	1	1: 1255		0	
5/21/01	2,777	4,032	5	5	1: 806	2	3	1: 1344		0	
5/22/01	5,064	9,096	6	11	1: 827		3	1: 3032	1	1	1: 11
5/23/01	4,783	13,879	8	19	1: 730	2	5	1: 2776	1	2	1: 10
5/24/01	4,913	18,792	8	27	1: 696		5	1: 3758		2	1: 14
5/25/01	7,121	25,913	9	36	1: 720		5	1: 5183	1	3	1: 12
5/29/01	5,831	31,744	4	40	1: 794	2	7	1: 4535	1	4	1: 10
5/30/01	454	32,198	17	57	1: 565	1	8	1: 4025	2	6	1: 10
5/31/01	2,938	35,136	6	63	1: 558		8	1: 4392	1	7	1: 9
6/1/01	5,900	41,036	10	73	1: 562	1	9	1: 4560	1	8	1: 9
6/4/01	554	41,590		73	1: 570	1	10	1: 4159		8	1: 9
6/5/01	3,004	44,594	10	83	1: 537	1	11	1: 4054	3	11	1: 8
6/6/01	4,102	48,696	7	90	1: 541	1	12	1: 4058	1	12	1: 8
6/7/01	3,079	51,775	14	104	1: 498		12	1: 4315	3	15	1: 7
6/8/01	3,406	55,181		104	1: 531		12	1: 4598		15	1: 7
6/11/01	2,966	58,147		104	1: 559		12	1: 4846		15	1: 7
6/12/01	5,051	63,198		104	1: 608		12	1: 5267		15	1: 7
6/13/01	5,033	68,231	3	107	1: 638	2	14	1: 4874	1	16	1: 7
6/15/01	7,902	76,133	27	134	1: 568	2	16	1: 4758	4	20	1: 7
6/18/01	5,715	81,848	10	144	1: 568	1	17	1: 4815	2	22	1: 7
6/19/01	2,091	83,939	22	166	1: 506	1	18	1: 4663	2	24	1: 7
6/20/01	3,294	87,233	4	170	1: 513		18	1: 4846	1	25	1: 7
6/21/01	5,750	92,983	10	180	1: 517	2	20	1: 4649	2	27	1: 7
6/22/01	6,553	99,536	8	188	1: 529	1	21	1: 4740	1	28	1: 7
6/25/01	4,667	104,203	2	190	1: 548	2	23	1: 4531		28	1: 7
6/26/01	714	104,917	6	196	1: 535		23	1: 4562	1	29	1: 7
6/27/01	2,496	107,413		196	1: 548		23	1: 4670		29	1: 7
6/28/01	4,622	112,035	8	204	1: 549		23	1: 4871	1	30	1: 7
6/29/01	6,056	118,091	13	217	1: 544		23	1: 5134		30	1: 7
7/1/01	5,705	123,796	4	221	1: 560	2	25	1: 4952	1	31	1: 7
7/2/01	5,320	129,116	11	232	1: 557		25	1: 5165	1	32	1: 7
7/3/01	4,543	133,659	12	244	1: 548	2	27	1: 4950	1	33	1: 7

Table C.1. Daily Quantities and Quality Control Test Frequencies for the A-9 Repository Frost Protection Layer: 2001-2004

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		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	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)
7/9/01	6,243	139,902	5	249	1: 562	1	28	1: 4997	1	34	1: 7
7/10/01	5,516	145,418	12	261	1: 557		28	1: 5194	2	36	1: 7
7/11/01	5,516	150,934	7	268	1: 563	3	31	1: 4869	1	37	1: 7
7/12/01	5,760	156,694	18	286	1: 548	1	32	1: 4897	2	39	1: 7
7/13/01	5,893	162,587	14	300	1: 542	1	33	1: 4927	1	40	1: 8
7/16/01	2,688	165,275	12	312	1: 530	2	35	1: 4722	1	41	1: 8
7/17/01	0	165,275	23	335	1: 493		35	1: 4722	4	45	1: 7
7/18/01	2,727	168,002		335	1: 501		35	1: 4800		45	1: 7
7/19/01	2,499	170,501		335	1: 509		35	1: 4871		45	1: 7
7/20/01	1,677	172,178		335	1: 514		35	1: 4919		45	1: 7
7/24/01	6,692	178,870		335	1: 534	1	36	1: 4969		45	1: 7
7/25/01	5,518	184,388	9	344	1: 536	1	37	1: 4983	1	46	1: 7
7/26/01	1,886	186,274	9	353	1: 528		37	1: 5034	1	47	1: 8
7/31/01	5,711	191,985		353	1: 544	1	38	1: 5052		47	1: 8
8/1/01	792	192,777		353	1: 546	1	39	1: 4943		47	1: 8
8/2/01	900	193,677		353	1: 549		39	1: 4966		47	1: 8
8/7/01	6,319	199,996		353	1: 567		39	1: 5128		47	1: 8
8/8/01	9,733	209,729	10	363	1: 578		39	1: 5378	1	48	1: 8
8/9/01	2,297	212,026	18	381	1: 556	1	40	1: 5301	2	50	1: 8
8/10/01	8,178	220,204	17	398	1: 553	1	41	1: 5371	1	51	1: 8
8/11/01	0	220,204	13	411	1: 536	2	43	1: 5121	2	53	1: 8
8/13/01	6,423	226,627		411	1: 551		43	1: 5270		53	1: 8
8/14/01	3,625	230,252	15	426	1: 540	3	46	1: 5005	2	55	1: 8
8/15/01	1,868	232,120	10	436	1: 532	1	47	1: 4939	1	56	1: 8
8/16/01	0	232,120	10	446	1: 520		47	1: 4939	1	57	1: 8
8/17/01	1,101	233,221	8	454	1: 514		47	1: 4962	2	59	1: 8
8/20/01	3,045	236,266	7	461	1: 513	2	49	1: 4822	1	60	1: 8
8/21/01	3,300	239,566		461	1: 520		49	1: 4889		60	1: 8
8/22/01	0	239,566	12	473	1: 506		49	1: 4889	1	61	1: 8
8/29/01	1,218	240,784		473	1: 509		49	1: 4914		61	1: 8
8/30/01	1,890	242,674	2	475	1: 511		49	1: 4953		61	1: 8
8/31/01	2,476	245,150	3	478	1: 513		49	1: 5003		61	1: 8

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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 CY	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)
9/4/01	4,170	249,320	5	483	1: 516	2	51	1: 4889	1	62	1: 8
9/5/01	5,412	254,732	11	494	1: 516		51	1: 4995		62	1: 8
9/7/01	5,149	259,881	19	513	1: 507	2	53	1: 4903	1	63	1: 8
9/10/01	6,352	266,233	15	528	1: 504	1	54	1: 4930	1	64	1: 8
9/12/01	1,218	267,451		528	1: 507		54	1: 4953		64	1: 8
9/13/01	594	268,045		528	1: 508		54	1: 4964		64	1: 8
9/14/01	168	268,213		528	1: 508		54	1: 4967		64	1: 8
4/30/02	2,946	271,159	5	533	1: 509	1	55	1: 4930	2	66	1: 8
5/6/02	990	272,149	11	544	1: 500	1	56	1: 4860	1	67	1: 8
5/10/02	2,928	275,077		544	1: 506		56	1: 4912		67	1: 8
5/14/02	3,423	278,500		544	1: 512		56	1: 4973		67	1: 8
5/15/02	2,931	281,431	8	552	1: 510	1	57	1: 4937	1	68	1: 8
5/16/02	4,158	285,589	2	554	1: 516		57	1: 5010		68	1: 8
5/17/02	966	286,555	4	558	1: 514		57	1: 5027		68	1: 8
5/21/02	0	286,555	3	561	1: 511	1	58	1: 4941		68	1: 8
5/22/02	0	286,555	4	565	1: 507		58	1: 4941		68	1: 8
5/23/02	465	287,020		565	1: 508		58	1: 4949		68	1: 8
5/24/02	177	287,197		565	1: 508		58	1: 4952		68	1: 8
6/10/02	0	287,197	1	566	1: 507	1	59	1: 4868		68	1: 8
6/13/02	0	287,197	3	569	1: 505		59	1: 4868		68	1: 8
6/18/02	1,782	288,979	4	573	1: 504		59	1: 4898		68	1: 8
6/20/02	1,638	290,617		573	1: 507		59	1: 4926		68	1: 8
6/21/02	504	291,121		573	1: 508		59	1: 4934		68	1: 8
6/24/02	399	291,520		573	1: 509		59	1: 4941		68	1: 8
6/26/02	357	291,877	2	575	1: 508		59	1: 4947		68	1: 8
6/27/02	776	292,653	2	577	1: 507		59	1: 4960		68	1: 8
6/28/02	2,709	295,362		577	1: 512		59	1: 5006		68	1: 8
7/3/02	2,631	297,993		577	1: 516		59	1: 5051		68	1: 8
7/8/02	168	298,161	5	582	1: 512	1	60	1: 4969	2	70	1: 8
7/9/02	357	298,518	12	594	1: 503	1	61	1: 4894	1	71	1: 8
7/10/02	3,570	302,088		594	1: 509		61	1: 4952		71	1: 8
7/12/02	3,381	305,469	10	604	1: 506	1	62	1: 4927		71	1: 9

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	Daily CY	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)
7/15/02	1,218	306,687	5	609	1: 504	1	63	1: 4868	1	72	1: 8
7/16/02	2,562	309,249	10	619	1: 500	1	64	1: 4832	1	73	1: 8
7/17/02	1,239	310,488	8	627	1: 495	1	65	1: 4777		73	1: 9
7/22/02	693	311,181		627	1: 496		65	1: 4787		73	1: 9
7/25/02	1,827	313,008		627	1: 499		65	1: 4816		73	1: 9
7/26/02	1,722	314,730	3	630	1: 500		65	1: 4842		73	1: 9
7/29/02	3,360	318,090		630	1: 505		65	1: 4894		73	1: 9
7/30/02	0	318,090	2	632	1: 503		65	1: 4894	1	74	1: 9
8/1/02	4,578	322,668		632	1: 511		65	1: 4964		74	1: 9
8/2/02	4,893	327,561	7	639	1: 513	1	66	1: 4963		74	1: 9
8/5/02	5,292	332,853	6	645	1: 516	1	67	1: 4968	2	76	1: 8
8/6/02	5,082	337,935	15	660	1: 512	2	69	1: 4898	1	77	1: 9
8/7/02	1,302	339,237	2	662	1: 512		69	1: 4916	1	78	1: 8
8/8/02	5,103	344,340	14	676	1: 509	1	70	1: 4919	1	79	1: 9
8/9/02	1,176	345,516		676	1: 511		70	1: 4936		79	1: 9
8/14/02	2,121	347,637	3	679	1: 512		70	1: 4966	1	80	1: 8
8/15/02	0	347,637	10	689	1: 505	1	71	1: 4896	1	81	1: 9
8/19/02	1,911	349,548		689	1: 507		71	1: 4923		81	1: 9
8/20/02	3,465	353,013		689	1: 512		71	1: 4972		81	1: 9
8/21/02	4,872	357,885	13	702	1: 510	2	73	1: 4903	1	82	1: 9
8/22/02	1,428	359,313	6	708	1: 508		73	1: 4922		82	1: 9
9/9/02	0	359,313	3	711	1: 505	1	74	1: 4856		82	1: 9
6/19/03	1,266	360,579		711	1: 507		74	1: 4873		82	1: 9
6/20/03	4,335	364,914	6	717	1: 509	1	75	1: 4866	1	83	1: 9
6/23/03	885	365,799	4	721	1: 507	1	76	1: 4813		83	1: 9
6/27/03	0	365,799	1	722	1: 507		76	1: 4813		83	1: 9
6/30/03	3,417	369,216	7	729	1: 506	1	77	1: 4795	1	84	1: 9
7/1/03	4,104	373,320	9	738	1: 506	1	78	1: 4786		84	1: 9
7/2/03	1,983	375,303	8	746	1: 503	1	79	1: 4751	2	86	1: 9
7/9/03	423	375,726		746	1: 504		79	1: 4756		86	1: 9
7/10/03	2,205	377,931		746	1: 507		79	1: 4784		86	1: 9
7/11/03	3,765	381,696		746	1: 512		79	1: 4832		86	1: 9

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Testing Frequency Requirements:

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Date	Total Quantities		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	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)
7/15/03	1,152	382,848		746	1: 513		79	1: 4846		86	1: 9
7/16/03	5,754	388,602	1	747	1: 520		79	1: 4919		86	1: 9
7/17/03	2,247	390,849	18	765	1: 511	2	81	1: 4825	1	87	1: 9
7/18/03	5,673	396,522	5	770	1: 515		81	1: 4895	1	88	1: 9
7/21/03	7,788	404,310	2	772	1: 524		81	1: 4991		88	1: 9
7/22/03	5,652	409,962	11	783	1: 524	2	83	1: 4939	1	89	1: 9
7/23/03	1,632	411,594	6	789	1: 522		83	1: 4959	1	90	1: 9
7/24/03	5,502	417,096	29	818	1: 510	3	86	1: 4850	2	92	1: 9
7/25/03	5,172	422,268	30	848	1: 498	3	89	1: 4745	2	94	1: 9
7/28/03	6,612	428,880	16	864	1: 496	1	90	1: 4765	1	95	1: 9
7/29/03	6,642	435,522	12	876	1: 497	1	91	1: 4786		95	1: 9
7/30/03	4,335	439,857	10	886	1: 496	1	92	1: 4781	1	96	1: 9
7/31/03	4,686	444,543	10	896	1: 496	1	93	1: 4780	1	97	1: 9
8/1/03	4,632	449,175	8	904	1: 497	1	94	1: 4778	1	98	1: 9
8/4/03	4,980	454,155	5	909	1: 500	1	95	1: 4781		98	1: 9
8/5/03	5,571	459,726	6	915	1: 502		95	1: 4839	1	99	1: 9
8/6/03	5,421	465,147	10	925	1: 503	1	96	1: 4845	2	101	1: 9
8/7/03	6,546	471,693		925	1: 510		96	1: 4913		101	1: 9
8/8/03	4,929	476,622		925	1: 515		96	1: 4965		101	1: 9
6/8/04	987	477,609		925	1: 516		96	1: 4975		101	1: 9
6/9/04	966	478,575	1	926	1: 517	1	97	1: 4934		101	1: 9
6/10/04	0	478,575	7	933	1: 513		97	1: 4934		101	1: 9
6/11/04	1,239	479,814	8	941	1: 510	1	98	1: 4896	1	102	1: 9
6/14/04	105	479,919	1	942	1: 509		98	1: 4897		102	1: 9
6/15/04	0	479,919	8	950	1: 505	1	99	1: 4848	1	103	1: 9
6/16/04	504	480,423	3	953	1: 504		99	1: 4853	1	104	1: 9
6/17/04	126	480,549		953	1: 504		99	1: 4854		104	1: 9
6/18/04	105	480,654	9	962	1: 500	1	100	1: 4807		104	1: 9
6/21/04	0	480,654	12	974	1: 493	1	101	1: 4759	1	105	1: 9
6/22/04	714	481,368		974	1: 494		101	1: 4766		105	1: 9
6/23/04	672	482,040	2	976	1: 494	1	102	1: 4726	1	106	1: 9
6/28/04	294	482,334	3	979	1: 493		102	1: 4729		106	1: 9

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Field Compaction Tests: 1: 500 CY

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Date	Total Quantities		Field Compaction Test Frequency			Proctor Test Frequency			Sand-Cone Test Frequency		
	Daily CY	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)
6/29/04	399	482,733	5	984	1: 491		102	1: 4733		106	1: 9
6/30/04	147	482,880	8	992	1: 487	1	103	1: 4688		106	1: 9
7/1/04	819	483,699	3	995	1: 486		103	1: 4696	1	107	1: 9
7/6/04	462	484,161	5	1000	1: 484	1	104	1: 4655	2	109	1: 9
7/7/04	63	484,224	2	1002	1: 483		104	1: 4656	1	110	1: 9
7/8/04	462	484,686	1	1003	1: 483		104	1: 4660		110	1: 9

Total Quantities of Material Placed and/or Compacted, Summary by Year

<u>Year</u>	<u>Cu Yds Placed</u>
2001	268,213
2002	91,100
2003	117,309
2004	8,064
TOTAL:	484,686

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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		
F001 *	5/21/01	790400	837600	1	FP-1	116.5	13.4	110.4	14.8	94.8	F Comp	Fails Compaction
F001R	5/21/01	790400	837600	1	FP-1	116.5	13.4	112.4	12.4	96.5	P	Retest
F002	5/21/01	790450	837500	1	FP-1	116.5	13.4	116.4	14.0	99.9	P	
F003	5/21/01	790450	837400	1	FP-1	116.5	13.4	115.0	14.2	98.7	P	
F004 *	5/21/01	790550	837200	1	FP-1	116.5	13.4	109.2	13.6	93.7	F Comp	Fails Compaction
F004R	5/30/01	790499	837200	1	FP-1	116.5	13.4	111.1	16.4	95.4	P	Retest
F005	5/21/01	790550	837100	1	FP-1	116.5	13.4	114.5	13.7	98.3	P	
F006	5/22/01	790300	837750	1	FP-1	116.5	13.4	114.9	13.1	98.6	P	
F007 *	5/22/01	790400	837500	1	FP-2	117.9	12.5	115.0	10.6	97.5	P	
F008	5/22/01	790450	837300	1	FP-1	116.5	13.4	119.4	13.1	102.5	P	
F009	5/22/01	790500	837200	1	FP-1	116.5	13.4	110.9	15.8	95.2	P	
F010	5/22/01	790550	837010	1	FP-1	116.5	13.4	110.8	16.7	95.1	P	
F011	5/22/01	790500	837000	2	FP-1	116.5	13.4	110.8	14.6	95.1	P	
F012	5/23/01	790200	837750	1	FP-2	117.9	12.5	114.7	15.7	97.3	P	
F013	5/23/01	790300	837400	1	FP-2	117.9	12.5	115.6	12.0	98.0	P	
F014 *	5/23/01	790400	837200	1	FP-2	117.9	12.5	109.7	12.1	93.0	F Comp	Fails Compaction
F014R	5/30/01	790400	837200	1	FP-2	117.9	12.5	118.9	13.6	100.8	P	Retest
F015	5/23/01	790540	837280	2	FP-2	117.9	12.5	116.6	15.0	98.9	P	
F016	5/23/01	790540	837080	2	FP-2	117.9	12.5	113.8	16.9	96.5	P	
F017	5/23/01	790400	837600	2	FP-2	117.9	12.5	112.3	15.6	95.3	P	
F018 *	5/23/01	790470	837100	2	FP-2	117.9	12.5	111.5	11.0	94.6	F Comp	Fails Compaction - No Retest
F019 *	5/23/01	790470	837200	2	FP-3	119.4	11.8	115.4	9.1	96.6	F Moist	Fails Moisture
F019R	5/30/01	790470	837200	2	FP-3	119.4	11.8	113.4	12.4	95.0	P	Retest
F020	5/24/01	790500	837100	3	FP-3	119.4	11.8	114.1	10.1	95.6	P	
F021	5/24/01	790400	837400	3	FP-3	119.4	11.8	114.3	11.9	95.7	P	
F022	5/24/01	790200	837200	3	FP-3	119.4	11.8	115.0	13.0	96.3	P	
F023	5/24/01	790100	837100	3	FP-2	117.9	12.5	112.5	12.1	95.4	P	
F024	5/24/01	790400	837400	3	FP-3	119.4	11.8	114.2	11.2	95.6	P	
F025	5/24/01	790300	837600	3	FP-3	119.4	11.8	114.4	13.8	95.8	P	
F026	5/24/01	790200	837200	3	FP-3	119.4	11.8	113.7	15.9	95.2	P	
F027	5/24/01	790400	837300	3	FP-3	119.4	11.8	115.3	12.3	96.6	P	
F028 *	5/25/01	790420	837020	1	FP-3	119.4	11.8	119.5	9.8	100.1	P	
F029	5/25/01	790430	837050	1	FP-3	119.4	11.8	120.3	10.6	100.8	P	
F030	5/25/01	790310	837200	1	FP-4	116.4	13.0	114.5	14.3	98.4	P	
F031	5/25/01	790320	837300	1	FP-4	116.4	13.0	115.1	11.5	98.9	P	
F032	5/25/01	790315	837400	1	FP-4	116.4	13.0	112.3	13.6	96.5	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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 Moisture (PM)	Percent Compaction		
Requirements:								PM ≥ Opt. - 2	≥ 95			
F033	5/25/01	790200	837700	1	FP-4	116.4	13.0	113.4	14.3	97.4	P	
F034	5/25/01	790290	837600	1	FP-4	116.4	13.0	116.4	11.3	100.0	P	
F035	5/25/01	790350	837400	1	FP-4	116.4	13.0	112.3	13.1	96.5	P	
F036	5/25/01	790450	837260	1	FP-4	116.4	13.0	115.1	11.0	98.9	P	
F037	5/29/01	790400	837460	2	FP-4	116.4	13.0	116.9	12.3	100.4	P	
F038	5/29/01	790450	837300	2	FP-4	116.4	13.0	113.5	12.1	97.5	P	
F039	5/29/01	790400	837200	2	FP-5	118.9	12.6	113.5	14.4	95.5	P	
F040	* 5/29/01	790400	837100	2	FP-5	118.9	12.6	113.7	11.8	95.6	P	
F041	5/30/01	790200	837100	1	FP-5	118.9	12.6	118.0	13.2	99.2	P	
F042	5/30/01	790170	837230	1	FP-5	118.9	12.6	117.6	12.5	98.9	P	
F043	5/30/01	790170	837370	1	FP-5	118.9	12.6	116.2	11.2	97.7	P	
F044	5/30/01	790150	837610	1	FP-5	118.9	12.6	116.5	11.6	98.0	P	
F045	5/30/01	790230	837500	1	FP-5	118.9	12.6	114.5	15.4	96.3	P	
F046	5/30/01	790230	837330	1	FP-5	118.9	12.6	115.7	12.1	97.3	P	
F047	5/30/01	790250	837030	1	FP-5	118.9	12.6	115.7	11.7	97.3	P	
F048	5/30/01	790070	837530	1	FP-5	118.9	12.6	117.2	12.0	98.6	P	
F049	5/30/01	790100	837420	1	FP-6	118.0	12.4	112.9	13.5	95.7	P	
F050	5/30/01	790240	837200	1	FP-6	118.0	12.4	112.7	13.7	95.5	P	
F051	5/30/01	790120	837290	1	FP-6	118.0	12.4	112.3	10.7	95.2	P	
F052	* 5/30/01	790150	837150	1	FP-6	118.0	12.4	115.3	13.9	97.7	P	
F053	5/30/01	790100	837030	1	FP-6	118.0	12.4	116.2	11.0	98.5	P	
F054	5/30/01	790050	837200	1	FP-6	118.0	12.4	113.7	11.1	96.4	P	
F055	* 5/30/01	790050	837100	1	FP-6	118.0	12.4	115.4	11.3	97.8	P	
F056	5/30/01	790050	837260	1	FP-6	118.0	12.4	115.9	10.8	98.2	P	
F057	5/30/01	790050	837000	1	FP-6	118.0	12.4	114.7	13.9	97.2	P	
F058	5/31/01	790620	836070	4	FP-6	118.0	12.4	113.4	12.2	96.1	P	
F059	5/31/01	790480	837430	4	FP-7	116.4	13.0	113.3	13.5	97.3	P	
F060	5/31/01	790550	837230	4	FP-7	116.4	13.0	113.8	11.6	97.8	P	
F061	5/31/01	790540	837050	4	FP-7	116.4	13.0	112.1	14.3	96.3	P	
F062	* 5/31/01	790450	837250	4	FP-7	116.4	13.0	116.3	12.0	99.9	P	
F063	5/31/01	790390	837450	4	FP-7	116.4	13.0	114.9	13.4	98.7	P	
F064	6/1/01	790380	836950	4	FP-7	116.4	13.0	113.1	12.0	97.2	P	
F065	6/1/01	790350	837250	4	FP-7	116.4	13.0	114.4	11.1	98.3	P	
F066	6/1/01	790350	837400	4	FP-7	116.4	13.0	118.8	12.2	102.1	P	
F067	6/1/01	790300	837075	3	FP-7	116.4	13.0	116.7	12.4	100.3	P	
F068	6/1/01	790280	837125	3	FP-7	116.4	13.0	115.7	14.9	99.4	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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				
F069	*	6/1/01	790270	837350	3	FP-8	118.4	12.3	116.5	12.7	98.4	P	
F070		6/1/01	790250	837550	2	FP-8	118.4	12.3	118.3	11.6	99.9	P	
F071		6/1/01	790270	837050	3	FP-8	118.4	12.3	118.9	13.1	100.4	P	
F072		6/1/01	790200	837270	3	FP-8	118.4	12.3	116.9	12.3	98.7	P	
F073		6/1/01	790200	837280	3	FP-8	118.4	12.3	113.7	11.4	96.0	P	
F074		6/5/01	790100	837000	2	FP-8	118.4	12.3	116.1	10.9	98.1	P	
F075		6/5/01	790100	837150	2	FP-8	118.4	12.3	115.0	10.3	97.1	P	
F076		6/5/01	790120	837250	2	FP-8	118.4	12.3	113.5	10.9	95.9	P	
F077	*	6/5/01	790200	837500	2	FP-8	118.4	12.3	112.0	13.8	94.6	F Comp	Fails Compaction
F077R		6/7/01	790200	837500	2	FP-9	118.4	12.3	114.6	10.7	96.8	P	Retest
F078		6/5/01	790220	837000	2	FP-8	118.4	12.3	112.6	12.7	95.1	P	
F079		6/6/01	790230	837100	2	FP-9	118.0	12.3	118.3	11.6	100.3	P	
F080	*	6/6/01	790250	837250	2	FP-9	118.0	12.3	112.8	13.7	95.6	P	
F081	*	6/6/01	790120	837600	2	FP-9	118.0	12.3	113.2	12.4	95.9	P	
F082	*	6/6/01	790040	837720	2	FP-9	118.0	12.3	113.6	10.4	96.3	P	
F083		6/6/01	790100	837820	2	FP-9	118.0	12.3	112.8	12.5	95.6	P	
F084		6/6/01	789870	837000	1	FP-9	118.0	12.3	122.6	12.0	103.9	P	
F085		6/6/01	789880	837150	1	FP-9	118.0	12.3	118.3	10.5	100.3	P	
F086		6/6/01	789850	837350	1	FP-9	118.0	12.3	115.1	13.5	97.5	P	
F087		6/6/01	789850	837500	1	FP-9	118.0	12.3	115.0	11.9	97.5	P	
F088		6/6/01	789800	837650	1	FP-9	118.0	12.3	115.3	12.2	97.7	P	
F089	*	6/6/01	789800	837120	1	FP-10	120.4	12.0	119.0	11.8	98.8	P	
F090		6/6/01	789770	837250	1	FP-10	120.4	12.0	117.2	12.2	97.3	P	
F091	*	6/7/01	790350	836950	2	FP-10	120.4	12.0	120.1	11.0	99.8	P	
F092		6/7/01	790350	837120	2	FP-10	120.4	12.0	115.1	10.3	95.6	P	
F093		6/7/01	790350	837230	2	FP-10	120.4	12.0	115.3	12.1	95.8	P	
F094		6/7/01	790350	837400	2	FP-10	120.4	12.0	115.4	10.0	95.8	P	
F095	*	6/7/01	790280	837360	2	FP-10	120.4	12.0	116.0	14.6	96.3	P	
F096		6/7/01	790150	836960	2	FP-10	120.4	12.0	117.4	10.9	97.5	P	
F097	*	6/7/01	790150	837160	2	FP-10	120.4	12.0	115.0	13.5	95.5	P	
F098		6/7/01	790120	837320	2	FP-10	120.4	12.0	116.5	11.1	96.8	P	
F099		6/7/01	790450	837450	2	FP-10	120.4	12.0	117.2	10.1	97.3	P	
F100	*	6/7/01	790020	837600	1	FP-10	120.4	12.0	114.1	11.4	94.8	F Comp	Fails Compaction - No Retest
F101		6/7/01	789940	836950	1	FP-11	118.9	12.0	115.4	12.5	97.1	P	
F102		6/7/01	790000	837120	1	FP-11	118.9	12.0	116.9	12.0	98.3	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F103	6/7/01	789930	837250	1	FP-11	118.9	12.0	114.6	12.4	96.4	P		
F104	6/7/01	789940	837450	1	FP-11	118.9	12.0	120.2	10.5	101.1	P		
F105	6/13/01	790600	836900	4	FP-11	118.9	12.0	118.5	12.3	99.7	P		
F106	6/13/01	790500	836900	4	FP-11	118.9	12.0	117.8	10.3	99.1	P		
F107	*	6/13/01	790180	837705	3	FP-11	118.9	12.0	115.5	10.4	97.1	P	
F108		6/15/01	790120	836945	1	FP-11	118.9	12.0	115.2	13.5	96.9	P	
F109		6/15/01	790075	837105	1	FP-11	118.9	12.0	116.6	11.3	98.1	P	
F110	*	6/15/01	790015	837350	1	FP-11	118.9	12.0	121.5	12.8	102.2	P	
F111		6/15/01	790070	836965	1	FP-12	119.2	11.5	113.2	13.9	95.0	P	
F112		6/15/01	790023	837135	1	FP-12	119.2	11.5	114.7	13.5	96.2	P	
F113	*	6/15/01	789970	837355	1	FP-12	119.2	11.5	112.2	16.5	94.1	F Comp	Fails Compaction
F113R		6/15/01	789970	837355	1	FP-12	119.2	11.5	114.1	12.3	95.7	P	Retest
F114		6/15/01	790025	836895	1	FP-12	119.2	11.5	115.3	13.2	96.7	P	
F115		6/15/01	790010	836975	1	FP-12	119.2	11.5	114.7	14.1	96.2	P	
F116		6/15/01	789975	837100	1	FP-12	119.2	11.5	116.2	13.6	97.5	P	
F117		6/15/01	790299	837298	4	FP-12	119.2	11.5	113.4	13.9	95.1	P	
F118		6/15/01	790227	837514	4	FP-12	119.2	11.5	116.8	12.6	98.0	P	
F119		6/15/01	790217	837368	4	FP-12	120.0	12.0	114.3	14.9	95.3	P	
F120		6/15/01	790138	837588	4	FP-12	120.0	12.0	118.0	12.4	98.3	P	
F121	*	6/15/01	790193	837272	4	FP-12	120.0	12.0	118.4	11.7	98.7	P	
F122		6/15/01	790138	837477	3	FP-13	120.0	12.0	115.1	11.5	95.9	P	
F123	*	6/15/01	790221	837008	3	FP-13	120.0	12.0	112.7	14.7	93.9	F Comp	Fails Compaction
F123R		6/15/01	790221	837008	3	FP-13	120.0	12.0	115.0	13.6	95.8	P	Retest
F124		6/15/01	790174	837172	3	FP-13	120.0	12.0	116.1	11.4	96.8	P	
F125		6/15/01	789975	837540	1	FP-12	119.2	11.5	118.3	13.3	99.2	P	
F126		6/15/01	789930	837535	1	FP-12	119.2	11.5	115.8	11.9	97.1	P	
F127	*	6/15/01	790339	837298	4	FP-13	120.0	12.0	114.4	14.2	95.3	P	
F128		6/15/01	790316	836992	4	FP-13	120.0	12.0	117.8	13.6	98.2	P	
F129		6/15/01	790267	837182	4	FP-13	120.0	12.0	116.4	13.9	97.0	P	
F130	*	6/15/01	790247	837090	3	FP-13	120.0	12.0	113.8	13.2	94.8	F Comp	Fails Compaction
F130R		6/15/01	790247	837090	3	FP-13	120.0	12.0	115.2	13.9	96.0	P	Retest
F131		6/15/01	790120	837347	3	FP-13	120.0	12.0	115.7	14.4	96.4	P	
F132		6/15/01	790165	836852	3	FP-14	119.7	12.5	117.1	14.1	97.8	P	
F133		6/15/01	790120	837120	3	FP-14	119.7	12.5	113.7	16.9	95.0	P	
F134		6/15/01	790078	837278	3	FP-14	119.7	12.5	115.4	14.9	96.4	P	
F134D		6/18/01	790400	837095	4	FP-14	119.7	12.5	115.0	14.4	96.1	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F135	*	6/18/01	790335	837265	4	FP-14	119.7	12.5	115.3	11.7	96.3	P	
F136	*	6/18/01	790370	837290	4	FP-14	119.7	12.5	112.4	15.4	93.9	F Comp	Fails Compaction
F136R		6/18/01	790370	837290	4	FP-14	119.7	12.5	116.5	11.3	97.3	P	Retest
F137		6/18/01	790290	837465	4	FP-15	118.0	12.3	116.5	13.3	98.7	P	
F138		6/18/01	790218	837655	4	FP-15	118.0	12.3	113.2	13.6	95.9	P	
F139		6/18/01	790075	837035	2	FP-15	118.0	12.3	117.5	10.9	99.6	P	
F140		6/18/01	790020	837285	2	FP-15	118.0	12.3	114.9	14.8	97.4	P	
F141	*	6/18/01	790080	837165	2	FP-15	118.0	12.3	118.3	11.2	100.3	P	
F142		6/18/01	790015	837420	2	FP-15	118.0	12.3	113.0	12.6	95.8	P	
F143		6/18/01	789960	837630	2	FP-15	118.0	12.3	112.3	13.8	95.2	P	
F144		6/19/01	789915	836992	2	FP-15	118.0	12.3	119.1	13.4	100.9	P	
F145	*	6/19/01	789915	837225	2	FP-15	118.0	12.3	118.3	13.0	100.3	P	
F146		6/19/01	789865	837505	2	FP-16	119.8	11.9	118.9	13.2	99.2	P	
F147		6/19/01	789830	837745	2	FP-16	119.8	11.9	114.6	15.1	95.7	P	
F148		6/19/01	789828	837005	2	FP-16	119.8	11.9	117.7	14.0	98.2	P	
F149		6/19/01	789788	837340	2	FP-16	119.8	11.9	114.2	16.3	95.3	P	
F150		6/19/01	789765	837586	2	FP-16	119.8	11.9	114.0	13.7	95.2	P	
F151		6/19/01	789757	837774	2	FP-16	119.8	11.9	115.9	13.1	96.7	P	
F152		6/19/01	789794	836909	2	FP-16	119.8	11.9	115.8	14.7	96.7	P	
F153		6/19/01	789776	837120	2	FP-16	119.8	11.9	115.5	13.2	96.4	P	
F154		6/19/01	790321	837031	4	FP-17	119.3	11.7	113.9	12.6	95.5	P	
F155		6/19/01	790225	837195	4	FP-17	119.3	11.7	113.5	12.7	95.1	P	
F156		6/19/01	790173	837463	4	FP-17	119.3	11.7	114.6	13.8	96.1	P	
F157		6/19/01	790077	837727	4	FP-17	119.3	11.7	114.2	11.6	95.7	P	
F158		6/19/01	789887	836925	2	FP-16	119.8	11.9	116.8	13.3	97.5	P	
F159		6/19/01	789869	837119	2	FP-16	119.8	11.9	118.6	12.6	99.0	P	
F160		6/19/01	789830	837406	2	FP-17	119.3	11.7	116.9	12.6	98.0	P	
F161		6/19/01	789801	837670	2	FP-17	119.3	11.7	117.8	13.6	98.7	P	
F162		6/19/01	790283	836996	4	FP-17	119.3	11.7	121.8	10.8	102.1	P	
F163		6/19/01	790225	837198	4	FP-17	119.3	11.7	114.6	13.5	96.1	P	
F164		6/19/01	790106	837516	4	FP-17	119.3	11.7	118.4	12.6	99.2	P	
F165	*	6/19/01	790003	837722	4	FP-17	119.3	11.7	117.7	14.4	98.7	P	
F166	*	6/20/01	789979	837014	2	FP-18	117.3	12.6	117.4	14.4	100.1	P	
F167		6/20/01	789953	837207	2	FP-18	117.3	12.6	119.2	12.9	101.6	P	
F168		6/20/01	789924	837450	2	FP-18	117.3	12.6	118.7	13.3	101.2	P	
F169		6/20/01	789895	837734	2	FP-18	117.3	12.6	111.7	15.8	95.2	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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		
F170	6/21/01	789953	836936	3	FP-18	117.3	12.6	115.5	12.8	98.5	P	
F171	6/21/01	789932	837142	3	FP-18	117.3	12.6	117.8	12.2	100.4	P	
F172	6/21/01	789898	837398	3	FP-18	117.3	12.6	113.9	12.4	97.1	P	
F173	6/21/01	789870	837672	3	FP-18	117.3	12.6	116.4	15.1	99.2	P	
F174	6/21/01	789820	837274	3	FP-18	117.3	12.6	119.0	18.2	101.4	P	
F175	* 6/21/01	789840	837135	2	FP-18	117.3	12.6	117.3	13.1	100.0	P	
F176	6/21/01	789856	836945	2	FP-18D	118.0	13.0	113.5	14.5	96.2	P	
F177	6/21/01	789887	837064	3	FP-18D	118.0	13.0	116.1	13.8	98.4	P	
F178	6/21/01	789855	837281	3	FP-18D	118.0	13.0	119.1	11.9	100.9	P	
F179	* 6/21/01	789825	837540	3	FP-18D	118.0	13.0	118.7	12.4	100.6	P	
F180	6/22/01	789785	837050	2	FP-18D	118.0	13.0	115.9	14.7	98.2	P	
F181	6/22/01	789765	837270	2	FP-19	117.2	13.3	114.4	15.3	97.6	P	
F182	6/22/01	789750	836945	1	FP-19	117.2	13.3	115.8	14.0	98.8	P	
F183	6/22/01	789725	837160	1	FP-19	117.2	13.3	117.1	14.7	99.9	P	
F184	* 6/22/01	789720	837760	2	FP-19	117.2	13.3	118.5	12.9	101.1	P	
F185	6/22/01	789730	837580	2	FP-19	117.2	13.3	120.6	11.9	102.9	P	
F186	6/22/01	789780	837670	2	FP-19	117.2	13.3	115.4	15.5	98.5	P	
F187	6/22/01	789710	837410	2	FP-19	117.2	13.3	115.2	14.4	98.3	P	
F188	6/25/01	789700	837700	2	FP-19	117.2	13.3	115.8	15.8	98.8	P	
F189	6/25/01	789800	837900	2	FP-19	117.2	13.3	115.1	15.6	98.2	P	
F190	6/26/01	790400	837150	4	FP-19	117.2	13.3	117.3	12.5	100.1	P	
F191	6/26/01	790300	837200	4	FP-20	118.5	11.3	113.8	13.2	96.0	P	
F192	6/26/01	790450	837150	4	FP-20	118.5	11.3	118.6	11.6	100.1	P	
F193	6/26/01	790400	837350	4	FP-20	118.5	11.3	115.0	15.6	97.0	P	
F194	* 6/26/01	790500	837000	4	FP-20	118.5	11.3	108.6	12.1	91.6	F Comp	Fails Compaction
F194R	6/28/01	790500	837000	4	FP-21	118.2	12.8	113.1	10.9	95.7	P	Retest
F195	* 6/26/01	790200	837100	4	FP-20	118.5	11.3	109.8	15.3	92.7	F Comp	Fails Compaction
F195R	6/28/01	790200	837100	4	FP-21	118.2	12.8	113.4	13.7	95.9	P	Retest
F196	* 6/28/01	790190	837040	4	FP-20	118.5	11.3	112.4	11.6	94.9	P	Compaction 0.1% below requirement; test passed by QC officer.
F197	6/28/01	790150	837235	4	FP-20	118.5	11.3	116.8	10.8	98.6	P	
F198	6/28/01	790090	837450	4	FP-20	118.5	11.3	118.0	9.5	99.6	P	
F199	6/28/01	790040	837735	4	FP-20	118.5	11.3	113.7	12.7	95.9	P	
F200	6/28/01	789940	837840	4	FP-20	118.5	11.3	113.7	13.1	95.9	P	
F201	* 6/28/01	790040	837610	4	FP-21	118.2	12.8	115.7	10.8	97.9	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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	
F202	6/28/01	790130	837175	4	FP-21	118.2	12.8	116.7	10.8	98.7	P	
F203	6/28/01	790185	837786	4	FP-21	118.2	12.8	115.9	12.5	98.1	P	
F204	6/28/01	790070	837590	4	FP-21	118.2	12.8	114.7	11.6	97.0	P	
F205	6/28/01	790020	837615	4	FP-21	118.2	12.8	115.6	13.3	97.8	P	
F206	6/28/01	790140	836990	4	FP-21	118.2	12.8	115.0	10.5	97.3	P	Moisture 0.3% below requirement; test passed by QC officer.
F207 *	6/28/01	790070	837220	4	FP-21	118.2	12.8	110.4	13.2	93.4	F Comp	Fails Compaction
F207R	7/1/01	790070	837220	4	FP-21	118.2	12.8	113.7	11.7	96.2	P	Retest
F208	6/28/01	790020	837520	4	FP-21	118.2	12.8	113.1	12.1	95.7	P	
F209 *	6/29/01	789940	837815	4	FP-21	118.2	12.8	111.8	13.0	94.6	P	Compaction 0.4% below requirement; test passed by QC officer.
F210	6/29/01	790090	836940	4	FP-21	118.2	12.8	113.6	10.8	96.1	P	
F211	6/29/01	790050	837140	4	FP-22	118.3	12.2	119.0	10.5	100.6	P	
F212	6/29/01	789980	837420	4	FP-22	118.3	12.2	112.7	10.5	95.3	P	
F213	6/29/01	789940	837700	4	FP-22	118.3	12.2	114.8	12.8	97.0	P	
F214	6/29/01	789640	836990	1	FP-22	118.3	12.2	119.0	12.8	100.6	P	
F215	6/29/01	789620	837240	1	FP-22	118.3	12.2	112.8	13.5	95.4	P	
F216 *	6/29/01	789610	837510	1	FP-22	118.3	12.2	111.5	11.5	94.3	F Comp	Fails Compaction
F216R *	7/1/01	789610	837510	1	FP-22	118.3	12.2	116.7	10.3	98.6	P	Retest
F217	7/1/01	789580	837740	1	FP-22	118.3	12.2	115.2	11.0	97.4	P	
F218	7/1/01	789610	836940	1	FP-22	118.3	12.2	115.7	13.1	97.8	P	
F219	7/1/01	789600	837195	1	FP-22	118.3	12.2	116.2	12.3	98.2	P	
F220	7/1/01	789585	837300	1	FP-22	118.3	12.2	116.1	12.5	98.1	P	
F221	7/2/01	789955	837040	4	FP-23	121.2	10.9	115.9	11.8	95.6	P	
F222	7/2/01	789565	837545	1	FP-23	121.2	10.9	117.4	10.6	96.9	P	
F223	7/2/01	789530	837680	1	FP-23	121.2	10.9	117.9	13.3	97.3	P	
F224	7/2/01	789530	837445	1	FP-23	121.2	10.9	116.4	14.4	96.0	P	
F225	7/2/01	789530	837280	1	FP-23	121.2	10.9	118.1	11.8	97.4	P	
F226	7/2/01	789530	837170	1	FP-23	121.2	10.9	120.2	10.7	99.2	P	
F227	7/2/01	789528	837016	1	FP-23	121.2	10.9	115.8	10.2	95.5	P	
F228	7/2/01	789935	837240	4	FP-23	121.2	10.9	118.0	10.4	97.4	P	
F229	7/2/01	789880	837460	4	FP-23	121.2	10.9	118.6	10.2	97.9	P	
F230 *	7/2/01	789878	837740	4	FP-23	121.2	10.9	119.7	10.2	98.8	P	
F231 *	7/2/01	789535	836950	1	FP-24	118.8	12.2	112.1	12.9	94.4	F Comp	Fails Compaction
F231R	7/3/01	789535	836950	1	FP-24	118.8	12.2	117.5	11.6	98.9	P	Retest

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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				
F232	7/3/01	789855	836940	4	FP-24	118.8	12.2	119.6	11.2	100.7	P		
F233	7/3/01	789820	837220	4	FP-24	118.8	12.2	120.5	12.4	101.4	P		
F234	7/3/01	789805	837480	4	FP-24	118.8	12.2	118.1	10.9	99.4	P		
F235	7/3/01	789770	837720	4	FP-24	118.8	12.2	115.4	12.9	97.1	P		
F236	7/3/01	789710	837820	4	FP-24	118.8	12.2	113.9	11.3	95.9	P		
F237	7/3/01	789765	836950	4	FP-24	118.8	12.2	114.1	10.8	96.0	P		
F238	*	7/3/01	789750	837133	4	FP-24	118.8	12.2	114.3	14.2	96.2	P	
F239	7/3/01	789710	837530	4	FP-24	118.8	12.2	117.0	10.9	98.5	P		
F240	*	7/3/01	789580	837750	4	FP-24	118.8	12.2	111.2	14.4	93.6	F Comp	Fails Compaction
F240R	7/9/01	789580	837750	4	FP-24	118.8	12.2	117.2	12.4	98.7	P	Retest	
F241	7/3/01	789610	837030	4	FP-25	119.1	12.4	115.3	12.2	96.8	P		
F242	7/3/01	789590	837230	4	FP-25	119.1	12.4	115.6	11.3	97.1	P		
F243	7/3/01	789570	837450	4	FP-25	119.1	12.4	120.1	11.2	100.8	P		
F244	7/9/01	789725	837740	3	FP-25	119.1	12.4	114.8	11.1	96.4	P		
F245	7/9/01	789710	837050	3	FP-25	119.1	12.4	119.4	11.6	100.3	P		
F246	*	7/9/01	789675	837280	3	FP-25	119.1	12.4	115.2	12.4	96.7	P	
F247	7/9/01	789670	837535	3	FP-25	119.1	12.4	116.1	13.5	97.5	P		
F248	7/9/01	789640	837760	3	FP-25	119.1	12.4	120.6	10.5	101.3	P		
F249	*	7/10/01	789690	836979	3	FP-25	119.1	12.4	113.8	11.5	95.6	P	
F250	7/10/01	789663	837161	3	FP-25	119.1	12.4	116.7	11.8	98.0	P		
F251	7/10/01	789638	837372	3	FP-26	120.5	10.4	117.5	11.4	97.5	P		
F252	7/10/01	789626	837590	3	FP-26	120.5	10.4	117.3	13.2	97.3	P		
F253	7/10/01	789610	837739	3	FP-26	120.5	10.4	114.7	10.3	95.2	P		
F254	7/10/01	789650	837077	3	FP-26	120.5	10.4	116.8	10.9	96.9	P		
F255	*	7/10/01	789610	836990	2	FP-26	120.5	10.4	117.1	10.2	97.2	P	
F256	7/10/01	789591	837228	2	FP-26	120.5	10.4	115.8	12.8	96.1	P		
F257	7/10/01	789580	837460	2	FP-26	120.5	10.4	117.4	11.2	97.4	P		
F258	7/10/01	789560	837675	2	FP-26	120.5	10.4	120.1	12.0	99.7	P		
F259	7/10/01	789580	836955	2	FP-26	120.5	10.4	115.9	13.8	96.2	P		
F260	7/10/01	789571	837151	2	FP-26	120.5	10.4	116.2	13.7	96.4	P		
F261	7/11/01	789561	837333	2	FP-27	119.0	11.2	116.2	13.6	97.6	P		
F262	7/11/01	789539	837559	2	FP-27	119.0	11.2	114.5	11.1	96.2	P		
F263	7/11/01	789538	837743	2	FP-27	119.0	11.2	114.2	11.5	96.0	P		
F264	*	7/11/01	789531	836922	2	FP-27	119.0	11.2	118.9	11.1	99.9	P	
F265	7/11/01	789530	837105	2	FP-27	119.0	11.2	117.3	9.4	98.6	P		
F266	7/11/01	789532	837240	2	FP-27	119.0	11.2	117.3	10.9	98.6	P		

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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			
F267	7/11/01	789529	837385	2	FP-27	119.0	11.2	114.5	15.9	96.2	P		
F268	7/12/01	790120	836960	5	FP-27	119.0	11.2	114.5	12.6	96.2	P		
F269	7/12/01	790110	837145	5	FP-27	119.0	11.2	117.3	11.8	98.6	P		
F270	7/12/01	790120	837392	5	FP-27	119.0	11.2	114.9	13.9	96.6	P		
F271	7/12/01	790128	837635	5	FP-28	117.6	13.2	113.4	12.6	96.4	P		
F272	*	7/12/01	790125	837780	5	FP-28	117.6	13.2	112.4	12.3	95.6	P	
F273	7/12/01	790070	837010	5	FP-28	117.6	13.2	117.4	12.6	99.8	P		
F274	7/12/01	790080	837230	5	FP-28	117.6	13.2	116.3	12.3	98.9	P		
F275	7/12/01	790068	837440	5	FP-28	117.6	13.2	114.9	13.0	97.7	P		
F276	7/12/01	790073	837660	5	FP-28	117.6	13.2	120.3	12.0	102.3	P		
F277	7/12/01	790065	837788	5	FP-28	117.6	13.2	117.3	11.6	99.7	P		
F278	7/12/01	790025	836935	5	FP-28	117.6	13.2	114.3	12.6	97.2	P		
F279	7/12/01	790020	837158	5	FP-28	117.6	13.2	118.2	12.9	100.5	P		
F280	7/12/01	790035	837388	5	FP-28	117.6	13.2	115.1	11.8	97.9	P		
F281	*	7/12/01	790024	837650	5	FP-29	117.2	12.2	112.4	11.4	95.9	P	
F282	7/12/01	790036	837800	5	FP-29	117.2	12.2	117.1	11.4	99.9	P		
F283	7/12/01	789975	836968	5	FP-29	117.2	12.2	113.1	12.5	96.5	P		
F284	7/12/01	789970	837140	5	FP-29	117.2	12.2	114.3	10.5	97.5	P		
F285	7/12/01	789990	837290	5	FP-29	117.2	12.2	117.1	13.1	99.9	P		
F286	7/13/01	789965	837478	5	FP-29	117.2	12.2	116.7	10.5	99.6	P		
F287	7/13/01	789975	837700	5	FP-29	117.2	12.2	117.9	10.8	100.6	P		
F288	*	7/13/01	789925	836927	5	FP-29	117.2	12.2	115.8	13.0	98.8	P	
F289	7/13/01	789922	837113	5	FP-29	117.2	12.2	118.4	14.9	101.0	P		
F290	7/13/01	789925	837324	5	FP-29	117.2	12.2	114.4	11.1	97.6	P		
F291	7/13/01	789930	837508	5	FP-30	119.2	12.0	118.4	12.0	99.3	P		
F292	7/13/01	789920	837780	5	FP-30	119.2	12.0	114.6	13.0	96.1	P		
F293	7/13/01	789876	836982	5	FP-30	119.2	12.0	117.8	11.3	98.8	P		
F294	7/13/01	789880	837176	5	FP-30	119.2	12.0	115.6	10.9	97.0	P		
F294D	7/13/01	789860	837261	5	FP-30	119.2	12.0	114.4	10.0	96.0	P		
F295	7/13/01	789885	837350	5	FP-30	119.2	12.0	113.7	10.0	95.4	P		
F296	7/13/01	789890	837550	5	FP-30	119.2	12.0	115.0	11.7	96.5	P		
F297	7/13/01	789887	837700	5	FP-30	119.2	12.0	113.2	12.0	95.0	P		
F298	7/13/01	789872	837820	5	FP-30	119.2	12.0	114.3	11.7	95.9	P		
F299	7/16/01	789818	836972	5	FP-30	119.2	12.0	118.3	10.1	99.2	P		
F300	7/16/01	789823	837156	5	FP-30	119.2	12.0	118.3	10.1	99.2	P		

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F301	7/16/01	789845	837368	5	FP-31	118.6	12.2	115.4	12.7	97.3	P	
F302	7/16/01	789830	837613	5	FP-31	118.6	12.2	117.3	10.5	98.9	P	
F303	* 7/16/01	789825	837810	5	FP-31	118.6	12.2	119.6	12.7	100.8	P	
F304	7/16/01	789760	836960	5	FP-31	118.6	12.2	114.7	11.1	96.7	P	
F305	7/16/01	789775	837105	5	FP-31	118.6	12.2	112.9	11.8	95.2	P	
F306	7/16/01	789768	837290	5	FP-31	118.6	12.2	113.6	11.0	95.8	P	
F307	7/16/01	789780	837523	5	FP-31	118.6	12.2	117.8	12.8	99.3	P	
F308	7/16/01	789755	837700	5	FP-31	118.6	12.2	117.2	11.9	98.8	P	
F309	7/16/01	789720	836927	5	FP-31	118.6	12.2	115.1	10.6	97.0	P	
F310	7/16/01	789735	837110	5	FP-31	118.6	12.2	117.9	12.7	99.4	P	
F311	7/17/01	789730	837414	5	FP-32	118.5	12.3	113.6	10.6	95.9	P	
F312	7/17/01	789725	837687	5	FP-32	118.5	12.3	114.3	10.9	96.5	P	
F313	7/17/01	789670	837030	5	FP-32	118.5	12.3	116.5	13.8	98.3	P	
F314	7/17/01	789680	837338	5	FP-32	118.5	12.3	114.3	10.9	96.5	P	
F315	7/17/01	789672	837650	5	FP-32	118.5	12.3	115.6	12.6	97.6	P	
F316	7/17/01	789620	837070	5	FP-32	118.5	12.3	113.0	12.2	95.4	P	
F317	* 7/17/01	789585	837335	5	FP-32	118.5	12.3	114.0	11.7	96.2	P	
F318	7/17/01	789600	837688	5	FP-32	118.5	12.3	116.5	11.2	98.3	P	
F319	7/17/01	789570	837065	5	FP-32	118.5	12.3	118.7	12.9	100.2	P	
F320	7/17/01	790460	837050	5	FP-33	117.3	12.8	116.3	12.6	99.1	P	
F321	7/17/01	790450	837200	5	FP-33	117.3	12.8	113.2	12.3	96.5	P	
F322	* 7/17/01	790420	837100	5	FP-33	117.3	12.8	112.0	11.6	95.5	P	
F323	7/17/01	790350	837250	5	FP-33	117.3	12.8	113.9	13.4	97.1	P	
F324	7/17/01	790370	837620	5	FP-33	117.3	12.8	114.2	12.5	97.4	P	
F325	7/17/01	790250	837680	5	FP-33	117.3	12.8	114.1	14.0	97.3	P	
F326	7/17/01	790340	837030	5	FP-33	117.3	12.8	116.7	11.9	99.5	P	
F327	7/17/01	790340	837080	5	FP-33	117.3	12.8	115.9	10.9	98.8	P	
F328	* 7/17/01	790250	836980	5	FP-33	117.3	12.8	116.8	11.6	99.6	P	
F329	7/17/01	790240	837100	5	FP-33	117.3	12.8	121.0	11.0	103.2	P	
F330	7/17/01	790250	837250	5	FP-34	117.2	12.6	112.6	15.4	96.1	P	
F331	* 7/17/01	790240	837420	5	FP-34	117.2	12.6	116.6	11.1	99.5	P	
F332	7/17/01	790230	837510	5	FP-34	117.2	12.6	119.8	11.1	102.2	P	
F333	7/17/01	790211	837758	5	FP-34	117.2	12.6	111.8	10.8	95.4	P	
F334	7/25/01	790610	836829	1	FP-35	119.3	12.2	116.2	13.2	97.4	P	
F335	7/25/01	790475	836782	1	FP-35	119.3	12.2	117.5	11.5	98.5	P	
F336	7/25/01	790321	836738	1	FP-35	119.3	12.2	117.2	10.2	98.2	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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 Moisture (PM)	Percent Compaction		
					Requirements:			PM ≥ Opt. - 2	≥ 95			
F337	7/25/01	790150	836691	1	FP-35	119.3	12.2	113.6	11.7	95.2	P	
F338	7/25/01	790413	836740	1	FP-35	119.3	12.2	119.4	11.6	100.1	P	
F339	* 7/25/01	790537	836793	1	FP-35	119.3	12.2	118.4	11.1	99.2	P	
F340	7/25/01	790258	836695	1	FP-35	119.3	12.2	118.9	10.3	99.7	P	
F341	7/25/01	790350	836730	1	FP-35	119.3	12.2	115.3	11.1	96.6	P	
F342	7/25/01	790650	836890	1	FP-35	119.3	12.2	114.7	11.9	96.1	P	
F343	7/26/01	790400	836750	1	FP-35	119.3	12.2	115.4	13.9	96.7	P	
F344	7/26/01	790200	836800	1	FP-36	117.8	12.0	116.0	11.1	98.5	P	
F345	7/26/01	790000	836700	1	FP-36	117.8	12.0	114.9	12.2	97.5	P	
F346	7/26/01	789550	836600	1	FP-36	117.8	12.0	116.8	10.3	99.2	P	
F347	7/26/01	789510	836690	1	FP-36	117.8	12.0	118.5	11.6	100.6	P	
F348	* 7/26/01	789700	836400	1	FP-36	117.8	12.0	119.6	10.9	101.5	P	
F349	7/26/01	789750	836530	1	FP-36	117.8	12.0	112.4	13.6	95.4	P	
F350	7/26/01	789800	836600	1	FP-36	117.8	12.0	117.4	12.8	99.7	P	
F351	7/26/01	789900	836570	1	FP-36	117.8	12.0	118.5	11.3	100.6	P	
F352	8/8/01	789580	836565	1	FP-36	117.8	12.0	113.6	12.9	96.4	P	
F353	8/8/01	789645	836650	1	FP-36	117.8	12.0	115.6	14.3	98.1	P	
F354	8/8/01	789750	836655	1	FP-36	117.8	12.0	115.1	13.2	97.7	P	
F355	8/8/01	789862	836650	1	FP-36	117.8	12.0	115.9	12.6	98.4	P	
F356	8/8/01	790023	836770	1	FP-36	117.8	12.0	113.9	11.1	96.7	P	
F357	8/8/01	790140	836740	1	FP-36	117.8	12.0	112.6	15.3	95.6	P	
F358	* 8/8/01	790231	836836	1	FP-36	117.8	12.0	111.2	15.9	94.4	F Comp	Fails Compaction
F358R	8/9/01	790231	836836	1	FP-36	117.8	12.0	116.1	12.5	98.6	P	Retest
F359	8/8/01	790340	836830	1	FP-36	117.8	12.0	114.2	14.0	96.9	P	
F360	* 8/8/01	790471	836843	1	FP-36	117.8	12.0	113.1	11.8	96.0	P	
F361	* 8/8/01	790555	836943	1	FP-37	118.4	12.2	111.9	10.9	94.5	F Comp	Fails Compaction
F361R	8/9/01	790555	836943	1	FP-37	118.4	12.2	117.7	11.5	99.4	P	Retest
F362	8/9/01	790650	836910	2	FP-37	118.4	12.2	116.3	10.8	98.2	P	
F363	8/9/01	790590	836970	2	FP-37	118.4	12.2	113.2	10.2	95.6	P	
F364	8/9/01	790530	836870	2	FP-37	118.4	12.2	114.1	11.8	96.4	P	
F365	8/9/01	790470	836910	2	FP-37	118.4	12.2	114.6	14.1	96.8	P	
F366	8/9/01	790410	836820	2	FP-37	118.4	12.2	112.8	14.2	95.3	P	
F367	8/9/01	790370	836910	2	FP-37	118.4	12.2	113.2	10.2	95.6	P	
F368	* 8/9/01	790290	836780	2	FP-37	118.4	12.2	116.9	10.7	98.7	P	
F369	8/9/01	790280	836860	2	FP-37	118.4	12.2	114.5	10.9	96.7	P	
F370	8/9/01	790230	836860	2	FP-38	117.2	12.9	117.1	11.1	99.9	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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 Max.= Maximum; FG = Finish Grade; P = Pass; F Comp = Fails Compaction; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F371	8/9/01	790200	836810	2	FP-38	117.2	12.9	116.7	10.9	99.6	P	
F372	8/9/01	790180	836870	2	FP-38	117.2	12.9	117.0	12.0	99.8	P	
F373	8/9/01	789680	836500	2	FP-38	117.2	12.9	113.4	10.9	96.8	P	
F374	8/9/01	789720	836680	2	FP-38	117.2	12.9	112.9	12.8	96.3	P	
F375	8/9/01	789800	836710	2	FP-38	117.2	12.9	115.3	11.2	98.4	P	
F376	8/9/01	789830	836540	2	FP-38	117.2	12.9	111.8	14.9	95.4	P	
F377	8/9/01	789920	836570	2	FP-38	117.2	12.9	114.3	12.3	97.5	P	
F378	* 8/9/01	789930	836740	2	FP-38	117.2	12.9	116.3	10.9	99.2	P	
F379	8/9/01	789870	836770	2	FP-38	117.2	12.9	115.5	10.9	98.5	P	
F380	8/10/01	789500	836550	2	FP-39	119.2	12.3	114.7	12.7	96.2	P	
F381	8/10/01	789570	836500	2	FP-39	119.2	12.3	115.1	15.5	96.6	P	
F382	8/10/01	789640	836600	2	FP-39	119.2	12.3	116.9	11.7	98.1	P	
F383	8/10/01	789700	836750	2	FP-39	119.2	12.3	117.0	13.1	98.2	P	
F384	8/10/01	789800	836800	2	FP-39	119.2	12.3	113.7	14.5	95.4	P	
F385	8/10/01	789550	836640	2	FP-39	119.2	12.3	115.0	13.6	96.5	P	
F386	8/10/01	789750	836750	2	FP-39	119.2	12.3	117.6	11.4	98.7	P	
F387	8/10/01	789840	836800	2	FP-39	119.2	12.3	113.9	12.1	95.6	P	
F388	8/10/01	789900	836840	2	FP-39	119.2	12.3	116.9	12.6	98.1	P	
F389	8/10/01	790000	836860	2	FP-39	119.2	12.3	116.2	12.0	97.5	P	
F390	8/10/01	789560	836700	2	FP-40	117.8	12.3	114.8	14.5	97.5	P	
F391	8/10/01	789800	836800	2	FP-40	117.8	12.3	113.4	11.1	96.3	P	
F392	8/10/01	789890	836700	2	FP-40	117.8	12.3	115.4	11.8	98.0	P	
F393	8/10/01	789990	836860	2	FP-40	117.8	12.3	117.4	11.2	99.7	P	
F394	8/10/01	790000	836750	2	FP-40	117.8	12.3	116.6	11.1	99.0	P	
F395	8/10/01	790050	836650	2	FP-40	117.8	12.3	117.2	13.1	99.5	P	
F396	* 8/10/01	790100	836800	2	FP-40	117.8	12.3	114.6	11.2	97.3	P	
F397	8/11/01	790650	836970	3	FP-40	117.8	12.3	113.8	13.8	96.6	P	
F398	8/11/01	790590	836880	3	FP-40	117.8	12.3	113.2	14.6	96.1	P	
F399	* 8/11/01	790490	836850	3	FP-40	117.8	12.3	113.6	12.2	96.4	P	
F400	8/11/01	790450	836910	3	FP-41	117.3	12.1	114.5	15.0	97.6	P	
F401	8/11/01	790380	836830	3	FP-41	117.3	12.1	112.3	14.2	95.7	P	
F402	8/11/01	790330	836890	3	FP-41	117.3	12.1	115.8	15.9	98.7	P	
F403	8/11/01	790270	836820	3	FP-41	117.3	12.1	111.6	14.6	95.1	P	
F404	* 8/11/01	790200	836850	3	FP-41	117.3	12.1	112.8	16.1	96.2	P	
F405	8/11/01	790150	836790	3	FP-41	117.3	12.1	113.3	14.5	96.6	P	
F406	8/11/01	790060	836720	3	FP-41	117.3	12.1	115.9	12.8	98.8	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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 Max.= Maximum; FG = Finish Grade; P = Pass; F Comp = Fails Compaction; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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				
F407	8/11/01	790000	836750	3	FP-41	117.3	12.1	112.5	15.1	95.9	P		
F408	8/11/01	789920	836680	3	FP-41	117.3	12.1	112.0	11.9	95.5	P		
F409	8/11/01	789910	836750	3	FP-41	117.3	12.1	112.2	16.1	95.7	P		
F410	8/14/01	789540	836696	4	FP-42	118.8	11.5	115.7	10.4	97.4	P		
F411	8/14/01	789561	836778	4	FP-42	118.8	11.5	115.3	12.0	97.1	P		
F412	8/14/01	789640	836722	4	FP-42	118.8	11.5	114.8	11.8	96.6	P		
F413	8/14/01	789718	836805	4	FP-42	118.8	11.5	114.2	10.2	96.1	P		
F414	*	8/14/01	789816	836758	4	FP-42	118.8	11.5	112.8	10.1	94.9	P	Compaction 0.1% below requirement (rounds up); test passed by QC officer.
F415	8/14/01	789922	836835	4	FP-42	118.8	11.5	117.4	10.4	98.8	P		
F416	*	8/14/01	789978	836802	4	FP-42	118.8	11.5	114.5	11.7	96.4	P	
F417	*	8/14/01	790123	836867	4	FP-42	118.8	11.5	118.1	12.5	99.4	P	
F418	8/14/01	790190	836852	4	FP-42	118.8	11.5	115.6	12.6	97.3	P		
F419	8/14/01	790312	836900	4	FP-42	118.8	11.5	113.2	10.3	95.3	P		
F419R	8/14/01	790312	836900	4	FP-42	118.8	11.5	116.2	11.6	97.8	P	Retest done at discretion of QC officer.	
F420	8/14/01	790555	836785	2	FP-43	119.6	11.8	115.5	10.5	96.6	P		
F421	8/14/01	790450	836740	2	FP-43	119.6	11.8	117.9	13.1	98.6	P		
F422	8/14/01	790330	836746	2	FP-43	119.6	11.8	115.0	10.5	96.2	P		
F423	8/14/01	790276	836705	2	FP-43	119.6	11.8	115.5	12.6	96.6	P		
F424	8/14/01	789736	836760	4	FP-43	119.6	11.8	113.7	13.4	95.1	P		
F425	8/15/01	790568	836795	3	FP-43	119.6	11.8	115.1	10.6	96.2	P		
F426	8/15/01	790445	836746	3	FP-43	119.6	11.8	116.0	10.3	97.0	P		
F427	8/15/01	790341	836753	3	FP-43	119.6	11.8	115.3	10.8	96.4	P		
F428	8/15/01	790281	836700	3	FP-43	119.6	11.8	115.0	11.0	96.2	P		
F429	*	8/15/01	789603	836791	5	FP-43	119.6	11.8	116.8	10.8	97.7	P	
F430	8/15/01	789743	836814	5	FP-44	117.3	13.2	117.0	12.1	99.7	P		
F431	8/15/01	789886	836846	5	FP-44	117.3	13.2	114.7	14.6	97.8	P		
F432	8/15/01	790023	836882	5	FP-44	117.3	13.2	115.2	13.9	98.2	P		
F433	8/15/01	790255	836792	5	FP-44	117.3	13.2	115.0	12.7	98.0	P		
F434	8/15/01	790069	836759	5	FP-44	117.3	13.2	113.5	13.5	96.8	P		
F435	8/16/01	790150	836650	3	FP-44	117.3	13.2	116.2	11.2	99.1	P		
F436	8/16/01	789663	836520	3	FP-44	117.3	13.2	112.8	11.3	96.2	P		
F437	8/16/01	789712	836406	3	FP-44	117.3	13.2	111.7	15.8	95.2	P		
F438	8/16/01	789954	836617	3	FP-44	117.3	13.2	112.7	14.5	96.1	P		
F439	8/16/01	790126	836685	3	FP-44	117.3	13.2	113.3	13.4	96.6	P		

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F440	8/16/01	789531	836468	3	FP-45	116.8	13.8	112.7	13.4	96.5	P	
F441	* 8/16/01	789691	836467	3	FP-45	116.8	13.8	117.0	11.9	100.2	P	
F442	8/16/01	789850	836506	3	FP-45	116.8	13.8	115.6	14.8	99.0	P	
F443	8/16/01	789848	836571	3	FP-45	116.8	13.8	113.5	12.8	97.2	P	
F444	8/16/01	790009	836586	3	FP-45	116.8	13.8	117.6	12.6	100.7	P	
F445	* 8/17/01	789584	836308	3	FP-45	116.8	13.8	114.2	13.1	97.8	P	
F446	8/17/01	789552	836382	3	FP-45	116.8	13.8	113.0	15.0	96.7	P	
F447	8/17/01	789553	836565	4	FP-45	116.8	13.8	113.2	12.7	96.9	P	
F448	8/17/01	789599	836636	4	FP-45	116.8	13.8	115.2	13.6	98.6	P	
F449	8/17/01	789696	836608	4	FP-45	116.8	13.8	115.9	14.0	99.2	P	
F450	8/17/01	789758	836690	4	FP-46	118.0	11.9	114.1	11.0	96.7	P	
F451	8/17/01	789882	836666	4	FP-46	118.0	11.9	116.4	12.4	98.6	P	
F452	* 8/17/01	789938	836742	4	FP-46	118.0	11.9	116.3	13.5	98.6	P	
F453	8/20/01	790061	836722	4	FP-46	118.0	11.9	120.9	11.4	102.5	P	
F454	8/20/01	790160	836808	4	FP-46	118.0	11.9	114.2	14.3	96.8	P	
F455	8/20/01	790238	836780	4	FP-46	118.0	11.9	116.3	11.8	98.6	P	
F456	8/20/01	790321	836836	4	FP-46	118.0	11.9	117.5	11.8	99.6	P	
F457	* 8/20/01	790408	836893	4	FP-46	118.0	11.9	114.5	12.6	97.0	P	
F458	8/20/01	790516	836861	4	FP-46	118.0	11.9	113.0	11.7	95.8	P	
F459	8/20/01	790580	836952	4	FP-46	118.0	11.9	119.3	10.3	101.1	P	
F460	8/22/01	789690	836420	4	FP-47	117.9	12.1	116.4	13.6	98.7	P	
F461	* 8/22/01	789660	836500	4	FP-47	117.9	12.1	112.0	14.7	95.0	P	
F462	8/22/01	789810	836530	4	FP-47	117.9	12.1	113.6	15.4	96.4	P	
F463	8/22/01	789850	836510	4	FP-47	117.9	12.1	113.0	11.1	95.8	P	
F464	8/22/01	789975	836646	4	FP-47	117.9	12.1	113.3	14.6	96.1	P	
F465	8/22/01	790031	836612	4	FP-47	117.9	12.1	116.0	12.4	98.4	P	
F466	8/22/01	790060	836622	4	FP-47	117.9	12.1	115.4	12.7	97.9	P	
F467	8/22/01	790120	836657	4	FP-47	117.9	12.1	113.8	12.6	96.5	P	
F468	8/22/01	790140	836705	4	FP-47	117.9	12.1	112.4	14.2	95.3	P	
F469	8/22/01	790202	836690	4	FP-47	117.9	12.1	112.9	15.1	95.8	P	
F470	8/22/01	790268	836743	4	FP-48	117.8	12.5	116.6	12.7	99.0	P	
F471	8/22/01	790300	836718	4	FP-48	117.8	12.5	112.8	16.4	95.8	P	
F472	8/30/01	789623	836352	1	FP-48	117.8	12.5	113.3	13.1	96.2	P	
F473	8/30/01	789590	836460	1	FP-48	117.8	12.5	112.9	14.5	95.8	P	
F474	8/31/01	789590	836300	2	FP-48	117.8	12.5	113.6	10.5	96.4	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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			
F475	8/31/01	789680	836410	2	FP-48	117.8	12.5	115.7	13.1	98.2	P	
F476	8/31/01	789560	836440	2	FP-48	117.8	12.5	112.9	14.0	95.8	P	
F477	9/4/01	789720	837840	1	FP-48	117.8	12.5	113.4	15.6	96.3	P	
F478	9/4/01	789825	837890	1	FP-48	117.8	12.5	120.3	13.7	102.1	P	
F479	9/4/01	789900	837920	1	FP-48	117.8	12.5	112.5	13.0	95.5	P	
F480	9/4/01	789860	837840	1	FP-49	117.5	12.0	112.6	13.2	95.8	P	
F481	* 9/4/01	789680	836395	3	FP-49	117.5	12.0	118.8	11.5	101.1	P	
F482	9/5/01	790085	836635	5	FP-49	117.5	12.0	114.6	11.3	97.5	P	
F483	9/5/01	789600	836525	4	FP-49	117.5	12.0	116.8	12.5	99.4	P	
F484	9/5/01	790557	836782	5	FP-49	117.5	12.0	117.7	11.8	100.2	P	
F485	9/5/01	790305	836695	5	FP-49	117.5	12.0	114.4	12.6	97.4	P	
F486	9/5/01	789625	836315	5	FP-49	117.5	12.0	114.4	13.7	97.4	P	
F487	9/5/01	789760	836520	5	FP-49	117.5	12.0	113.3	10.6	96.4	P	
F488	9/5/01	790220	836725	5	FP-49	117.5	12.0	112.2	10.9	95.5	P	
F489	9/5/01	790505	836800	5	FP-49	117.5	12.0	112.6	10.6	95.8	P	
F490	9/5/01	789910	836555	5	FP-50	115.7	12.9	112.2	12.8	97.0	P	
F491	9/5/01	789852	836550	5	FP-50	115.7	12.9	114.0	13.5	98.5	P	
F492	9/5/01	789915	836655	5	FP-50	115.7	12.9	116.3	15.5	100.5	P	
F493	9/7/01	789475	837720	1	FP-50	115.7	12.9	112.2	10.9	97.0	P	
F494	9/7/01	789460	837515	1	FP-50	115.7	12.9	112.3	13.0	97.1	P	
F495	9/7/01	789490	837460	1	FP-50	115.7	12.9	114.3	15.0	98.8	P	
F496	9/7/01	789475	837270	1	FP-50	115.7	12.9	116.9	11.0	101.0	P	
F497	9/7/01	789460	837037	1	FP-50	115.7	12.9	110.4	13.4	95.4	P	
F498	9/7/01	789480	837080	2	FP-50	115.7	12.9	113.5	12.8	98.1	P	
F499	9/7/01	789920	836585	5	FP-50	115.7	12.9	118.3	11.8	102.2	P	
F500	9/7/01	789681	836390	5	FP-51	115.3	13.7	114.3	12.9	99.1	P	
F501	9/7/01	789665	836465	5	FP-51	115.3	13.7	115.7	12.9	100.3	P	
F502	9/7/01	789720	836453	5	FP-51	115.3	13.7	114.6	10.9	99.4	P	Moisture 0.8% below requirement; test passed by QC officer.
F503	* 9/7/01	789540	837890	2	FP-51	115.3	13.7	115.0	12.3	99.7	P	
F504	9/7/01	789527	837805	2	FP-51	115.3	13.7	117.7	14.2	102.1	P	
F505	9/7/01	789525	837850	2	FP-51	115.3	13.7	119.2	13.8	103.4	P	
F506	9/7/01	789650	837835	1	FP-51	115.3	13.7	114.9	12.0	99.7	P	
F507	9/7/01	789685	837873	1	FP-51	115.3	13.7	118.3	12.8	102.6	P	
F508	9/7/01	789840	837895	2	FP-51	115.3	13.7	118.6	12.6	102.9	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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				
F509	9/7/01	789830	837930	2	FP-51	115.3	13.7	117.4	12.6	101.8	P		
F510	9/7/01	789735	837900	2	FP-52	117.0	12.3	113.5	11.8	97.0	P		
F511	9/7/01	789612	837888	2	FP-52	117.0	12.3	111.1	11.1	95.0	P		
F512	9/10/01	789560	836575	5	FP-52	117.0	12.3	111.1	13.2	95.0	P		
F513	9/10/01	789485	837592	3	FP-52	117.0	12.3	112.5	13.6	96.2	P		
F514	9/10/01	789457	837485	3	FP-52	117.0	12.3	114.4	11.9	97.8	P		
F515	9/10/01	789483	837405	3	FP-52	117.0	12.3	113.7	10.4	97.2	P		
F516	9/10/01	789468	837310	3	FP-52	117.0	12.3	111.9	14.3	95.6	P		
F517	*	9/10/01	789490	837240	3	FP-52	117.0	12.3	116.5	13.8	99.6	P	
F518	9/10/01	789450	837180	3	FP-52	117.0	12.3	111.3	15.8	95.1	P		
F519	9/10/01	789475	837035	3	FP-52	117.0	12.3	113.1	14.2	96.7	P		
F520	9/10/01	789551	837817	3	FP-53	114.5	14.0	116.8	14.7	102.0	P		
F521	9/10/01	789565	837885	3	FP-53	114.5	14.0	109.8	13.1	95.9	P		
F522	9/10/01	789625	837840	3	FP-53	114.5	14.0	112.9	14.2	98.6	P		
F523	9/10/01	789727	837860	3	FP-53	114.5	14.0	111.8	13.8	97.6	P		
F524	9/10/01	789877	837913	4	FP-53	114.5	14.0	113.9	13.0	99.5	P		
F525	9/10/01	789760	837915	4	FP-53	114.5	14.0	111.7	13.6	97.6	P		
F526	9/10/01	789645	837893	4	FP-53	114.5	14.0	113.0	13.4	98.7	P		
F527	4/30/02	789340	837818	4	FP-54	115.0	13.2	109.3	12.3	95.0	P		
F528	4/30/02	789525	837829	4	FP-54	115.0	13.2	109.9	14.9	95.6	P		
F529	4/30/02	789847	837947	FG	FP-54	115.0	13.2	109.1	16.0	95.0	P		
F530	4/30/02	789715	837918	FG	FP-54	115.0	13.2	109.7	14.5	95.4	P		
F531	*	4/30/02	789490	837898	1	FP-54	115.0	13.2	111.1	13.6	96.6	P	
F532	*	5/6/02	789470	837925	FG	FP-54	115.0	13.2	110.0	14.1	95.7	P	
F533	5/6/02	789510	837955	FG	FP-54	115.0	13.2	111.0	12.6	96.5	P		
F534	5/6/02	789560	837995	FG	FP-54	115.0	13.2	117.7	12.0	102.4	P		
F535	5/6/02	789700	837200	FG	FP-54	115.0	13.2	117.3	11.8	102.0	P		
F536	5/6/02	789750	837200	FG	FP-54	115.0	13.2	112.4	17.6	97.7	P		
F537	5/6/02	789790	837200	FG	FP-55	117.3	12.2	111.6	11.3	95.1	P		
F538	*	5/6/02	789680	837250	FG	FP-55	117.3	12.2	116.8	13.4	99.5	P	
F539	5/6/02	789730	837300	FG	FP-55	117.3	12.2	112.8	10.5	96.2	P		
F540	5/6/02	789980	837300	FG	FP-55	117.3	12.2	113.8	16.6	97.0	P		
F541	5/6/02	789840	837310	FG	FP-55	117.3	12.2	118.5	14.0	101.0	P		
F542	5/6/02	789900	837340	FG	FP-55	117.3	12.2	114.8	13.8	97.9	P		
F543	*	5/15/02	789530	836630	FG	FP-55	117.3	12.2	124.6	10.4	106.2	P	
F544	5/15/02	789680	836570	FG	FP-55	117.3	12.2	119.6	11.6	102.0	P		

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F545	5/15/02	789845	836600	FG	FP-55	117.3	12.2	114.9	13.0	97.9	P	
F546	5/15/02	789985	836550	FG	FP-55	117.3	12.2	122.2	10.7	104.2	P	
F547	5/15/02	789720	836480	FG	FP-56	117.3	12.4	113.6	12.9	96.8	P	
F548	5/15/02	789500	836880	FG	FP-56	117.3	12.4	113.0	14.9	96.3	P	
F549	5/15/02	789400	836900	FG	FP-56	117.3	12.4	113.7	13.9	96.9	P	
F550	5/15/02	789550	836430	FG	FP-56	117.3	12.4	115.1	14.6	98.1	P	
F551	5/16/02	790000	836750	FG	FP-56	117.3	12.4	112.2	13.6	95.7	P	
F552	5/16/02	789600	836660	FG	FP-56	117.3	12.4	117.3	12.7	100.0	P	
F553	5/17/02	789675	836510	FG	FP-56	117.3	12.4	113.4	11.7	96.7	P	
F554	5/17/02	789795	836720	FG	FP-56	117.3	12.4	115.0	10.9	98.0	P	
F555	5/17/02	789900	836515	FG	FP-56	117.3	12.4	116.1	12.8	99.0	P	
F556	5/17/02	789995	836640	FG	FP-56	117.3	12.4	111.4	14.6	95.0	P	
F557	5/21/02	789750	836700	FG	FP-57	119.9	11.8	113.9	9.9	95.0	P	
F558	5/21/02	789980	836750	FG	FP-57	119.9	11.8	118.6	10.6	98.9	P	
F559	5/21/02	789900	836630	FG	FP-57	119.9	11.8	116.5	9.4	97.2	P	Moisture 0.4% below requirement; test passed by QC officer.
F560	5/22/02	789400	837250	FG	FP-57	119.9	11.8	116.8	12.8	97.4	P	
F561	5/22/02	789500	836540	FG	FP-57	119.9	11.8	114.9	10.4	95.8	P	
F562	5/22/02	789500	836800	FG	FP-57	119.9	11.8	114.4	14.0	95.4	P	
F563	5/22/02	789550	836870	FG	FP-57	119.9	11.8	115.4	12.3	96.2	P	
F564	6/10/02	789600	836290	1	FP-58	115.4	13.9	109.7	14.7	95.1	P	
F565	6/13/02	789480	836440	1	FP-57	119.9	11.8	119.4	13.6	99.6	P	
F566	6/13/02	789500	836500	1	FP-57	119.9	11.8	116.4	13.0	97.1	P	
F567	6/13/02	789490	836620	1	FP-57	119.9	11.8	117.3	13.9	97.8	P	
F568	6/18/02	789500	836615	2	FP-58	115.4	13.9	111.8	15.0	96.9	P	
F569	6/18/02	789570	836340	2	FP-58	115.4	13.9	114.6	16.0	99.3	P	
F570	6/18/02	789440	836620	2	FP-58	115.4	13.9	113.6	13.7	98.4	P	
F571	6/18/02	789470	836740	2	FP-58	115.4	13.9	111.0	15.0	96.2	P	
F572	6/26/02	789500	836450	2	FP-58	115.4	13.9	111.1	12.5	96.3	P	
F573	6/26/02	789450	837600	3	FP-58	115.4	13.9	114.2	13.0	99.0	P	
F574	6/27/02	789360	837890	4	FP-58	115.4	13.9	111.2	12.7	96.4	P	
F575	6/27/02	789640	836760	5	FP-58	115.4	13.9	110.6	12.2	95.8	P	
F576	7/8/02	790100	836850	FG	FP-58	115.4	13.9	114.2	12.5	99.0	P	
F577	* 7/8/02	789900	836750	FG	FP-58	115.4	13.9	113.5	14.0	98.4	P	
F578	* 7/8/02	789424	836995	1	FP-59	118.5	11.5	115.9	10.7	97.8	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F579	7/8/02	789420	837284	1	FP-59	118.5	11.5	113.5	9.8	95.8	P	
F580	7/8/02	789398	837624	1	FP-59	118.5	11.5	113.1	13.3	95.4	P	
F581	* 7/9/02	789383	837660	1	FP-59	118.5	11.5	113.9	10.0	96.1	P	
F582	7/9/02	789375	837433	1	FP-59	118.5	11.5	113.3	11.7	95.6	P	
F583	7/9/02	789370	837237	1	FP-59	118.5	11.5	114.6	9.8	96.7	P	
F584	7/9/02	789370	837005	1	FP-59	118.5	11.5	113.7	9.5	95.9	P	
F585	7/9/02	789325	837013	1	FP-59	118.5	11.5	113.1	9.8	95.4	P	
F586	7/9/02	789325	837210	1	FP-59	118.5	11.5	113.6	9.6	95.9	P	
F587	7/9/02	789330	837373	1	FP-59	118.5	11.5	113.8	12.3	96.0	P	
F588	7/9/02	789335	837667	1	FP-60	114.5	13.8	111.8	13.0	97.6	P	
F589	7/9/02	789295	837530	1	FP-60	114.5	13.8	112.1	14.8	97.9	P	
F590	7/9/02	789290	837405	1	FP-60	114.5	13.8	111.2	14.2	97.1	P	
F591	7/9/02	789292	837275	1	FP-60	114.5	13.8	110.7	12.4	96.7	P	
F592	7/9/02	789285	837110	1	FP-60	114.5	13.8	110.2	15.7	96.2	P	
F593	7/12/02	789425	837020	2	FP-60	114.5	13.8	116.5	11.9	101.7	P	
F594	7/12/02	789405	837215	2	FP-60	114.5	13.8	110.5	15.5	96.5	P	
F595	7/12/02	789415	837410	2	FP-60	114.5	13.8	104.2	16.2	91.0	F Comp	Fails Compaction
F595R	7/12/02	789415	837410	2	FP-60	114.5	13.8	115.9	13.6	101.2	P	Retest
F596	7/12/02	789390	837580	2	FP-60	114.5	13.8	107.4	18.4	93.8	F Comp	Fails Compaction
F596R	7/12/02	789390	837580	2	FP-60	114.5	13.8	112.4	15.3	98.2	P	Retest
F597	7/12/02	789375	837025	2	FP-60	114.5	13.8	115.3	15.7	100.7	P	
F598	7/12/02	789380	837175	2	FP-61	116.9	13.7	111.0	12.8	95.0	P	
F599	7/12/02	789385	837345	2	FP-61	116.9	13.7	108.2	12.9	92.6	F Comp	Fails Compaction
F599R	7/12/02	789385	837345	2	FP-61	116.9	13.7	117.3	14.7	100.3	P	Retest
F600	7/12/02	789375	837525	2	FP-61	116.9	13.7	108.3	13.1	92.6	F Comp	Fails Compaction
F600R	7/12/02	789375	837525	2	FP-61	116.9	13.7	116.0	12.9	99.2	P	Retest
F601	7/12/02	789325	837030	2	FP-61	116.9	13.7	104.6	16.3	89.5	F Comp	Fails Compaction
F601R	7/12/02	789325	837030	2	FP-61	116.9	13.7	114.0	12.0	97.5	P	Retest
F602	7/12/02	789325	837185	2	FP-61	116.9	13.7	112.3	11.7	96.1	P	
F603	7/15/02	789325	837405	2	FP-62	117.5	12.5	115.8	11.4	98.6	P	
F604	* 7/15/02	789335	837615	2	FP-62	117.5	12.5	114.0	13.7	97.0	P	
F605	7/15/02	789285	837065	2	FP-62	117.5	12.5	113.9	14.4	96.9	P	
F606	7/15/02	789290	837220	2	FP-62	117.5	12.5	117.6	12.0	100.1	P	
F607	7/15/02	789285	837425	2	FP-62	117.5	12.5	113.7	13.7	96.8	P	
F608	7/16/02	790400	836850	FG	FP-62	117.5	12.5	112.0	13.9	95.3	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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		
F609	7/16/02	790300	836850	FG	FP-62	117.5	12.5	114.8	11.4	97.7	P	
F610	7/16/02	789420	837040	3	FP-62	117.5	12.5	113.4	12.7	96.5	P	
F611	7/16/02	789415	837165	3	FP-62	117.5	12.5	114.2	12.4	97.2	P	
F612	7/16/02	789410	837315	3	FP-62	117.5	12.5	118.9	10.5	101.2	P	
F613	*	7/16/02	789410	3	FP-63	119.9	11.9	117.0	11.5	97.6	P	
F614		7/16/02	789395	3	FP-63	119.9	11.9	114.5	10.7	95.5	P	
F615		7/16/02	789370	3	FP-63	119.9	11.9	115.0	12.1	95.9	P	
F616		7/16/02	789360	3	FP-63	119.9	11.9	114.1	14.6	95.2	P	
F617		7/16/02	789355	3	FP-63	119.9	11.9	115.8	11.9	96.6	P	
F618		7/17/02	789330	3	FP-63	119.9	11.9	117.3	12.2	97.8	P	
F619		7/17/02	789310	3	FP-63	119.9	11.9	121.6	13.6	101.4	P	
F620		7/17/02	789320	3	FP-63	119.9	11.9	113.9	14.0	95.0	P	
F621		7/17/02	789322	3	FP-63	119.9	11.9	113.9	17.2	95.0	P	
F622		7/17/02	789295	3	FP-63	119.9	11.9	118.4	10.7	98.7	P	
F623		7/17/02	789285	3	FP-64	117.5	12.5	111.6	14.4	95.0	P	
F624		7/17/02	789280	3	FP-64	117.5	12.5	113.1	11.5	96.3	P	
F625		7/17/02	789285	3	FP-64	117.5	12.5	111.7	11.6	95.1	P	
F626		7/26/02	789445	1	FP-64	117.5	12.5	114.7	10.5	97.6	P	
F627		7/26/02	789438	1	FP-64	117.5	12.5	116.1	12.9	98.8	P	
F628		7/26/02	789440	2	FP-64	117.5	12.5	111.6	14.5	95.0	P	
F629		7/30/02	789380	1	FP-64	117.5	12.5	112.6	13.3	95.8	P	
F630	*	7/30/02	789390	2	FP-64	117.5	12.5	116.1	11.9	98.8	P	
F631		8/2/02	789490	4	FP-64	117.5	12.5	112.9	14.0	96.1	P	
F632		8/2/02	789485	4	FP-64	117.5	12.5	111.6	11.0	95.0	P	
F633		8/2/02	789495	4	FP-65	118.8	11.3	114.9	11.4	96.7	P	
F634		8/2/02	789345	4	FP-65	118.8	11.3	122.4	12.9	103.0	P	
F635		8/2/02	789350	4	FP-65	118.8	11.3	112.9	16.2	95.0	P	
F636		8/2/02	789225	1	FP-65	118.8	11.3	115.5	13.5	97.2	P	
F637		8/2/02	789210	1	FP-65	118.8	11.3	117.2	10.5	98.6	P	
F638		8/5/02	789340	1	FP-66	114.1	13.9	114.0	13.2	99.9	P	
F639	*	8/5/02	789215	1	FP-66	114.1	13.9	111.8	12.2	98.0	P	
F640		8/5/02	789190	1	FP-66	114.1	13.9	112.8	12.2	98.9	P	
F641		8/5/02	789495	3	FP-66	114.1	13.9	113.5	12.7	99.5	P	
F642		8/5/02	789445	3	FP-66	114.1	13.9	110.9	12.6	97.2	P	
F643	*	8/5/02	789400	3	FP-66	114.1	13.9	112.5	12.2	98.6	P	
F644		8/6/02	789345	1	FP-66	114.1	13.9	119.2	11.9	104.5	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F645	8/6/02	789435	836880	1	FP-66	114.1	13.9	108.6	14.4	95.2	P	
F646	8/6/02	789350	836945	1	FP-66	114.1	13.9	112.5	14.5	98.6	P	
F647	* 8/6/02	789185	837575	1	FP-66	114.1	13.9	110.3	11.9	96.7	P	
F648	8/6/02	789265	837640	1	FP-67	115.9	13.0	111.6	12.5	96.3	P	
F649	8/6/02	789220	837230	1	FP-67	115.9	13.0	110.2	13.0	95.1	P	
F650	8/6/02	789260	837115	1	FP-67	115.9	13.0	115.3	13.7	99.5	P	
F651	8/6/02	789355	837120	1	FP-67	115.9	13.0	113.5	14.5	97.9	P	
F652	8/6/02	789385	837885	1	FP-67	115.9	13.0	118.0	13.6	101.8	P	
F653	8/6/02	789305	837880	1	FP-67	115.9	13.0	113.4	12.0	97.8	P	
F654	8/6/02	789225	837885	1	FP-67	115.9	13.0	116.0	13.3	100.1	P	
F655	8/6/02	789160	837875	1	FP-67	115.9	13.0	111.2	11.1	95.9	P	
F656	8/6/02	789220	837805	1	FP-67	115.9	13.0	110.4	12.5	95.3	P	
F657	8/6/02	789305	837810	1	FP-67	115.9	13.0	110.3	11.0	95.2	P	
F658	8/6/02	789390	837815	1	FP-68	117.3	12.5	115.8	13.7	98.7	P	
F659	* 8/7/02	789347	837735	1	FP-68	117.3	12.5	118.0	11.5	100.6	P	
F660	8/7/02	789282	837727	1	FP-68	117.3	12.5	113.8	12.6	97.0	P	
F661	8/8/02	789235	837710	1	FP-68	117.3	12.5	112.8	15.1	96.2	P	
F662	8/8/02	789155	837692	1	FP-68	117.3	12.5	117.6	10.7	100.3	P	
F663	8/8/02	789185	837770	1	FP-68	117.3	12.5	114.5	10.9	97.6	P	
F664	8/8/02	789160	837750	1	FP-68	117.3	12.5	115.8	10.6	98.7	P	
F665	8/8/02	789375	836755	3	FP-68	117.3	12.5	111.5	11.2	95.1	P	
F666	8/8/02	789438	836670	3	FP-68	117.3	12.5	111.5	14.9	95.1	P	
F667	8/8/02	789540	836450	4	FP-68	117.3	12.5	112.5	16.2	95.9	P	
F668	8/8/02	789510	836405	4	FP-69	117.2	12.6	112.2	12.4	95.7	P	
F669	* 8/8/02	789538	836345	4	FP-69	117.2	12.6	111.5	11.6	95.1	P	
F670	8/8/02	789378	837865	2	FP-69	117.2	12.6	118.3	12.0	100.9	P	
F671	8/8/02	789255	837867	2	FP-69	117.2	12.6	112.7	10.6	96.2	P	
F672	8/8/02	789160	837870	2	FP-69	117.2	12.6	118.1	12.6	100.8	P	
F673	8/8/02	789165	837780	2	FP-69	117.2	12.6	114.1	10.6	97.4	P	
F674	8/8/02	789275	837795	2	FP-69	117.2	12.6	115.2	11.1	98.3	P	
F675	8/14/02	789200	837730	2	FP-69	117.2	12.6	119.7	11.2	102.1	P	
F676	8/14/02	789245	837745	2	FP-69	117.2	12.6	115.5	12.6	98.5	P	
F677	* 8/14/02	789165	837822	2	FP-69	117.2	12.6	113.0	10.6	96.4	P	
F678	8/15/02	789420	836920	3	FP-70	118.0	12.1	114.5	12.9	97.0	P	
F679	8/15/02	789345	836925	3	FP-70	118.0	12.1	112.1	14.6	95.0	P	
F680	8/15/02	789355	836870	3	FP-70	118.0	12.1	112.2	10.3	95.1	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F681	8/15/02	789430	836875	3	FP-70	118.0	12.1	112.3	12.6	95.2	P	
F682	8/15/02	789415	836820	3	FP-70	118.0	12.1	112.2	10.1	95.1	P	
F683	* 8/15/02	789370	836810	4	FP-70	118.0	12.1	113.9	11.3	96.5	P	
F684	8/15/02	789435	836765	4	FP-70	118.0	12.1	117.2	11.3	99.3	P	
F685	8/15/02	789385	836765	4	FP-70	118.0	12.1	112.1	12.3	95.0	P	
F686	8/15/02	789442	836710	4	FP-70	118.0	12.1	112.8	11.8	95.6	P	
F687	8/15/02	789480	836615	4	FP-70	118.0	12.1	115.0	10.5	97.5	P	
F688	8/21/02	789460	836950	3	FP-71	115.3	13.5	112.0	11.8	97.1	P	
F689	8/21/02	789495	837000	4	FP-71	115.3	13.5	111.8	12.1	96.9	P	
F690	8/21/02	789330	837060	FG	FP-71	115.3	13.5	112.4	11.7	97.5	P	
F691	8/21/02	789395	837130	FG	FP-71	115.3	13.5	112.0	15.5	97.1	P	
F692	8/21/02	789420	837205	FG	FP-71	115.3	13.5	112.0	15.1	97.1	P	
F693	8/21/02	789390	837270	FG	FP-71	115.3	13.5	110.5	12.6	95.8	P	
F694	8/21/02	789425	837355	FG	FP-71	115.3	13.5	111.8	12.9	96.9	P	
F695	8/21/02	789360	837355	FG	FP-71	115.3	13.5	113.3	16.0	98.3	P	
F696	* 8/21/02	789415	837505	FG	FP-71	115.3	13.5	112.3	16.9	97.4	P	
F697	8/21/02	789398	837702	FG	FP-71	115.3	13.5	110.8	13.6	96.1	P	
F698	8/21/02	789345	837702	FG	FP-72	115.2	14.0	116.6	14.2	101.2	P	
F699	8/21/02	789245	837660	4	FP-72	115.2	14.0	113.6	12.0	98.6	P	
F700	8/21/02	789250	837765	4	FP-72	115.2	14.0	113.8	12.8	98.8	P	
F701	8/22/02	789550	836960	FG	FP-72	115.2	14.0	109.5	16.1	95.1	P	
F702	8/22/02	789450	837070	FG	FP-72	115.2	14.0	113.4	13.0	98.4	P	
F703	8/22/02	789550	837250	FG	FP-72	115.2	14.0	109.6	17.3	95.1	P	
F704	8/22/02	789535	837365	FG	FP-72	115.2	14.0	109.5	19.2	95.1	P	
F705	8/22/02	789498	837702	FG	FP-72	115.2	14.0	110.5	15.3	95.9	P	
F706	8/22/02	789480	837815	FG	FP-72	115.2	14.0	111.3	15.6	96.6	P	
F707	9/9/02	789790	838025	FG	FP-73	119.2	12.1	117.6	12.3	98.7	P	
F708	9/9/02	789690	838045	FG	FP-73	119.2	12.1	113.2	10.7	95.0	P	
F709	9/9/02	789600	838035	FG	FP-73	119.2	12.1	113.2	10.3	95.0	P	
F710	6/20/03	789430	836400	1	FP-74	121.1	11.8	111.1	11.3	91.7	F Comp	Fails Compaction
F710R	6/20/03	789430	836400	1	FP-74	121.1	11.8	117.3	12.1	96.9	P	Retest
F711	6/20/03	789470	836310	2	FP-74	121.1	11.8	110.2	15.2	91.0	F Comp	Fails Compaction
F711R	* 6/20/03	789470	836310	2	FP-74	121.1	11.8	115.0	9.8	95.0	P	Retest
F712	6/20/03	789430	836430	1	FP-74	121.1	11.8	115.4	14.7	95.3	P	
F713	6/20/03	789400	836600	1	FP-74	121.1	11.8	115.9	13.9	95.7	P	
F714	6/20/03	789360	836490	2	FP-74	121.1	11.8	119.4	11.7	98.6	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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		
F715	6/20/03	789380	836570	2	FP-74	121.1	11.8	115.7	11.5	95.5	P	
F716	6/23/03	789300	836700	1	FP-75	118.4	12.8	111.4	12.2	94.1	F Comp	Fails Compaction
F716R	6/27/03	789300	836700	1	FP-75	118.4	12.8	113.1	14.5	95.5	P	Retest
F717	6/23/03	789350	836770	1	FP-75	118.4	12.8	115.2	12.7	97.3	P	
F718	6/23/03	789240	836820	1	FP-75	118.4	12.8	114.6	13.3	96.8	P	
F719	6/23/03	789320	836890	1	FP-75	118.4	12.8	114.1	10.9	96.3	P	
F720	6/27/03	789200	836900	1	FP-75	118.4	12.8	114.5	14.2	96.7	P	
F721	* 6/30/03	789150	837150	1	FP-75	118.4	12.8	118.0	11.5	99.6	P	
F722	6/30/03	789100	837250	1	FP-75	118.4	12.8	112.7	14.6	95.2	P	
F723	6/30/03	789400	837650	4	FP-78	116.0	13.2	112.7	17.7	97.6	P	
F724	6/30/03	789450	837650	4	FP-78	116.0	13.2	115.3	12.7	99.4	P	
F725	6/30/03	789350	837600	4	FP-78	116.0	13.2	113.1	16.7	97.4	P	
F726	6/30/03	789300	837580	4	FP-78	116.0	13.2	112.4	15.0	96.8	P	
F727	6/30/03	789250	837580	4	FP-78	116.0	13.2	118.1	11.5	101.8	P	
F728	7/1/03	789320	837650	4	FP-75	118.4	12.8	108.9	11.5	92.0	F Comp	Fails Compaction
F728R	7/1/03	789320	837650	4	FP-75	118.4	12.8	114.2	11.2	96.5	P	Retest
F729	7/1/03	789280	837660	4	FP-75	118.4	12.8	116.1	13.7	98.1	P	
F730	7/1/03	789240	837620	4	FP-75	118.4	12.8	116.7	10.4	98.6	F Moist	Fails Moisture
F730R	7/1/03	789240	837620	4	FP-75	118.4	12.8	114.9	15.1	97.0	P	Retest
F731	7/1/03	789100	837500	1	FP-76	117.4	13.0	113.4	14.9	96.6	P	
F732	7/1/03	789020	837550	1	FP-76	117.4	13.0	113.7	14.0	96.8	P	
F733	7/1/03	789100	837600	1	FP-76	117.4	13.0	117.0	11.9	99.6	P	
F734	7/1/03	789000	837700	1	FP-76	117.4	13.0	113.0	11.1	96.3	P	
F735	7/1/03	789100	837750	1	FP-76	117.4	13.0	116.3	13.7	99.1	P	
F736	7/1/03	789050	837700	1	FP-76	117.4	13.0	114.3	12.7	97.3	P	
F737	* 7/2/03	789160	837050	1	FP-76	117.4	13.0	114.9	12.7	97.8	P	
F738	7/2/03	789150	837175	1	FP-76	117.4	13.0	111.5	13.2	95.0	P	
F739	7/2/03	789100	837200	1	FP-76	117.4	13.0	115.6	12.5	98.5	P	
F740	7/2/03	789150	837250	1	FP-76	117.4	13.0	115.6	9.0	98.4	F Moist	Fails Moisture
F740R	7/9/03	789150	837250	1	FP-76	117.4	13.0	117.7	13.5	100.2	P	Retest
F741	* 7/2/03	789060	837275	1	FP-77	118.0	12.0	119.4	12.6	101.2	P	
F742	7/2/03	789150	837300	1	FP-77	118.0	12.0	116.4	10.9	98.6	P	
F743	7/2/03	789100	837350	1	FP-77	118.0	12.0	116.4	11.7	98.6	P	
F744	7/2/03	789090	837450	1	FP-77	118.0	12.0	118.0	9.0	100.0	F Moist	Fails Moisture
F744R	7/9/03	789090	837450	1	FP-77	118.0	12.0	117.2	13.5	99.3	P	Retest
F745	7/16/03	789410	836620	2	FP-77	118.0	12.0	121.4	12.9	102.9	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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				
F746	7/17/03	789350	836600	2	FP-77	118.0	12.0	118.8	10.6	100.6	P		
F747	7/17/03	789310	836720	2	FP-77	118.0	12.0	117.6	12.8	99.7	P		
F748	7/17/03	789275	836775	2	FP-77	118.0	12.0	119.2	11.4	101.0	P		
F749	7/17/03	789250	836850	2	FP-77	118.0	12.0	112.5	13.6	95.3	P		
F750	7/17/03	789270	836920	2	FP-77	118.0	12.0	118.2	14.8	100.1	P		
F751	7/17/03	788880	837915	1	FP-79	114.8	14.0	110.9	12.9	96.6	P		
F752	7/17/03	788790	837990	1	FP-79	114.8	14.0	113.8	13.4	99.1	P		
F753	7/17/03	788750	837680	1	FP-79	114.8	14.0	113.2	13.7	98.6	P		
F754	7/17/03	788760	837750	1	FP-79	114.8	14.0	113.4	12.6	98.8	P		
F755	7/17/03	788720	837650	1	FP-79	114.8	14.0	111.0	12.3	96.7	P		
F756	*	7/17/03	788900	837700	1	FP-79	114.8	14.0	113.9	12.3	99.2	P	
F757		7/17/03	788690	837690	1	FP-79	114.8	14.0	111.2	13.6	96.9	P	
F758		7/17/03	788560	837690	1	FP-79	114.8	14.0	110.3	13.8	96.1	P	
F759		7/17/03	788610	837810	1	FP-79	114.8	14.0	110.0	13.5	95.8	P	
F760		7/17/03	788690	837890	1	FP-79	114.8	14.0	114.5	13.7	99.7	P	
F761		7/17/03	789180	837100	2	FP-80	114.0	13.2	115.2	12.2	101.1	P	
F762		7/17/03	789170	837300	2	FP-80	114.0	13.2	112.9	11.9	99.0	P	
F763		7/17/03	789160	837500	2	FP-80	114.0	13.2	108.8	14.2	95.4	P	
F764	*	7/18/03	789050	837650	2	FP-80	114.0	13.2	112.0	12.2	98.2	P	
F765		7/18/03	789050	837700	2	FP-80	114.0	13.2	118.0	12.0	103.5	P	
F766		7/18/03	789090	837425	2	FP-80	114.0	13.2	116.4	13.9	102.1	P	
F767		7/18/03	789075	837490	2	FP-80	114.0	13.2	108.9	13.5	95.5	P	
F768		7/18/03	789100	837550	2	FP-80	114.0	13.2	103.0	19.8	90.4	F Comp	Fails Compaction
F768R		7/21/03	789100	837550	2	FP-80	114.0	13.2	112.7	12.4	98.9	P	Retest
F769		7/21/03	789050	837100	2	FP-80	114.0	13.2	109.2	12.4	95.8	P	
F770		7/21/03	789075	837200	2	FP-80	114.0	13.2	112.9	14.9	99.0	P	
F771		7/22/03	789450	836300	2	FP-81	119.0	12.0	108.5	12.4	91.2	F Comp	Fails Compaction
F771R		7/22/03	789450	836300	2	FP-81	119.0	12.0	117.4	11.0	98.7	P	Retest
F772		7/22/03	789400	836330	2	FP-81	119.0	12.0	110.7	13.3	93.0	F Comp	Fails Compaction
F772R		7/22/03	789400	836330	2	FP-81	119.0	12.0	117.3	12.3	98.6	P	Retest
F773	*	7/22/03	789450	836400	2	FP-81	119.0	12.0	112.4	11.9	94.5	F Comp	Fails Compaction
F773R		7/22/03	789450	836400	2	FP-81	119.0	12.0	113.4	11.6	95.3	P	Retest
F774		7/22/03	789420	836480	2	FP-81	119.0	12.0	114.9	13.6	96.6	P	
F775		7/22/03	789450	836480	2	FP-81	119.0	12.0	113.9	12.9	95.7	P	
F776		7/22/03	789420	836540	2	FP-81	119.0	12.0	118.1	13.1	99.2	P	
F777	*	7/22/03	789360	836530	2	FP-81	119.0	12.0	116.3	14.1	97.7	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F778	7/22/03	789120	837870	2	FP-81	119.0	12.0	114.1	12.2	95.8	P	
F779	7/22/03	789070	837770	2	FP-81	119.0	12.0	112.1	11.3	94.2	F Comp	Fails Compaction
F779R	7/24/03	789070	837770	2	FP-81	119.0	12.0	113.4	12.3	95.3	P	Retest
F780	7/22/03	789020	837670	2	FP-81	119.0	12.0	111.6	16.5	93.8	F Comp	Fails Compaction
F780R	7/24/03	789020	837670	2	FP-81	119.0	12.0	114.6	14.8	96.3	P	Retest
F781	7/22/03	789150	837780	2	FP-82	117.0	12.8	112.8	11.3	96.4	P	
F782	7/23/03	789150	837600	3	FP-82	117.0	12.8	111.4	13.1	95.2	P	
F783	7/23/03	789200	837550	3	FP-82	117.0	12.8	112.4	12.2	96.0	P	
F784	7/23/03	789150	837425	3	FP-82	117.0	12.8	111.7	14.9	95.4	P	
F785	7/23/03	789200	837400	3	FP-82	117.0	12.8	113.5	11.8	97.0	P	
F786	7/23/03	789200	837325	3	FP-82	117.0	12.8	108.5	13.2	92.7	F Comp	Fails Compaction
F786R	7/25/03	789200	837325	3	FP-82	117.0	12.8	116.1	13.1	99.2	P	Retest
F786R2	8/6/03	789200	837325	3	FP-82	117.0	12.8	117.2	11.4	100.2	P	Retest verification sample
F787 *	7/23/03	789200	837350	2	FP-82	117.0	12.8	111.6	13.8	95.4	P	
F788	7/24/03	789050	837500	3	FP-82	117.0	12.8	117.0	13.0	100.0	P	
F789	7/24/03	789100	837475	3	FP-82	117.0	12.8	107.4	19.0	91.8	F Comp	Fails Compaction
F789R	7/25/03	789100	837475	3	FP-82	117.0	12.8	115.1	16.9	98.4	P	Retest
F789R2	8/6/03	789100	837475	3	FP-82	117.0	12.8	119.5	11.8	102.1	P	Retest verification sample
F790	7/24/03	789010	837450	3	FP-82	117.0	12.8	112.6	15.1	96.2	P	
F791	7/24/03	789250	837225	3	FP-83	119.0	12.0	115.5	13.6	97.1	P	
F792	7/24/03	789100	837300	3	FP-83	119.0	12.0	113.7	12.4	95.5	P	
F793	7/24/03	789050	837314	3	FP-83	119.0	12.0	115.1	13.0	96.7	P	
F794	7/24/03	789100	837239	3	FP-83	119.0	12.0	113.5	15.1	95.4	P	
F795 *	7/24/03	789150	837212	3	FP-83	119.0	12.0	113.4	15.0	95.3	P	
F796	7/24/03	789200	837140	3	FP-83	119.0	12.0	114.5	14.2	96.2	P	
F797	7/24/03	789150	837131	3	FP-83	119.0	12.0	113.6	11.7	95.5	P	
F798	7/24/03	789250	837100	3	FP-83	119.0	12.0	111.2	13.9	93.4	F Comp	Fails Compaction
F798R	7/28/03	789250	837100	3	FP-83	119.0	12.0	114.6	14.4	96.3	P	Retest
F799	7/24/03	789200	837090	3	FP-83	119.0	12.0	114.0	12.4	95.8	P	
F800	7/24/03	789150	837050	3	FP-83	119.0	12.0	118.6	11.5	99.7	P	
F801	7/24/03	789010	837100	3	FP-84	119.9	12.2	114.3	15.5	95.3	P	
F802	7/24/03	789100	837802	3	FP-84	119.9	12.2	115.1	15.0	96.0	P	
F803	7/24/03	789200	837701	3	FP-84	119.9	12.2	116.4	13.8	97.1	P	
F804 *	7/24/03	789150	837820	3	FP-84	119.9	12.2	113.3	12.4	94.5	F Comp	Fails Compaction
F804R	7/28/03	789150	837820	3	FP-84	119.9	12.2	115.4	14.5	96.2	P	Retest
F805	7/24/03	789250	836600	3	FP-84	119.9	12.2	112.2	12.6	93.6	F Comp	Fails Compaction

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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			
F805R	7/28/03	789250	836600	3	FP-84	119.9	12.2	115.2	12.2	96.1	P	Retest
F806	7/24/03	789350	836400	3	FP-84	119.9	12.2	111.5	11.0	93.0	F Comp	Fails Compaction
F806R	7/28/03	789350	836400	3	FP-84	119.9	12.2	115.6	11.7	96.4	P	Retest
F807	7/24/03	789310	836760	3	FP-84	119.9	12.2	115.2	12.5	96.1	P	
F808	7/24/03	789340	836810	3	FP-84	119.9	12.2	115.1	13.2	96.0	P	
F809	7/24/03	789280	836710	3	FP-84	119.9	12.2	114.8	13.5	95.7	P	
F810	7/24/03	789325	836450	3	FP-84	119.9	12.2	115.1	12.7	96.0	P	
F811	7/24/03	789250	836875	3	FP-85	119.4	11.5	115.9	12.9	97.1	P	
F812	7/24/03	789190	836820	3	FP-85	119.4	11.5	118.1	14.5	98.9	P	
F813	7/24/03	789290	836910	3	FP-85	119.4	11.5	118.3	11.1	99.1	P	
F814	* 7/24/03	789420	836350	3	FP-85	119.4	11.5	117.0	13.4	98.0	P	
F815	7/24/03	789400	836450	3	FP-85	119.4	11.5	115.3	11.3	96.6	P	
F816	7/24/03	789480	836360	3	FP-85	119.4	11.5	113.6	10.8	95.1	P	
F817	7/25/03	788550	837610	2	FP-85	119.4	11.5	114.2	11.3	95.6	P	
F818	7/25/03	788600	837800	2	FP-85	119.4	11.5	117.4	10.8	98.3	P	
F819	7/25/03	788553	837852	2	FP-85	119.4	11.5	113.9	13.8	95.4	P	
F820	7/25/03	788750	837925	2	FP-85	119.4	11.5	116.0	12.4	97.2	P	
F821	7/25/03	789352	836550	2	FP-86	116.3	12.7	115.5	14.5	99.3	P	
F822	7/25/03	789450	836500	3	FP-86	116.3	12.7	110.7	16.6	95.2	P	
F823	7/25/03	789350	836550	3	FP-86	116.3	12.7	117.0	13.5	100.6	P	
F824	7/25/03	789375	836625	3	FP-86	116.3	12.7	113.1	12.9	97.2	P	
F825	7/25/03	789350	836500	3	FP-86	116.3	12.7	113.9	13.0	97.9	P	
F826	7/25/03	789290	836590	2	FP-86	116.3	12.7	117.8	11.7	101.3	P	
F827	7/25/03	789375	836370	1	FP-86	116.3	12.7	114.2	14.2	98.2	P	
F828	7/25/03	789300	836550	1	FP-86	116.3	12.7	112.0	10.8	96.3	P	
F829	7/25/03	788700	837900	1	FP-86	116.3	12.7	117.2	10.2	100.8	P	Moisture 0.5 % below requirement; test passed by QC officer.
F830	7/25/03	788650	837746	1	FP-86	116.3	12.7	111.8	12.4	96.1	P	
F831	7/25/03	788720	837730	2	FP-87	117.0	12.9	112.1	12.5	95.8	P	
F832	7/25/03	788840	837830	2	FP-87	117.0	12.9	113.7	12.1	97.2	P	
F833	7/25/03	788920	837770	2	FP-87	117.0	12.9	114.5	12.2	97.9	P	
F834	7/25/03	788980	837600	2	FP-87	117.0	12.9	115.2	14.0	98.5	P	
F835	7/25/03	789280	837480	4	FP-78	116.0	13.2	112.9	12.9	97.3	P	
F836	7/25/03	789200	837480	4	FP-78	116.0	13.2	116.2	15.7	100.2	P	
F837	7/25/03	789280	837340	4	FP-88	117.9	12.6	116.3	11.0	98.6	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F838	7/25/03	789220	837360	4	FP-88	117.9	12.6	118.7	12.8	100.7	P	
F839	7/25/03	789315	837215	4	FP-88	117.9	12.6	119.0	14.3	100.9	P	
F840	* 7/25/03	789260	837190	4	FP-88	117.9	12.6	116.8	16.0	99.1	P	
F841	7/25/03	789360	837025	4	FP-88	117.9	12.6	116.5	10.8	98.8	P	
F842	7/25/03	789295	837010	4	FP-88	117.9	12.6	113.5	9.3	96.3	F Moist	Fails Moisture
F842R	7/25/03	789295	837010	4	FP-88	117.9	12.6	119.3	12.9	101.2	P	Retest
F843	7/25/03	789375	836900	4	FP-88	117.9	12.6	113.8	10.8	96.5	P	
F844	7/25/03	789410	836790	4	FP-88	117.9	12.6	117.5	12.6	99.7	P	
F845	7/25/03	789380	836620	4	FP-88	117.9	12.6	116.7	14.4	99.0	P	
F846	7/25/03	789435	836430	4	FP-88	117.9	12.6	113.7	10.9	96.4	P	
F847	7/28/03	789300	837800	4	FP-87	117.0	12.9	113.4	14.5	96.9	P	
F848	7/28/03	789220	837000	4	FP-87	117.0	12.9	116.3	12.8	99.4	P	
F849	7/28/03	789230	836990	4	FP-87	117.0	12.9	118.1	12.6	100.9	P	
F850	7/28/03	789350	836800	4	FP-87	117.0	12.9	120.6	12.8	103.0	P	
F851	7/28/03	789250	836790	4	FP-87	117.0	12.9	117.4	12.4	100.3	P	
F852	7/28/03	789150	836720	2	FP-87	117.0	12.9	113.3	15.0	96.8	P	
F853	7/28/03	789308	836785	4	FP-89	117.0	12.9	109.3	12.5	93.4	F Comp	Fails Compaction
F853R	8/6/03	789308	836785	4	FP-89	117.0	12.9	113.1	11.3	96.6	P	Retest
F854	7/28/03	789450	836300	4	FP-89	117.0	12.9	117.8	14.4	100.7	P	
F855	7/28/03	789500	836350	4	FP-89	117.0	12.9	114.6	12.0	97.9	P	
F856	7/28/03	789400	836550	4	FP-89	117.0	12.9	121.5	11.9	103.8	P	
F857	7/28/03	788970	837650	3	FP-89	117.0	12.9	116.4	13.6	99.5	P	
F858	7/28/03	788900	837900	3	FP-89	117.0	12.9	119.9	11.5	102.5	P	
F859	7/28/03	789000	837770	3	FP-89	117.0	12.9	115.1	12.2	98.4	P	
F860	* 7/28/03	788830	837740	3	FP-78	116.0	13.2	119.4	13.0	102.9	P	
F861	7/28/03	788260	837790	3	FP-78	116.0	13.2	114.8	15.6	99.0	P	
F862	7/28/03	788280	837880	3	FP-78	116.0	13.2	121.1	11.4	104.4	P	
F863	7/29/03	788672	837916	2	FP-89	117.0	12.9	113.9	16.1	97.4	P	
F864	7/29/03	788560	837780	3	FP-89	117.0	12.9	115.0	13.9	98.3	P	
F865	7/29/03	789200	837800	3	FP-89	117.0	12.9	114.4	10.9	97.8	P	
F866	* 7/29/03	789400	837800	3	FP-90	117.4	12.4	110.9	14.6	94.5	F Comp	Fails Compaction
F866R	7/31/03	789400	837800	3	FP-90	117.4	12.4	113.6	12.7	96.7	P	Retest
F867	7/29/03	789100	837650	3	FP-90	117.4	12.4	112.7	14.0	96.0	P	
F868	7/29/03	789100	837400	4	FP-90	117.4	12.4	113.2	10.8	96.4	P	
F869	7/29/03	789220	837113	4	FP-90	117.4	12.4	109.1	12.9	92.9	F Comp	Fails Compaction

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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		
F869R	7/31/03	789220	837113	4	FP-90	117.4	12.4	114.4	10.5	97.4	P	Retest
F870	* 7/29/03	789100	837170	4	FP-90	117.4	12.4	111.0	12.6	94.5	F Comp	Fails Compaction
F870R	7/31/03	789100	837170	4	FP-90	117.4	12.4	114.7	12.9	97.7		Retest
F871	7/29/03	789150	837200	4	FP-90	117.4	12.4	111.7	12.3	95.1	P	
F872	7/29/03	789200	837075	4	FP-90	117.4	12.4	114.5	14.7	97.5	P	
F873	7/29/03	788850	837800	2	FP-90	117.4	12.4	115.8	10.6	98.6	P	
F874	7/29/03	788650	837800	2	FP-90	117.4	12.4	114.6	14.1	97.6	P	
F875	7/30/03	789150	837150	4	FP-90	117.4	12.4	114.0	12.2	97.1	P	
F876	7/30/03	789100	837100	4	FP-91	117.9	12.9	116.2	14.5	98.6	P	
F877	7/30/03	788700	838000	4	FP-91	117.9	12.9	112.9	14.8	95.7	P	
F878	7/30/03	788900	837900	4	FP-91	117.9	12.9	115.4	13.8	97.9	P	
F879	7/30/03	788900	837700	4	FP-91	117.9	12.9	113.9	15.2	96.6	P	
F880	7/30/03	788800	837765	4	FP-91	117.9	12.9	114.0	12.9	96.7	P	
F881	7/30/03	789150	837050	4	FP-91	117.9	12.9	112.1	12.6	95.1	P	
F882	* 7/30/03	789200	837000	4	FP-91	117.9	12.9	112.6	11.5	95.5	P	
F883	* 7/30/03	789100	836950	4	FP-91	117.9	12.9	111.8	11.7	94.8	F Comp	Fails Compaction
F883R	8/6/03	789100	836950	4	FP-91	117.9	12.9	116.0	13.4	98.4	P	Retest
F884	7/30/03	789175	836900	4	FP-91	117.9	12.9	109.7	13.1	93.0	F Comp	Fails Compaction
F884R	8/6/03	789175	836900	4	FP-91	117.9	12.9	115.0	11.1	97.5	P	Retest
F885	7/31/03	789150	837820	4	FP-91	117.9	12.9	111.1	13.0	94.2	F Comp	Fails Compaction
F885R	8/6/03	789150	837820	4	FP-91	117.9	12.9	114.3	11.2	96.9	P	Retest
F886	7/31/03	789150	837600	4	FP-92	118.6	12.5	120.1	11.3	101.3	P	
F887	7/31/03	789175	837650	4	FP-92	118.6	12.5	117.9	13.1	98.4	P	
F888	7/31/03	789150	837600	4	FP-92	118.6	12.5	118.9	13.1	100.2	P	
F889	7/31/03	789125	837550	4	FP-92	118.6	12.5	118.8	11.7	100.1	P	
F890	7/31/03	789140	837500	4	FP-92	118.6	12.5	116.3	11.3	98.1	P	
F891	7/31/03	789150	837675	4	FP-92	118.6	12.5	114.6	10.9	96.6	P	
F892	7/31/03	789150	836950	4	FP-92	118.6	12.5	116.1	13.4	97.9	P	
F893	* 7/31/03	789200	837100	4	FP-92	118.6	12.5	114.1	14.3	96.2	P	
F894	7/31/03	789300	836450	4	FP-92	118.6	12.5	110.9	15.2	93.5	F Comp	Fails Compaction
F894R	8/1/03	789300	836450	4	FP-92	118.6	12.5	114.0	14.3	96.1	P	Retest
F895	8/1/03	789120	836830	4	FP-92	118.6	12.5	113.0	14.7	95.3	P	
F896	8/1/03	789080	837050	4	FP-93	119.0	11.8	118.5	11.3	99.6	P	
F897	8/1/03	789150	837320	4	FP-93	119.0	11.8	115.4	12.1	97.0	P	
F898	8/1/03	789190	837070	4	FP-93	119.0	11.8	117.4	14.5	98.7	P	
F899	8/1/03	789260	836920	4	FP-93	119.0	11.8	114.7	14.3	96.4	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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		
F900	8/1/03	789110	837820	4	FP-93	119.0	11.8	114.2	13.4	96.0	P	
F901	8/1/03	789080	837650	4	FP-93	119.0	11.8	111.5	15.0	93.7	F Comp	Fails Compaction
F901R	8/1/03	789080	837650	4	FP-93	119.0	11.8	113.2	15.2	95.1	P	Retest
F902	* 8/1/03	789050	837870	4	FP-93	119.0	11.8	118.3	10.4	99.4	P	
F903	8/4/03	789010	837601	4	FP-93	119.0	11.8	115.9	14.4	97.4	P	
F904	8/4/03	789035	837625	4	FP-93	119.0	11.8	119.1	10.9	100.1	P	
F905	8/4/03	789050	837510	4	FP-93	119.0	11.8	113.4	16.3	95.3	P	
F906	8/4/03	789050	837460	4	FP-94	119.3	11.8	112.3	14.8	94.1	F Comp	Fails Compaction
F906R	* 8/6/03	789050	837460	4	FP-94	119.3	11.8	116.7	12.0	97.8	P	Retest
F907	8/4/03	789045	837330	4	FP-94	119.3	11.8	115.5	12.6	96.8	P	
F908	8/5/03	788500	837650	4	FP-94	119.3	11.8	114.7	14.2	96.1	P	
F909	8/5/03	788650	837850	4	FP-94	119.3	11.8	114.1	14.1	95.6	P	
F910	* 8/5/03	788500	837800	4	FP-94	119.3	11.8	114.7	10.7	96.1	P	
F911	8/5/03	788620	837720	4	FP-94	119.3	11.8	115.3	11.8	96.6	P	
F912	8/5/03	789150	836900	4	FP-94	119.3	11.8	118.7	12.1	99.5	P	
F913	8/5/03	789200	836850	4	FP-94	119.3	11.8	116.5	13.6	97.7	P	
F914	8/6/03	789150	836920	4	FP-94	119.3	11.8	113.7	11.0	95.3	P	
F915	8/6/03	789100	836875	4	FP-94	119.3	11.8	116.2	11.5	97.4	P	
F916	8/6/03	789175	836821	4	FP-95	115.7	13.7	110.1	17.2	95.2	P	
F917	8/6/03	789250	836550	4	FP-95	115.7	13.7	112.7	14.6	97.4	P	
F918	8/6/03	789250	836500	4	FP-95	115.7	13.7	111.7	13.4	96.5	P	
F919	8/6/03	789150	837020	4	FP-95	115.7	13.7	114.3	12.1	98.8	P	
F920	8/6/03	789135	837000	4	FP-95	115.7	13.7	116.4	13.1	100.6	P	
F921	8/6/03	789200	836900	4	FP-95	115.7	13.7	119.2	13.2	103.0	P	
F922	8/6/03	789220	836800	4	FP-95	115.7	13.7	114.9	12.7	99.3	P	
F923	* 8/6/03	789285	836650	4	FP-95	115.7	13.7	112.6	13.0	97.3	P	
F-924	6/9/04	789340	838030	FG	FP-96	119.2	11.8	117.8	11.0	98.8	P	
F925	6/10/04	789450	837840	FG	FP-96	119.2	11.8	115.1	12.0	96.6	P	
F926	6/10/04	789445	837030	FG	FP-96	119.2	11.8	118.2	11.9	99.2	P	
F927	6/10/04	789300	837020	FG	FP-96	119.2	11.8	119.4	12.9	100.2	P	
F928	6/10/04	789355	837128	FG	FP-96	119.2	11.8	121.0	13.1	101.5	P	
F929	6/10/04	789220	837275	FG	FP-96	119.2	11.8	113.6	10.4	95.3	P	
F930	6/10/04	789340	837400	FG	FP-96	119.2	11.8	118.1	11.1	99.1	P	
F931	6/10/04	789435	837272	FG	FP-96	119.2	11.8	121.6	11.0	102.0	P	
F932	6/11/04	789680	836770	FG	FP-96	119.2	11.8	116.2	11.6	97.5	P	
F933	6/11/04	789410	836750	FG	FP-96	119.2	11.8	119.6	8.9	100.3	F Moist	Fails Moisture

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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		
F933R	6/14/04	789410	836750	FG	FP-96	119.2	11.8	118.3	10.3	98.6	P	Retest
F934	* 6/11/04	789540	836720	FG	FP-97	120.0	11.2	118.2	10.2	98.5	P	
F935	6/11/04	789670	836630	FG	FP-97	120.0	11.2	118.9	12.0	99.1	P	
F936	* 6/11/04	789510	836580	FG	FP-97	120.0	11.2	113.4	11.5	94.5	F Comp	Fails Compaction
F936R	6/14/04	789510	836580	FG	FP-97	120.0	11.2	119.0	9.2	99.2	P	Retest
F937	6/11/04	789620	836480	FG	FP-97	120.0	11.2	112.0	8.6	93.3	F C & M	Fails Compaction & Moisture
F937R	6/14/04	789620	836480	FG	FP-97	120.0	11.2	117.1	14.6	97.6	P	Retest
F938	6/11/04	789740	836480	FG	FP-97	120.0	11.2	118.0	10.5	98.3	P	
F939	* 6/11/04	789640	836340	FG	FP-97	120.0	11.2	111.1	10.1	92.6	F Comp	Fails Compaction
F939R	6/14/04	789640	836340	FG	FP-97	120.0	11.2	117.3	11.3	97.8	P	Retest
F940	6/14/04	789515	836480	FG	FP-97	120.0	11.2	114.6	14.7	95.5	P	
F941	* 6/15/04	789415	836650	FG	FP-97	120.0	11.2	117.8	13.3	98.2	P	
F942	6/15/04	789350	836710	FG	FP-97	120.0	11.2	117.8	13.4	98.2	P	
F943	6/15/04	789435	836520	FG	FP-97	120.0	11.2	118.2	11.0	98.5	P	
F944	6/15/04	789510	836320	FG	FP-98	121.8	11.1	116.7	12.3	95.8	P	
F945	6/15/04	789420	836425	FG	FP-98	121.8	11.1	116.2	10.4	95.4	P	
F946	6/15/04	789355	836585	FG	FP-98	121.8	11.1	118.0	13.5	96.9	P	
F947	6/15/04	789285	836690	FG	FP-98	121.8	11.1	118.9	10.4	97.6	P	
F948	6/15/04	789290	836475	FG	FP-98	121.8	11.1	123.5	9.9	101.4	P	
F949	6/16/04	789340	836360	FG	FP-98	121.8	11.1	119.2	10.8	97.9	P	
F950	6/16/04	789220	837945	FG	FP-98	121.8	11.1	121.9	12.0	100.1	P	
F951	* 6/16/04	789375	837935	FG	FP-98	121.8	11.1	123.3	10.3	101.2	P	
F952	6/18/04	789270	836660	FG	FP-98	121.8	11.1	118.7	12.1	97.5	P	
F953	6/18/04	789185	836680	FG	FP-98	121.8	11.1	120.6	9.5	99.0	P	
F954	6/18/04	789135	836890	FG	FP-99	121.2	11.6	121.7	10.2	100.4	P	
F955	6/18/04	789065	837055	FG	FP-99	121.2	11.6	117.1	12.7	96.6	P	
F956	6/18/04	789325	836795	FG	FP-99	121.2	11.6	120.9	11.4	99.8	P	
F957	6/18/04	789155	836930	FG	FP-99	121.2	11.6	122.2	10.8	100.8	P	
F958	6/18/04	789115	837110	FG	FP-99	121.2	11.6	122.3	10.7	100.9	P	
F959	6/18/04	789195	837100	FG	FP-99	121.2	11.6	120.2	10.1	99.2	P	
F960	6/18/04	789245	836970	FG	FP-99	121.2	11.6	117.6	9.8	97.0	P	
F961	* 6/21/04	789145	837200	FG	FP-99	121.2	11.6	116.5	12.3	96.1	P	
F962	6/21/04	789120	837470	FG	FP-99	121.2	11.6	117.0	13.2	96.5	P	
F963	6/21/04	789590	837580	FG	FP-99	121.2	11.6	117.6	9.5	97.0	F Moist	Fails Moisture
F963R	6/21/04	789590	837580	FG	FP-100	121.8	11.4	119.4	9.7	98.0	P	Retest
F964	6/21/04	789080	837550	FG	FP-100	121.8	11.4	119.1	12.6	97.8	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture.
 See NOTES and summary statistics at the end of this table.

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			
F965	6/21/04	789085	837495	FG	FP-100	121.8	11.4	122.5	11.9	100.6	P	
F966	6/21/04	789030	837170	FG	FP-100	121.8	11.4	123.3	9.9	101.2	P	
F967	6/21/04	789015	837295	FG	FP-100	121.8	11.4	122.6	12.5	100.7	P	
F968	6/21/04	789010	837400	FG	FP-100	121.8	11.4	119.6	12.0	98.2	P	
F969	6/21/04	789040	837540	FG	FP-100	121.8	11.4	123.1	9.2	101.1	F Moist	Fails Moisture
F969R	6/21/04	789040	837540	FG	FP-100	121.8	11.4	120.8	13.3	99.2	P	Retest
F970	6/21/04	789020	837770	FG	FP-100	121.8	11.4	119.0	11.0	97.7	P	
F971	6/21/04	789095	837080	FG	FP-100	121.8	11.4	122.8	12.2	100.8	P	
F972	6/21/04	789105	837695	FG	FP-100	121.8	11.4	119.4	11.1	98.0	P	
F973	* 6/23/04	789175	836980	FG	FP-100	121.8	11.4	116.8	11.1	95.9	P	
F974	* 6/23/04	789340	836750	FG	FP-101	120.0	11.6	112.1	16.8	93.4	F Comp	Fails Compaction
F974R	6/24/04	789340	836750	FG	FP-101	120.0	11.6	120.7	11.5	100.6	P	Retest
F975	6/28/04	788895	837895	FG	FP-101	120.0	11.6	121.9	10.6	101.6	P	
F976	6/28/04	789050	837975	FG	FP-101	120.0	11.6	121.6	12.9	101.3	P	
F977	6/28/04	788810	837960	FG	FP-101	120.0	11.6	118.7	13.3	98.9	P	
F978	6/29/04	789750	837765	FG	FP-101	120.0	11.6	125.0	11.3	104.2	P	
F979	6/29/04	789390	837525	FG	FP-101	120.0	11.6	117.7	9.8	98.1	P	
F980	6/29/04	789400	837660	FG	FP-101	120.0	11.6	122.2	10.3	101.8	P	
F981	6/29/04	789265	837510	FG	FP-101	120.0	11.6	123.4	9.1	102.8	F Moist	Fails Moisture
F981R	6/29/04	789265	837510	FG	FP-101	120.0	11.6	115.8	12.0	96.5	P	Retest
F982	6/29/04	789215	837605	FG	FP-101	120.0	11.6	116.6	13.5	97.2	P	
F983	6/30/04	789245	837700	FG	FP-101	120.0	11.6	119.3	10.1	99.4	P	
F984	6/30/04	789385	837820	FG	FP-102	119.8	11.9	112.8	9.3	94.0	F C & M	Fails Compaction & Moisture
F984R	6/30/04	789385	837820	FG	FP-102	119.8	11.9	113.9	10.8	95.1	P	Retest
F985	6/30/04	789170	837840	FG	FP-102	119.8	11.9	115.6	12.4	96.5	P	
F986	6/30/04	789475	837800	FG	FP-102	119.8	11.9	118.9	11.4	99.2	P	
F987	6/30/04	788750	837750	FG	FP-102	119.8	11.9	115.8	13.3	96.7	P	
F988	6/30/04	788780	837680	FG	FP-102	119.8	11.9	120.5	10.0	100.6	P	
F989	6/30/04	788670	837680	FG	FP-102	119.8	11.9	116.4	9.9	97.2	P	
F990	6/30/04	788540	837700	FG	FP-102	119.8	11.9	122.5	12.2	102.3	P	
F991	7/1/04	788740	837770	FG	FP-102	119.8	11.9	116.9	15.0	97.6	P	
F992	7/1/04	788905	837790	FG	FP-102	119.8	11.9	119.0	11.0	99.3	P	
F993	* 7/1/04	788935	837660	FG	FP-102	119.8	11.9	116.6	10.9	97.3	P	
F994	7/6/04	788790	837895	FG	FP-103	120.2	11.6	123.2	11.4	102.5	P	
F995	* 7/6/04	788760	837670	FG	FP-103	120.2	11.6	118.4	11.5	98.5	P	
F996	7/6/04	788580	837895	FG	FP-103	120.2	11.6	120.3	14.8	100.1	P	

Table C.2. Field Compaction Test Results for the A-9 Repository Design Enhancement Frost Protection Layer

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; F Moist = Fails Moisture; F C & M = Fails both compaction and moisture. See NOTES and summary statistics at the end of this table.

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			
F997 *	7/6/04	788700	837930	FG	FP-103	120.2	11.6	117.9	10.8	98.1	P	
F998	7/6/04	788740	837850	FG	FP-103	120.2	11.6	119.2	9.8	99.2	P	
F999	7/7/04	788760	838000	FG	FP-103	120.2	11.6	117.9	11.1	98.1	P	
F1000 *	7/7/04	788680	838000	FG	FP-103	120.2	11.6	115.8	10.8	96.3	P	
F1001	7/8/04	788730	838000	FG	FP-103	120.2	11.6	114.5	10.4	95.3	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>	1001	(N reflects passing tests only)	
<i>Total Quantities placed:</i>	484,686	cubic yards (CY)	
<i>Frequency:</i>	1: 484 CY	Meets the required frequency of 1:500 CY.	
<i>average:</i>	115.4	12.6	97.7
<i>standard deviation:</i>	2.7	1.6	2.0
<i>minimum:</i>	108.6	9.2	94.6
<i>maximum:</i>	125.0	19.2	106.2
<i># Failed:</i>	NA	11	54
<i># Retested:</i>	NA	11	52

52 tests failed compaction only; 9 tests failed moisture only, and 2 tests failed both endpoints. Only two of the failed compaction tests were not re-tested (these are not included in the frequencies or summary statistics).

Table C.3. Standard Proctor Test Summary for the A-9 Repository Frost Protection Layer

Date	Laboratory Standard Proctor		
	Proctor ID	Maximum Dry Density (lbs/cu ft)	Optimum Moisture (%)
5/21/01	FP-1	116.5	13.4
5/22/01	FP-2	117.9	12.5
5/23/01	FP-3	119.4	11.8
5/25/01	FP-4	116.4	13.0
5/29/01	FP-5	118.9	12.6
5/30/01	FP-6	118.0	12.4
5/31/01	FP-7	116.4	13.0
6/1/01	FP-8	118.4	12.3
6/6/01	FP-9	118.0	12.3
6/6/01	FP-10	120.4	12.0
6/7/01	FP-11	118.9	12.0
6/15/01	FP-12	119.2	11.5
6/15/01	FP-13	120.0	12.0
6/15/01	FP-14	119.7	12.5
6/18/01	FP-15	118.0	12.3
6/19/01	FP-16	119.8	11.9
6/19/01	FP-17	119.3	11.7
6/20/01	FP-18	117.3	12.6
6/21/01	FP-18D	118.0	13.0
6/22/01	FP-19	117.2	13.3
6/26/01	FP-20	118.5	11.3
6/28/01	FP-21	118.2	12.8
6/29/01	FP-22	118.3	12.2
7/2/01	FP-23	121.2	10.9
7/2/01	FP-24	118.8	12.2
7/3/01	FP-25	119.1	12.4
7/10/01	FP-26	120.5	10.4
7/11/01	FP-27	119.0	11.2
7/12/01	FP-28	117.6	13.2
7/12/01	FP-29	117.2	12.2
7/13/01	FP-30	119.2	12.0
7/16/01	FP-31	118.6	12.2
7/17/01	FP-32	118.5	12.3
7/17/01	FP-33	117.3	12.8
7/17/01	FP-34	117.2	12.6
7/25/01	FP-35	119.3	12.2
7/26/01	FP-36	117.8	12.0
8/8/01	FP-37	118.4	12.2
8/9/01	FP-38	117.2	12.9
8/10/01	FP-39	119.2	12.3
8/10/01	FP-40	117.8	12.3
8/11/01	FP-41	117.3	12.1
8/14/01	FP-42	118.8	11.5
8/14/01	FP-43	119.6	11.8
8/15/01	FP-44	117.3	13.2
8/16/01	FP-45	116.8	13.8
8/17/01	FP-46	118.0	11.9

Table C.3. Standard Proctor Test Summary for the A-9 Repository Frost Protection Layer

Date	Laboratory Standard Proctor		
	Proctor ID	Maximum Dry Density (lbs/cu ft)	Optimum Moisture (%)
8/22/01	FP-47	117.9	12.1
8/22/01	FP-48	117.8	12.5
9/4/01	FP-49	117.5	12.0
9/5/01	FP-50	115.7	12.9
9/7/01	FP-51	115.3	13.7
9/7/01	FP-52	117.0	12.3
9/10/01	FP-53	114.5	14.0
4/30/02	FP-54	115.0	13.2
5/6/02	FP-55	117.3	12.2
5/15/02	FP-56	117.3	12.4
5/21/02	FP-57	119.9	11.8
6/18/02	FP-58	115.4	13.9
7/8/02	FP-59	118.5	11.5
7/9/02	FP-60	114.5	13.8
7/12/02	FP-61	116.9	13.7
7/15/02	FP-62	117.5	12.5
7/16/02	FP-63	119.9	11.9
7/17/02	FP-64	117.5	12.5
8/2/02	FP-65	118.8	11.3
8/5/02	FP-66	114.1	13.9
8/6/02	FP-67	115.9	13.0
8/6/02	FP-68	117.3	12.5
8/8/02	FP-69	117.2	12.6
8/15/02	FP-70	118.0	12.1
8/21/02	FP-71	115.3	13.5
8/21/02	FP-72	115.2	14.0
9/9/02	FP-73	119.2	12.1
6/20/03	FP-74	121.1	11.8
6/23/03	FP-75	118.4	12.8
7/1/03	FP-76	117.4	13.0
7/2/03	FP-77	118.0	12.0
6/30/03	FP-78	116.0	13.2
7/17/03	FP-79	114.8	14.0
7/17/03	FP-80	114.0	13.2
7/22/03	FP-81	119.0	12.0
7/22/03	FP-82	117.0	12.8
7/24/03	FP-83	119.0	12.0
7/24/03	FP-84	119.9	12.2
7/24/03	FP-85	119.4	11.5
7/25/03	FP-86	116.3	12.7
7/25/03	FP-87	117.0	12.9
7/25/03	FP-88	117.9	12.6
7/28/03	FP-89	117.0	12.9
7/29/03	FP-90	117.4	12.4
7/30/03	FP-91	117.9	12.9
7/31/03	FP-92	118.6	12.5
8/1/03	FP-93	119.0	11.8

Table C.3. Standard Proctor Test Summary for the A-9 Repository Frost Protection Layer

Date	Laboratory Standard Proctor		
	Proctor ID	Maximum Dry Density (lbs/cu ft)	Optimum Moisture (%)
8/4/03	FP-94	119.3	11.8
8/6/03	FP-95	115.7	13.7
6/9/04	FP-96	119.2	11.8
6/11/04	FP-97	120.0	11.2
6/15/04	FP-98	121.8	11.1
6/18/04	FP-99	121.2	11.6
6/21/04	FP-100	121.8	11.4
6/23/04	FP-101	120.0	11.6
6/30/04	FP-102	119.8	11.9
7/6/04	FP-103	120.2	11.6

count: 104 104

<i>average:</i>	118.0	12.4
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min: 114.0 10.4

max: 121.8 14.0

standard deviation: 1.7 0.7

Total cubic yards placed: 484,686 (2001-2004)

Proctor Frequency: 1: 4660 CY Meets the required frequency of 1:5000 CY

Table C.4. A-9 Repository Sand-Cone Correlation Documentation: Frost Protection Material

Date	Compaction Test ID	Nuclear Gauge Test		Sand-Cone Compaction Tests		Sand-Cone Correlation Results	
		In-Place Wet Unit Weight (lbs/cu ft)	Moisture Content (%)	In-Place Wet Unit Weight (lbs/cu ft)	Moisture Content (%)	Wet Unit Weight Variation (%)	Moisture Content Variation (%)
5/22/01	F-7	127.2	10.6	138.6	10.0	9.0	-0.6
5/23/01	F-19	128.4	8.4	121.8	7.1	-5.1	-1.3
5/25/01	F-28	131.2	9.8	124.7	8.4	-5.0	-1.4
5/29/01	F-40	128.9	11.0	134.2	8.6	4.1	-2.4
5/30/01	F-52	131.3	13.9	135.4	11.9	3.1	-2.0
5/30/01	F-55	128.4	11.3	129.1	10.5	0.5	-0.8
5/31/01	F-62	130.3	12.0	130.7	10.1	0.3	-1.9
6/1/01	F-69	131.3	12.7	134.1	10.9	2.1	-1.8
6/5/01	F-80	128.3	13.7	129.5	10.8	0.9	-2.9
6/5/01	F-81	127.2	12.4	125.2	10.3	-1.6	-2.1
6/5/01	F-82	125.4	10.4	125.2	10.0	-0.2	-0.4
6/6/01	F-89	133.0	11.8	135.4	10.6	1.8	-1.2
6/7/01	F-91	133.3	11.0	132.6	9.8	-0.5	-1.2
6/7/01	F-95	133.0	14.6	131.0	11.8	-1.5	-2.8
6/7/01	F-97	130.5	13.5	134.3	12.0	2.9	-1.5
6/13/01	F-107	127.5	10.4	119.9	9.5	-6.0	-0.9
6/15/01	F-110	137.0	12.5	136.1	10.5	-0.7	-2.0
6/15/01	F-121	132.2	11.7	130.6	11.9	-1.2	0.2
6/15/01	F-127	129.6	11.9	133.5	10.9	3.0	-1.0
6/15/01	F-130	132.6	13.9	132.2	11.7	-0.3	-2.2
6/18/01	F-135	128.7	11.7	127.2	12.8	-1.2	1.1
6/18/01	F-141	131.5	11.2	136.8	11.4	4.0	0.2
6/19/01	F-145	133.7	13.0	133.0	11.3	-0.5	-1.7
6/19/01	F-165	134.6	14.4	136.9	12.2	1.7	-2.2
6/20/01	F-166	129.7	14.4	132.2	11.5	1.9	-2.9
6/21/01	F-175	132.7	13.1	139.2	6.0	4.9	-7.1
6/21/01	F-179	133.5	12.4	134.3	11.0	0.6	-1.4
6/22/01	F-184	133.8	12.9	137.9	10.9	3.1	-2.0
6/26/01	F-195	128.6	14.2	131.9	12.4	2.6	-1.8
6/28/01	F-201	127.6	10.8	125.9	9.0	-1.3	-1.8
7/1/01	F-216R	128.7	10.3	130.7	9.6	1.6	-0.7
7/2/01	F-230	131.9	10.2	138.7	8.7	5.2	-1.5
7/3/01	F-238	130.5	14.2	131.9	12.6	1.1	-1.6
7/9/01	F-246	129.4	12.4	134.0	11.1	3.6	-1.3
7/10/01	F-249	126.8	11.5	124.5	9.4	-1.8	-2.1
7/10/01	F-255	129.0	10.2	125.1	9.2	-3.0	-1.0
7/11/01	F-264	132.1	11.1	129.4	9.7	-2.0	-1.4
7/12/01	F-272	126.2	12.3	128.2	10.3	1.6	-2.0
7/12/01	F-281	125.2	11.4	124.6	10.1	-0.5	-1.3
7/13/01	F-288	130.8	13.0	132.5	11.9	1.3	-1.1
7/16/01	F-303	134.8	12.7	136.4	11.0	1.2	-1.7
7/17/01	F-317	127.3	11.7	131.7	10.2	3.5	-1.5
7/17/01	F-322	125.0	11.6	131.3	10.8	5.0	-0.8
7/17/01	F-328	130.3	11.6	129.6	11.1	-0.5	-0.5
7/17/01	F-331	129.5	11.1	132.6	10.0	2.4	-1.1
7/25/01	F-339	132.8	11.1	133.1	9.9	0.2	-1.2
7/26/01	F-348	132.6	10.4	131.2	10.0	-1.1	-0.4
8/8/01	F-360	126.4	11.8	131.0	10.1	3.6	-1.7
8/9/01	F-368	129.5	10.7	130.1	10.3	0.5	-0.4
8/9/01	F-378	129.0	10.9	131.5	11.3	1.9	0.4
8/10/01	F-396	127.4	11.2	125.4	9.3	-1.6	-1.9
8/11/01	F-399	127.4	12.2	128.8	13.1	1.1	0.9
8/11/01	F-404	130.9	16.1	133.4	17.6	1.9	1.5
8/14/01	F-416	127.9	11.7	127.1	10.4	-0.6	-1.3
8/14/01	F-417	133.0	12.5	135.8	9.8	2.1	-2.7
8/15/01	F-429	129.4	10.8	132.7	9.5	2.6	-1.3
8/16/01	F-441	130.9	11.9	133.0	12.0	1.6	0.1

Table C.4. A-9 Repository Sand-Cone Correlation Documentation: Frost Protection Material

Date	Compaction Test ID	Nuclear Gauge Test		Sand-Cone Compaction Tests		Sand-Cone Correlation Results	
		In-Place Wet Unit Weight (lbs/cu ft)	Moisture Content (%)	In-Place Wet Unit Weight (lbs/cu ft)	Moisture Content (%)	Wet Unit Weight Variation (%)	Moisture Content Variation (%)
8/17/01	F-445	129.1	13.1	129.7	11.1	0.5	-2.0
8/17/01	F-452	132.0	13.5	132.6	11.8	0.5	-1.7
8/20/01	F-457	129.0	12.6	129.6	11.7	0.5	-0.9
8/22/01	F-461	128.4	14.7	128.9	14.2	0.4	-0.5
9/4/01	F-481	132.4	11.5	129.6	10.2	-2.1	-1.3
9/7/01	F-503	129.2	12.3	129.5	10.4	0.2	-1.9
9/10/01	F-517	132.6	13.8	136.0	14.8	2.6	1.0
4/30/02	F-530	126.2	13.6	132.2	11.5	4.8	-2.1
4/30/02	F-531	125.5	14.1	127.4	12.3	1.5	-1.8
5/6/02	F-538	132.4	13.4	131.9	12.0	-0.4	-1.4
5/15/02	F-543	137.6	10.4	136.8	9.3	-0.6	-1.1
7/8/02	F-577	129.4	14.0	132.4	11.7	2.3	-2.3
7/8/02	F-578	128.3	10.7	124.6	8.9	-2.9	-1.8
7/9/02	F-581	125.3	10.0	127.3	8.6	1.6	-1.4
7/15/02	F-604	129.7	13.7	132.1	12.7	1.9	-1.0
7/16/02	F-613	130.5	11.5	125.9	10.1	-3.5	-1.4
7/30/02	F-630	129.9	11.9	132.4	11.1	1.9	-0.8
8/5/02	F-639	125.4	12.2	126.8	11.1	1.1	-1.1
8/5/02	F-643	126.2	12.2	129.8	9.6	2.9	-2.6
8/6/02	F-647	123.3	11.9	124.3	12.0	0.8	0.1
8/7/02	F-659	131.6	11.5	136.2	9.9	3.5	-1.6
8/8/02	F-669	124.4	11.6	126.1	10.5	1.4	-1.1
8/14/02	F-677	125.0	10.6	127.8	9.3	2.2	-1.3
8/15/02	F-683	126.8	11.3	128.2	9.7	1.1	-1.6
8/21/02	F-696	132.6	16.0	135.9	14.2	2.5	-1.8
6/20/03	F-711R	129.8	8.7	131.6	8.5	1.4	-0.2
6/30/03	F-721	131.7	11.5	133.2	10.0	1.1	-1.5
7/2/03	F-737	129.5	12.7	130.7	11.2	0.9	-1.5
7/2/03	F-741	134.5	12.6	130.9	11.7	-2.7	-0.9
7/17/03	F-756	127.9	12.3	130.4	11.7	2.0	-0.6
7/18/03	F-764	125.6	12.2	128.0	10.0	1.9	-2.2
7/22/03	F-777	132.8	14.1	136.9	12.1	3.1	-2.0
7/23/03	F-787	128.4	14.9	131.4	12.9	2.3	-2.0
7/24/03	F-795	130.4	15.0	131.9	13.1	1.2	-1.9
7/24/03	F-814	134.5	12.4	134.5	11.4	0.0	-1.0
7/25/03	F-829	129.2	10.2	127.4	9.4	-1.4	-0.8
7/25/03	F-841	137.0	14.9	136.9	13.0	-0.1	-1.9
7/28/03	F-860	134.9	13.0	136.2	11.5	1.0	-1.5
7/30/03	F-882	125.6	11.5	127.8	10.5	1.8	-1.0
7/31/03	F-893	130.5	14.3	129.3	14.1	-0.9	-0.2
8/1/03	F-902	130.5	10.4	128.8	9.5	-1.3	-0.9
8/6/03	F-906R	132.0	11.4	133.8	10.4	1.4	-1.0
8/5/03	F-910	126.9	10.7	127.3	10.5	0.3	-0.2
8/6/03	F-923	127.2	13.0	130.4	11.0	2.5	-2.0
6/11/04	F-934	130.3	10.2	133.4	9.3	2.4	-0.9
6/15/04	F-941	133.5	13.3	135.2	11.0	1.3	-2.3
6/16/04	F-951	137.6	10.9	138.6	9.2	0.7	-1.7
6/21/04	F-961	130.8	12.3	130.4	10.3	-0.3	-2.0
6/23/04	F-973	129.8	11.1	128.2	8.9	-1.2	-2.2
7/1/04	F-993	129.3	10.9	129.0	10.1	-0.2	-0.8
7/6/04	F-995	132.0	11.5	130.0	9.5	-1.5	-2.0
7/6/04	F-997	130.6	10.8	130.0	9.4	-0.5	-1.4
7/7/04	F-1000	131.1	11.1	131.5	10.5	0.3	-0.6

average (on absolute value): 1.9 1.4
standard deviation: 1.5 0.8

Table C.5. Soil Classification Test Results for the A-9 Repository Design Enhancement Frost Protection Layer: 2001-2004

See summary at the end of this table.

Date Sampled	Sample ID	PARTICLE SIZE ANALYSIS SIEVE SIZE (% PASSING)												Atterberg Limits		Unified Soil Classification
		6"	3"	1 1/2"	3/4"	3/8"	#4	#8	#16	#30	#50	#100	#200	Liquid Limit	Plastic Index	
														Plan Requirements:		SC and/or SC-SM
05/21/01	F4			-	100	98.8	96.4	91.7	82.1	67.5	52.4	42.1	36.1	39	21	SC
05/22/01	F8			-	100	98.9	96.3	92.2	82.7	68.1	52.7	42.0	36.5	41	23	SC
05/23/01	F12			100	98.7	98.0	95.3	91.1	81.8	67.6	53.2	43.9	37.9	35	18	SC
05/23/01	F16			-	100	99.2	95.7	90.8	79.7	63.1	44.9	33.2	27.7	36	16	SC
05/24/01	F20			-	100	99.0	95.9	91.5	80.6	64.2	45.5	31.9	25.3	32	12	SC
05/24/01	F24			-	-	100.0	97.4	93.0	81.2	60.8	39.0	26.1	20.6	31	9	SC
05/25/01	F28			100	98.3	97.5	95.2	91.2	81.4	65.3	48.5	36.0	27.9	34	12	SC
05/25/01	F32			-	100	99.0	96.9	93.0	83.2	67.6	51.1	38.6	30.8	35	14	SC
05/25/01	F36			-	100	98.5	94.0	88.5	76.8	61.2	46.3	35.9	29.1	33	14	SC
05/29/01	F40			100	99	98.9	94.5	92.3	82.0	64.8	46.2	33.2	26.4	34	14	SC
05/30/01	F44			-	100	99.2	97.1	92.8	82.7	66.1	48.3	35.6	28.0	36	16	SC
05/30/01	F48			-	100	99.5	97.6	93.3	82.1	64.7	47.2	35.1	27.8	33	12	SC
05/30/01	F52			-	100	99.1	97.1	93.8	84.0	65.1	44.0	30.8	24.8	31	10	SC
05/30/01	F56			100	99.2	98.6	95.5	92.1	83.1	67.5	48.8	33.9	25.7	33	11	SC
05/31/01	F58			100	99.6	98.5	96.8	94.0	86.6	72.3	53.1	37.6	29.2	35	14	SC
05/31/01	F60			100	99.3	98.0	95.9	91.2	80.4	64.3	47.7	35.6	28.5	36	16	SC
06/01/01	F64			100	99.3	96.3	91.4	87.0	76.8	61.9	47.2	37.3	31.0	35	16	SC
06/01/01	F68			100	98.9	97.6	93.9	88.5	76.1	57.6	40.5	29.6	23.4	31	11	SC
06/01/01	F70			100	99.1	98.6	96.9	93.8	85.4	69.3	50.4	36.4	28.3	32	12	SC
06/05/01	F74			100	99.8	99.1	98.1	95.3	87.7	72.2	51.9	37.1	28.6	29	9	SC
06/05/01	F78			97.1	95.3	94.8	91.7	87.1	76.9	59.9	40.3	28.1	22.7	-	NP	SM
06/05/01	F82			100	99.8	99.2	98.6	96.1	88.2	72.7	53.7	38.0	30.3	34	14	SC
06/06/01	F86			-	100	99.3	96.9	93.8	85.5	69.9	50.7	35.6	28.1	31	10	SC
06/06/01	F90			100	98.7	97.4	94.2	90.1	79.9	63.1	45.1	32.6	26.0	32	12	SC
06/07/01	F94			100	99.6	99.4	97.2	93.8	84.8	70.2	52.4	38.0	29.1	35	16	SC
06/07/01	F98			100	99.6	98.4	95.4	91.3	81.1	66.0	48.1	34.4	26.8	33	14	SC
06/07/01	F102			100	99.1	98.2	96.6	93.0	83.6	65.5	44.5	30.4	23.1	33	13	SC
06/13/01	F107			100	99.6	99.2	97.5	94.6	86.6	71.6	554.9	42.3	33.7	35	17	SC
06/15/01	F111			100	98.5	98.0	95.9	91.7	81.2	62.1	40.8	28.1	22.0	-	NP	SM
06/15/01	F115			-	-	100.0	98.3	95.6	88.0	72.4	52.1	37.5	29.5	34	15	SC
06/15/01	F119			-	-	100.0	97.7	93.9	84.8	67.2	47.1	33.2	26.0	-	NP	SM
06/15/01	F123			100	99.3	98.7	96.7	92.8	83.5	67.8	50.5	37.4	28.9	36	15	SC
06/15/01	F127			100	98.8	98.4	96.3	93.2	84.9	67.7	45.4	30.2	23.1	33	12	SC
06/15/01	F131			-	-	100.0	97.2	90.8	78.5	58.7	37.3	23.9	17.1	33	13	SC
06/18/01	F135			-	100	99.4	98.0	94.8	86.7	71.1	51.3	35.8	27.7	36	17	SC
06/18/01	F139			100	99.1	98.1	95.3	90.7	79.8	60.4	41.6	30.0	24.1	34	14	SC
06/18/01	F143			100	98.9	97.1	93.6	88.9	79.2	63.4	46.4	34.2	26.7	33	12	SC
06/19/01	F147			100	99.8	99.1	97.2	93.1	83.0	65.3	46.4	33.7	26.5	36	17	SC

Table C.5. Soil Classification Test Results for the A-9 Repository Design Enhancement Frost Protection Layer: 2001-2004

See summary at the end of this table.

Date Sampled	Sample ID	PARTICLE SIZE ANALYSIS SIEVE SIZE (% PASSING)												Atterberg Limits		Unified Soil Classification
		6"	3"	1 1/2"	3/4"	3/8"	#4	#8	#16	#30	#50	#100	#200	Liquid Limit	Plastic Index	
														Plan Requirements:		SC and/or SC-SM
06/19/01	F151			100	98.7	97.4	95.5	91.9	82.4	65.7	46.5	33.4	26.0	35	16	SC
06/19/01	F155			100	99.7	99.1	96.6	92.3	82.6	66.5	49.2	37.2	30.0	33	12	SC
06/19/01	F159			-	100	99.3	95.9	91.7	82.4	66.6	49.3	37.2	29.7	33	13	SC
06/19/01	F163			100	98.7	97.4	94.6	90.4	82.1	67.6	51.0	38.3	30.6	35	16	SC
06/20/01	F167			-	100	99.9	97.2	92.0	80.4	61.9	43.6	32.1	25.5	35	16	SC
06/21/01	F171			100	99.7	99.1	96.4	91.1	80.6	64.9	48.1	35.8	28.6	34	15	SC
06/21/01	F175			-	100	99.8	98.2	95.6	87.3	69.6	49.6	36.0	28.5	35	17	SC
06/21/01	F179			100	98.1	97.8	95.6	92.0	82.8	67.3	50.4	38.4	30.8	35	17	SC
06/22/01	F183			97	96.7	95.6	91.7	86.0	73.2	54.2	38.1	28.8	23.5	6	16	SC
06/22/01	F187			94.7	89.4	87.8	83.7	78.7	67.2	48.5	31.0	20.7	16.0	31	9	SC w/gravel
06/26/01	F191			100	99.3	99.0	97.2	93.9	80.4	51.8	30.5	19.9	14.9	-	NP	SM
06/26/01	F195			95.2	91.1	99.0	85.7	81.4	71.5	54.5	34.3	22.7	17.4	-	NP	SM
06/28/01	F199			100	99.2	98.2	94.4	89.3	74.6	50.6	31.9	20.9	15.5	-	NP	SM
06/28/01	F203			100	98	96.9	94.2	87.9	73.3	52.7	34.3	24.0	18.7	-	NP	SM
06/29/01	F207			100	98	97.5	93.3	88.4	82.4	63.3	41.5	29.1	23.4	-	NP	SM
06/29/01	F211			100	99.6	99.4	97.4	92.6	80.2	53.3	30.3	19.4	14.4	-	NP	SM
06/29/01	F215			-	-	100.0	97.8	94.6	84.4	62.2	38.2	24.7	18.9	-	NP	SM
07/01/01	F219			-	100	99.9	99.2	97.9	90.7	64.7	33.1	21.6	16.5	-	NP	SM
07/02/01	F223			100	99.8	99.7	98.7	96.9	90.5	67.4	38.1	24.2	17.8	-	NP	SM
07/02/01	F227			100	99.5	99.1	98.2	95.6	89.0	72.3	43.9	25.8	19.1	-	NP	SM
07/02/01	F231			100	99.5	99.1	96.2	92.4	82.8	62.4	38.9	24.7	18.1	-	NP	SM
07/03/01	F235			-	-	100.0	98.5	97.2	91.7	72.2	47.6	24.4	28.1	-	NP	SM
07/03/01	F239			97.2	96.2	95.4	91.9	87.4	77.9	62.6	45.3	32.8	25.7	34	14	SC
07/03/01	F243			-	100	99.7	97.1	93.5	86.0	71.6	52.1	37.2	29.5	35	14	SC
07/09/01	F247			100	98	96.4	94.8	89.0	72.9	51.6	31.5	20.1	15.0	-	NP	SM
07/10/01	F251			100	99.3	98.7	97.4	94.9	86.3	68.8	46.4	30.8	23.0	32	11	SC
07/10/01	F255			-	100	99.3	96.0	91.1	79.1	58.2	35.9	24.3	18.7	-	NP	SM
07/10/01	F259			-	100	99.8	98.2	92.9	76.5	51.8	31.9	22.2	17.2	31	10	SC
07/11/01	F263			-	100	99.5	97.5	93.8	81.4	59.9	37.1	24.7	18.9	-	NP	SM
07/11/01	F267			100	98.9	98.5	95.5	91.9	80.5	60.0	39.4	26.0	19.4	-	NP	SM
07/12/01	F271			100	99.8	99.5	95.6	89.6	75.3	53.7	34.6	23.8	18.9	-	NP	SM
07/12/01	F275			100	99.8	99.5	96.5	92.4	81.4	60.1	38.0	26.6	20.3	29	6	SC-SM
07/12/01	F279			-	100	98.1	88.5	74.3	53.6	37.4	24.5	16.5	12.6	-	NP	SM
07/12/01	F283			98.2	97.2	96.3	93.3	88.3	76.5	58.2	40.9	30.9	24.7	31	9	SC
07/13/01	F287			98	97.6	96.8	94.6	91.1	81.7	61.5	37.7	24.4	18.6	-	NP	SM
07/13/01	F291			100	97.1	94.6	91.3	86.1	70.9	49.2	29.0	19.2	14.7	-	NP	SM
07/13/01	F295			100	96.7	95.9	92.2	85.6	68.4	46.8	26.0	19.2	15.1	-	NP	SM
07/16/01	F299			96.8	96.3	94.4	91.6	86.1	71.0	49.0	30.0	20.3	15.8	-	NP	SM

Table C.5. Soil Classification Test Results for the A-9 Repository Design Enhancement Frost Protection Layer: 2001-2004

See summary at the end of this table.

Date Sampled	Sample ID	PARTICLE SIZE ANALYSIS SIEVE SIZE (% PASSING)												Atterberg Limits		Unified Soil Classification
		6"	3"	1 1/2"	3/4"	3/8"	#4	#8	#16	#30	#50	#100	#200	Liquid Limit	Plastic Index	
														Plan Requirements:		SC and/or SC-SM
07/16/01	F303			-	100	99.4	96.1	92.7	82.4	63.0	45.9	34.5	24.5	-	NP	SM
07/16/01	F307			100	99.6	99.5	97.9	94.2	83.3	63.3	41.7	29.3	22.9	-	NP	SM
07/17/01	F311			98.2	94.3	91.7	86.0	80.5	68.9	52.7	38.1	29.3	24.2	34	14	SC
07/17/01	F315			100	97.1	95.7	92.1	86.8	74.6	55.8	38.0	27.8	22.6	32	11	SC
07/17/01	F319			100	98.1	97.0	92.3	86.6	74.3	56.7	40.6	31.3	25.6	33	13	SC
07/17/01	F323			100	97.5	95.4	90.7	83.7	68.1	46.8	29.4	20.0	15.3	-	NP	SM
07/17/01	F327			96.7	96	95.2	92.4	88.2	75.5	54.6	33.3	21.1	15.4	-	NP	SM
07/17/01	F331			100	98.6	97.8	95.6	90.9	79.9	61.5	42.3	31.0	24.7	-	NP	SM
07/25/01	F335			100	97.6	94.2	90.0	83.7	71.5	51.5	31.8	21.9	17.0	-	NP	SM
07/25/01	F339			100	97.2	93.2	92.3	86.8	73.0	51.3	31.9	21.4	16.3	-	NP	SM
07/26/01	F343			97.4	92.8	90.1	86.7	82.3	70.9	53.4	36.5	26.3	21.0	30	11	SC
07/26/01	F347			100	98.5	97.8	96.1	92.0	83.3	68.3	50.0	37.0	29.6	33	13	SC
07/26/01	F351			100	98.9	98.2	95.6	91.1	79.7	60.5	40.6	28.3	22.0	-	NP	SM
08/08/01	F355			-	100	99.4	96.8	93.3	84.5	69.6	53.7	42.7	35.9	36	17	SC
08/08/01	F359			-	100	98.6	96.4	91.7	81.7	65.8	48.8	37.5	30.9	34	14	SC
08/09/01	F363			100	99.3	98.6	96.1	91.4	80.1	60.6	40.8	28.4	22.1	-	NP	SM
08/09/01	F367			100	99.8	99.1	95.7	90.7	78.5	60.0	42.3	30.9	24.6	-	NP	SM
08/09/01	F371			100	97.7	95.6	92.3	86.1	73.5	53.3	34.5	24.5	19.2	-	NP	SM
08/09/01	F374			100	97.6	96.4	93.3	87.9	76.3	56.1	34.7	24.5	19.6	-	NP	SM
08/09/01	F378			100	97.3	96.0	92.7	87.5	75.7	56.9	37.5	26.4	20.6	-	NP	SM
08/10/01	F382			100	99	97.8	95.8	92.4	83.6	68.0	48.9	35.2	28.1	32	14	SC
08/10/01	F386			-	100	99.2	96.9	92.7	83.2	67.0	49.2	36.9	30.5	33	15	SC
08/10/01	F390			100	99.8	99.3	96.3	93.7	85.8	68.2	43.2	29.8	23.9	-	NP	SM
08/10/01	F394			100	99.9	98.4	95.0	89.4	78.4	61.3	45.7	34.0	26.1	-	NP	SM
08/11/01	F397			100	99.5	97.6	94.2	89.1	78.3	62.4	47.1	36.6	29.7	35	16	SC
08/11/01	F400			100	98.6	97.1	95.5	91.1	80.3	63.1	46.6	34.6	28.0	34	14	SC
08/11/01	F404			-	100	99.1	96.7	92.6	82.5	67.3	51.2	40.0	32.8	34	16	SC
08/11/01	F408			100	98.6	97.0	93.0	87.3	74.5	55.6	38.2	27.9	22.6	32	14	SC
08/14/01	F412			-	100	99.1	96.1	91.7	81.2	63.7	44.8	32.9	26.3	33	14	SC
08/14/01	F416			100	97.5	96.8	94.2	90.4	79.6	60.1	39.2	28.2	23.0	32	13	SC
08/14/01	F420			-	100	99.2	95.8	90.8	80.0	63.6	47.4	36.4	29.9	32	14	SC
08/14/01	F424			-	1100	99.3	96.2	92.5	82.9	66.8	49.9	38.0	30.5	34	16	SC
08/15/01	F428			100	99.6	99.1	97.9	93.9	84.0	65.6	45.9	34.3	28.0	32	16	SC
08/15/01	F432			100	99	98.7	97.0	93.1	85.2	71.1	54.2	41.4	34.1	34	17	SC
08/16/01	F436			97.3	97.3	96.7	95.0	92.1	82.8	65.4	46.0	33.6	27.0	33	15	SC
08/16/01	F440			100	99.6	99.3	98.0	95.8	89.1	78.2	65.8	55.1	45.6	41	25	SC
08/16/01	F444			-	100	99.5	98.0	94.5	86.3	69.8	49.6	35.5	28.4	33	13	SC
08/17/01	F448			-	100	99.7	97.5	93.7	84.3	67.7	47.9	34.2	27.7	34	16	SC

Table C.5. Soil Classification Test Results for the A-9 Repository Design Enhancement Frost Protection Layer: 2001-2004

See summary at the end of this table.

Date Sampled	Sample ID	PARTICLE SIZE ANALYSIS												Atterberg Limits		Unified Soil Classification
		SIEVE SIZE (% PASSING)												Liquid Limit	Plastic Index	
		6"	3"	1 1/2"	3/4"	3/8"	#4	#8	#16	#30	#50	#100	#200			
Plan Requirements:														SC and/or SC-SM		
08/17/01	F452			100	98.6	98.0	96.1	92.2	82.2	64.4	45.0	32.9	26.4	3	15	SC
08/20/01	F456			100	98.4	97.3	94.9	90.3	79.8	62.4	43.8	32.1	25.7	32	16	SC
08/22/01	F460			100	99	98.2	96.1	91.4	81.4	63.6	45.5	34.0	28.1	31	13	SC
08/22/01	F464			100	97.2	96.6	95.0	92.1	83.3	66.5	48.6	36.0	29.0	34	17	SC
08/22/01	F468			97	95.3	94.7	93.1	89.0	78.0	57.9	36.1	23.9	18.7	-	NP	SM
08/30/01	F472			100	98.1	96.5	94.0	89.6	76.9	53.8	33.5	21.6	16.5	-	NP	SM
08/31/01	F476			100	99	98.6	96.6	93.5	86.2	72.7	56.0	41.7	32.9	34	17	SC
09/04/01	F480			100	99.7	99.4	98.1	96.3	89.5	75.2	54.6	38.9	30.6	32	15	SC
09/05/01	F484			100	97.1	95.5	92.6	88.2	77.4	59.0	41.2	39.6	22.9	33	15	SC
09/05/01	F488			100	98.9	98.0	96.4	93.7	84.6	64.0	43.0	30.8	24.5	32	13	SC
09/05/01	F492			-	100	99.8	97.8	95.2	88.4	75.7	59.2	44.0	34.2	33	14	SC
09/07/01	F496			-	100	99.3	97.2	93.4	78.4	54.3	33.0	22.6	17.6	-	NP	SM
09/07/01	F500			97.7	97.7	97.0	95.2	88.3	71.6	51.0	32.2	21.9	17.2	-	NP	SM
09/07/01	F504			100	97.9	96.4	91.1	85.3	72.8	52.0	32.5	22.7	18.1	34	13	SC
09/07/01	F508			100	98.3	96.8	94.0	89.0	76.7	57.6	38.7	27.7	22.0	30	11	SC
09/10/01	F512			100	99.1	98.8	96.0	91.8	81.1	58.9	35.6	23.1	17.2	-	NP	SM
09/10/01	F516			100	99.8	99.6	97.9	95.2	87.0	71.6	52.7	37.9	29.3	31	12	SC
09/10/01	F520			100	97.7	97.0	95.4	91.9	82.1	62.5	40.5	27.3	21.0	30	11	SC
09/10/01	F524			100	99.5	99.3	97.1	94.0	86.7	71.1	49.5	34.9	26.2	-	NP	SM
04/30/02	F-528	-	-	100.0	99.7	99.0	97.1	93.5	86.4	72.9	57.0	44.7	35.1	32	13	SC
04/30/02	FP-54	-	-	-	-	100.0	97.0	94.1	84.4	60.7	35.9	22.7	17.2	27	3	SM
04/30/02	FP-55	-	-	100.0	96.7	93.4	91.0	88.0	81.5	70.1	56.0	44.3	35.8	26	11	SC
05/06/02	F-532	-	-	-	100.0	98.3	94.4	91.8	85.6	73.4	58.1	45.7	37.8	32	12	SC
05/06/02	F-536	-	-	100	99.3	98.1	95.2	92.0	84.0	70.5	53.7	40.3	32.0	32	12	SC
05/06/02	F-538	-	100.0	96.9	95	93.3	90.5	87.8	79.9	63.8	41.5	26.4	20.6	28	5	SM
05/06/02	F-542	-	-	-	100.0	96.9	93.8	89.8	80.5	65.0	47.9	36.7	31.9	34	18	SC
05/06/02	FP-56	-	-	-	-	100.0	96.3	91.6	80.6	62.4	43.9	32.9	26.5	19	NP	SM
05/15/02	F-546	-	-	100.0	97.1	94.5	91.3	87.9	78.6	62.1	43.1	30.9	24.5	30	10	SC
05/15/02	F-550	-	100.0	98.3	98	96.4	93.8	90.7	82.2	67.1	49.8	37.6	30.5	32	16	SC
05/16/02	FP-57	-	-	-	-	100.0	97.2	94.0	85.0	68.0	47.8	34.4	26.9	22	NP	SM
05/17/02	F-554	-	-	100	99.8	97.4	94.3	90.0	78.9	60.4	43.0	33.1	27.2	27	9	SC
05/21/02	F-558	-	100	92.1	91.6	90.3	87.9	84.2	73.5	55.6	38.5	29.3	24.9	28	11	SC
05/22/02	F-562	-	-	100.0	93.2	90.4	86.0	81.9	71.5	54.3	36.9	26.2	20.1	31	10	SC
05/22/02	F-562 QC	-	-	-	-	-	-	-	-	-	-	-	-	28	7	SC-SM
06/07/02	FP-58	-	-	-	-	100.0	95.0	93.2	87.0	75.3	59.6	45.6	36.2	27	13	SC
06/13/02	F-566	-	-	100	98.0	94.0	89.4	86.0	76.5	60.2	43.8	31.6	24.6	31	8	SC
06/18/02	F-570	-	-	100	95.6	90.7	85.9	81.8	70.6	52.5	32.2	20.6	15.5	-	NP	
06/14/02	FP-59	-	-	-	-	100.0	97.1	94.2	86.9	72.2	52.0	24.5	26.4	23	NP	SM

Table C.5. Soil Classification Test Results for the A-9 Repository Design Enhancement Frost Protection Layer: 2001-2004

See summary at the end of this table.

Date Sampled	Sample ID	PARTICLE SIZE ANALYSIS SIEVE SIZE (% PASSING)												Atterberg Limits		Unified Soil Classification
		6"	3"	1 1/2"	3/4"	3/8"	#4	#8	#16	#30	#50	#100	#200	Liquid Limit	Plastic Index	
														Plan Requirements:		SC and/or SC-SM
06/18/02	FP-60	-	-	-	-	100.0	97.1	94.5	85.4	68.1	47.9	33.6	26.4	23	4	SC-SM
06/27/02	F-574	-	-	100	99.3	95.9	92.2	88.3	77.2	59.9	42.7	31.9	25.3	30	13	SC
06/28/02	FP-61	-	-	-	-	100.0	98.5	96.1	88.7	76.2	62.5	51.9	43.9	27	12	SC
07/09/02	FP-62	-	-	-	-	100.0	96.4	93.3	85.9	73.8	59.7	48.6	40.5	24	10	SC
07/15/02	FP-63	-	-	-	-	100.0	96.9	93.4	83.8	65.8	45.4	32.5	25.7	21	NP	SM
07/15/02	FP-64	-	-	-	-	100.0	95.2	90.7	79.4	61.4	43.8	32.3	25.1	23	NP	SM
07/17/02	FP-65	-	-	-	-	100.0	97.0	93.8	84.6	68.4	50.3	37.3	29.2	23	NP	SM
07/26/02	FP-66	-	-	-	-	100.0	97.4	93.3	82.9	64.9	44.6	31.7	25.1	20	NP	SM
08/02/02	FP-67	-	-	-	-	100.0	96.3	94.3	89.6	80.6	65.2	50.9	40.0	27	9	SC
08/06/02	FP-68	-	-	-	-	100.0	98.4	96.0	89.9	77.8	59.9	45.3	35.3	32	13	SC
08/06/02	FP-69	-	-	-	-	100.0	98.0	95.4	89.7	79.5	64.3	50.5	39.1	31	12	SC
08/06/02	FP-69 QC	-	-	-	-	100.0	98.5	96.0	91.0	81.1	66.6	54.0	43.8	-	-	-
08/08/02	FP-70	-	-	-	-	100.0	97.1	93.8	86.4	74.0	59.3	48.7	40.5	33	18	SC
08/08/02	FP-70 QC	-	-	-	-	100.0	97.8	94.7	87.8	74.9	59.9	49.4	41.3	34	17	SC
08/08/02	FP-71	-	-	-	-	100.0	98.0	92.3	78.1	57.2	38.0	27.1	20.6	32	12	SC
08/08/02	FP-71 QC	-	-	-	-	100.0	95.4	89.0	75.8	57.5	39.9	29.7	23.0	-	-	-
08/08/02	FP-71 QC	-	-	-	-	100.0	97.1	92.3	81.3	63.1	45.2	34.5	27.6	31	13	SC
08/21/02	FP-72	-	-	-	-	100.0	95.0	89.8	82.6	74.5	64.6	51.5	40.4	33	17	SC
08/21/02	FP-72 QC	-	-	-	-	100.0	97.5	93.0	86.1	77.1	66.9	54.5	45.1	36	19	SC
07/08/02	F-578	-	-	100	97.1	93.1	89.1	85.3	85.7	60.0	43.6	33.0	26.3	30	12	SC
07/09/02	F-582	-	-	100.0	99.1	97.0	94.9	91.4	81.9	65.1	47.7	37.0	31.3	32	17	SC
07/09/02	F-586	-	100.0	98.7	97.9	96.6	95.2	93.1	85.5	71.7	58.3	48.4	41.0	31	13	SC
07/09/02	F-590	-	-	-	100.0	99.5	98.1	94.9	85.8	72.2	60.3	53.0	48.0	33	15	SC
07/12/02	F-594	-	-	-	100.0	99.7	98.9	96.9	89.5	75.8	61.7	53.1	46.2	32	14	SC
07/12/02	F-598	-	-	100	99.5	99.2	97.7	95.2	88.0	75.1	60.5	50.3	43.7	33	15	SC
07/12/02	F-602	-	-	100.0	99.4	96.9	94.2	90.6	81.5	66.3	48.8	36.3	30.6	34	14	SC
07/15/02	F-606	-	-	100	99.0	96.0	90.5	86.0	75.7	59.0	42.5	32.5	28.3	33	15	SC
07/16/02	F-610	-	-	-	-	100.0	99.5	97.6	92.2	83.5	71.4	58.1	47.8	41	21	SC
07/16/02	F-614	-	-	100.0	97.9	96.5	94.5	91.9	84.1	71.0	57.4	47.5	39.5	39	19	SC
07/17/02	F-618	-	100.0	97.8	97.8	97.0	95.5	92.3	83.2	67.8	52.9	42.9	34.5	32	12	SC
07/17/02	F-622	-	-	-	-	100.0	96.9	94.0	85.5	71.4	62.5	47.4	40.0	31	13	SC
07/26/02	F-626	-	-	100.0	99.6	99.2	98.3	94.8	81.0	63.9	52.3	45.5	38.8	33	15	SC
07/30/02	F-630	-	-	-	-	100.0	96.8	92.3	83.9	71.1	56.8	45.6	37.1	35	18	SC
08/02/02	F-634	-	-	-	-	100.0	93.8	89.6	81.3	68.1	52.9	41.8	34.0	35	18	SC
08/05/02	F-638	-	-	-	-	100.0	94.7	90.3	82.4	70.7	56.6	45.7	37.2	30	11	SC
08/05/02	F-642	-	-	-	-	100.0	97.8	93.4	87.0	76.6	65.0	54.8	45.4	35	18	SC
08/06/02	F-646	-	-	100.0	97.7	95.9	94.3	91.7	84.3	71.2	54.3	40.9	31.6	32	13	SC
08/06/02	F-646 QC	-	-	100.0	97.7	95.9	93.9	90.3	83.0	70.1	54.1	41.0	31.3	-	-	-

Table C.5. Soil Classification Test Results for the A-9 Repository Design Enhancement Frost Protection Layer: 2001-2004

See summary at the end of this table.

Date Sampled	Sample ID	PARTICLE SIZE ANALYSIS SIEVE SIZE (% PASSING)												Atterberg Limits		Unified Soil Classification
		6"	3"	1 1/2"	3/4"	3/8"	#4	#8	#16	#30	#50	#100	#200	Liquid Limit	Plastic Index	
Plan Requirements:														SC and/or SC-SM		
08/06/02	F-646 QC	-	-	100.0	98.8	96.8	96.0	93.4	85.9	71.9	55.3	42.3	32.9	30	12	SC
08/06/02	F-650	-	-	100.0	99.2	96.8	95.3	92.5	84.5	69.9	52.9	41.0	33.6	35	19	SC
08/06/02	F-650 QC	-	-	100.0	99.6	98.3	96.7	93.2	84.6	70.5	53.7	42.1	34.7	-	-	-
08/06/02	F-650 QC	-	-	100.0	99.5	98.2	96.3	93.1	85.1	70.1	53.6	41.9	34.4	35	20	SC
08/06/02	F-654	-	-	100.0	95.7	91.2	89.1	86.0	79.5	68.6	55.6	45.0	36.7	32	15	SC
08/06/02	F-654 QC	-	-	100.0	97.6	95.2	90.9	88.1	81.8	71.0	57.5	46.2	38.6	-	-	-
08/06/02	F-654 QC	-	-	100.0	97.7	95.3	93.1	89.5	93.1	71.7	58.2	47.3	39.0	33	16	SC
08/06/02	F-658	-	-	100.0	99.6	98.0	97.0	94.3	87.2	75.4	61.6	48.6	37.2	35	17	SC
08/06/02	F-658 QC	-	-	100.0	99.8	99.0	96.9	93.4	87.1	76.6	63.7	51.2	39.5	-	-	-
08/06/02	F-658 QC	-	-	100.0	99.8	98.7	95.5	92.3	86.2	75.5	62.9	51.0	39.5	36	18	SC
08/08/02	F-662	-	-	100.0	95.8	91.4	89.3	83.9	74.8	59.0	41.5	30.6	24.2	32	NP	SM
08/08/02	F-662 QC	-	-	100.0	97.7	95.3	90.3	86.4	77.4	61.0	42.2	30.6	24.2	-	-	-
08/08/02	F-662 QC	-	-	100.0	97.5	95.2	92.2	87.9	79.0	62.1	43.1	31.4	24.7	32	15	SC
08/08/02	F-666	-	-	100.0	97.7	95.2	94.0	90.6	81.7	68.2	54.3	44.2	36.6	33	17	SC
08/08/02	F-666 QC	-	-	100.0	98.8	97.5	93.5	90.2	82.6	69.6	55.6	45.0	37.0	-	-	-
08/08/02	F-666 QC	-	-	100.0	98.8	97.4	95.8	92.4	84.3	70.6	56.3	45.7	37.7	34	18	SC
08/08/02	F-670	-	-	100.0	99.5	97.5	94.7	89.5	79.7	62.6	43.7	31.7	25.0	31	14	SC
08/08/02	F-670 QC	-	-	100.0	99.5	97.5	94.8	91.4	83.4	67.0	47.7	35.6	19.2	32	15	SC
08/08/02	F-674	-	-	100.0	97.3	95.4	93.6	86.1	79.5	63.4	45.0	32.9	26.3	31	13	SC
08/08/02	F-674 QC	-	-	100.0	97.3	95.4	93.1	89.7	81.9	65.8	46.2	34.0	27.6	32	14	SC
08/15/02	F-678	-	-	100.0	98.2	96.6	94.1	90.3	83.5	72.9	61.2	51.6	43.0	37	20	SC
08/15/02	F-678 QC	-	-	100.0	98.2	96.7	93.3	88.9	80.9	69.6	58.2	48.3	39.4	-	-	-
08/15/02	F-682	-	-	100.0	99.0	97.8	96.6	93.7	87.5	77.4	65.1	55.4	46.5	34	16	SC
08/15/02	F-682 QC	-	-	100.0	99.0	97.7	96.4	94.2	89.0	79.1	66.8	57.3	48.8	36	20	SC
08/15/02	F-686	-	-	-	100.0	97.0	95.0	91.0	82.1	68.5	54.6	43.4	33.2	34	17	SC
08/15/02	F-686 QC	-	-	-	100.0	98.5	95.9	92.1	83.7	70.5	56.8	45.5	35.0	-	-	-
08/15/02	F-686 QC	-	-	-	100.0	98.4	95.9	91.9	83.2	69.3	55.6	44.6	34.4	36	21	SC
08/21/02	F-690	-	-	100.0	98.7	95.4	94.5	92.0	85.9	75.4	62.4	52.0	43.3	35	17	SC
08/21/02	F-690 QC	-	-	100.0	99.3	97.6	95.6	92.0	85.7	75.5	62.8	52.8	44.3	-	-	-
08/21/02	F-690 QC	-	-	100.0	99.2	97.2	95.0	92.1	86.2	75.5	62.7	52.6	43.5	37	20	SC
08/21/02	F-694	-	-	100.0	98.0	97.7	95.9	94.1	90.8	86.5	80.8	73.2	62.6	38	19	CL
08/21/02	F-694 QC	-	-	100.0	98.0	97.7	96.7	95.1	92.5	88.4	82.8	74.7	64.5	40	23	CL
08/21/02	F-698	-	-	-	100.0	99.9	99.2	97.3	94.6	91.3	96.1	75.4	59.8	41	21	CL
08/21/02	F-698 QC	-	-	-	100.0	99.9	98.9	97.6	95.8	93.5	90.2	83.3	71.5	45	27	CL
08/22/02	F-702	-	-	100.0	99.6	98.8	97.9	95.9	90.6	81.7	69.9	57.4	45.8	34	17	SC
08/22/02	F-702 QC	-	-	100.0	99.6	98.8	97.8	95.8	91.2	82.8	72.1	60.5	49.6	37	20	SC
08/22/02	F-706	-	-	100.0	98.5	97.5	96.8	94.9	91.4	86.4	79.2	68.6	55.5	39	22	CL
08/22/02	F-706 QC	-	-	100.0	98.5	97.5	96.1	94.4	91.6	87.4	81.9	73.9	63.3	42	26	CL

Table C.5. Soil Classification Test Results for the A-9 Repository Design Enhancement Frost Protection Layer: 2001-2004

See summary at the end of this table.

Date Sampled	Sample ID	PARTICLE SIZE ANALYSIS SIEVE SIZE (% PASSING)												Atterberg Limits		Unified Soil Classification
		6"	3"	1 1/2"	3/4"	3/8"	#4	#8	#16	#30	#50	#100	#200	Liquid Limit	Plastic Index	
														Plan Requirements:		SC and/or SC-SM
06/19/03	FP-74	-	-	100	96.0	91.5	86.4	79.3	67.6	50.7	35.3	24.2	17.7	30	7	SC-SM
06/19/03	F-710	-	-	100	97.3	96.0	94.6	91.0	82.2	64.4	46.3	33.5	25.8	30	11	SC
06/19/03	F-714	-	-	100	92.3	88.4	93.2	78.0	69.1	52.8	38.6	29.2	22.7	29	9	SC
06/23/03	F-718	-	-	100	93.4	89.5	85.4	81.1	74.8	62.9	52.0	41.9	30.1	31	10	SC
06/23/03	FP-75	-	-	100	99.2	96.5	94.7	89.8	79.8	62.6	45.8	33.7	26.1	30	7	SC-SM
06/30/03	F-722	-	-	100	98.2	97.4	96.4	94.6	90.0	82.4	71.9	58.7	44.0	33	10	SC
06/30/03	F-726	-	-	-	100	99.9	99.3	98.3	95.9	91.1	83.4	71.4	53.0	35	16	CL
06/30/03	FP-78	-	-	100	98.1	96.9	96.8	94.6	88.9	78.1	65.2	54.4	46.2	38	22	SC
07/01/03	F-730	-	-	-	100	99.6	96.8	92.7	85.0	71.2	55.1	41.0	30.8	35	17	SC
07/01/03	F-734	-	-	100	98	97.7	95.7	92.2	82.6	66.6	48.7	33.6	23.6	-	NP	SM
07/01/03	FP-76	-	100	97.3	92.0	87.5	84.4	80.4	71.6	58.0	44.9	32.9	21.7	-	NP	SM
07/02/03	F-738	-	-	100	94.7	93.9	92.4	84.7	79.5	57.4	39.2	28.0	21.1	-	NP	SM
07/02/03	F-742	-	-	100	97.0	95.3	92.7	88.3	78.5	61.6	44.9	33.3	26.3	-	NP	SM
07/02/03	FP-77	-	-	100	94.4	91.2	87.9	82.7	73.8	61.1	48.7	36.7	26.1	35	20	SC
07/17/03	F-746	-	-	100	97.7	95.4	91.7	86.3	75.8	59.7	43.9	33.0	26.7	31	9	SC
07/17/03	F-750	-	-	100	98.8	97.1	95.5	92.5	86.3	75.4	66.8	56.9	41.6	35	15	SC
07/17/03	F-754	-	-	100	99.8	98.3	94.6	90.5	81.2	63.9	44.9	31.7	24.9	-	NP	SM
07/17/03	F-758	-	-	100	99.0	97.8	94.1	90.2	82.1	63.1	44.5	29.2	20.3	-	NP	SM
07/17/03	F-762	-	-	100	99.7	98.4	96.4	93.1	84.2	66.8	45.4	29.9	22.3	-	NP	SM
07/17/03	FP-79	-	-	100	98.1	96.5	94.2	90.2	81.2	58.5	36.6	23.3	16.0	-	NP	SM
07/17/03	FP-80	-	100	99.0	97.4	96.3	94.8	91.3	82.1	60.4	40.3	24.7	16.7	-	NP	SM
07/18/03	F-766	-	-	100	96.5	95.2	93.0	88.2	76.9	57.0	37.0	24.7	18.4	-	NP	SM
07/21/03	F-770	-	-	100	98.9	98.1	95.5	91.5	83.9	67.7	52.3	41.3	33.2	33	15	SC
07/22/03	F-774	-	100	96.5	96.2	94.8	93.3	90.2	83.1	67.8	53.0	42.0	34.0	35	18	SC
07/22/03	F-778	-	-	100	98.0	95.6	92.4	80.7	75.4	58.6	43.1	31.2	22.6	-	NP	SM
07/22/03	FP-81	-	-	100	97.0	93.8	90.2	85.1	74.8	57.9	39.5	26.2	19.6	-	NP	SM
07/23/03	F-782	-	-	100	95.4	93.9	91.0	87.6	81.7	74.2	67.4	56.5	40.5	33	9	SM
07/23/03	F-786	-	-	100	95.1	93.1	90.4	85.3	76.0	57.8	42.9	33.3	24.3	32	10	SC
07/23/03	FP-82	-	100	99.0	98.0	96.2	93.8	89.9	80.7	59.8	40.0	26.5	18.8	-	NP	SM
07/23/03	FP-83	-	100	98.7	94.0	91.3	89.4	85.2	75.6	55.5	38.0	26.3	19.9	-	NP	SM
07/24/03	F-790	-	-	100	97.5	95.3	90.5	85.7	75.3	58.4	41.2	30.4	23.9	31	9	SC
07/24/03	F-794	-	-	100	99.5	98.7	96.1	92.5	83.3	64.7	47.3	33.7	24.4	-	NP	SM
07/24/03	F-798	-	-	100	96.7	94.8	93.0	89.0	80.9	66.2	47.3	31.2	22.1	-	NP	SM
07/24/03	F-802	-	-	100	97.6	96.3	93.6	90.3	82.6	63.9	44.6	30.4	22.1	-	NP	SM
07/24/03	F-806	-	-	100	93.4	89.4	86.7	81.2	69.3	50.8	34.9	24.7	19.0	29	7	SC-SM
07/24/03	F-810	-	-	100	96.8	95.1	93.0	88.5	78.0	56.4	37.4	25.7	19.4	-	NP	SM
07/24/03	F-814	-	-	100	96.7	94.5	92.3	87.3	75.1	54.5	35.3	23.6	18.0	-	NP	SM
07/24/03	FP-84	-	-	100	94.3	92.4	90.5	86.4	76.4	57.9	39.1	26.8	20.2	-	NP	SM

Table C.5. Soil Classification Test Results for the A-9 Repository Design Enhancement Frost Protection Layer: 2001-2004

See summary at the end of this table.

Date Sampled	Sample ID	PARTICLE SIZE ANALYSIS SIEVE SIZE (% PASSING)												Atterberg Limits		Unified Soil Classification
		6"	3"	1 1/2"	3/4"	3/8"	#4	#8	#16	#30	#50	#100	#200	Liquid Limit	Plastic Index	
														Plan Requirements:		SC and/or SC-SM
07/24/03	FP-85	-	-	100	97.9	96.4	91.9	97.1	78.0	60.1	42.2	27.2	19.3	-	NP	SM
07/24/03	FP-86	-	-	100	97.2	95.0	89.0	83.9	73.9	58.3	40.7	25.8	18.0	-	NP	SM
07/25/03	F-818	-	-	100	99.0	97.8	93.5	89.3	80.5	62.7	43.6	29.4	20.8	-	NP	SM
07/25/03	F-822	-	-	100	96.4	94.6	91.7	87.5	77.9	57.3	35.6	20.2	11.8	-	NP	SW-SM
07/25/03	F-826	-	-	100	99.4	98.3	95.8	92.1	83.3	67.4	48.0	33.9	26.8	-	NP	SM
07/25/03	F-830	-	-	100	97.2	96.1	92.7	89.0	79.9	65.4	47.5	32.0	23.2	-	NP	SM
07/25/03	F-834	-	-	100	97.1	95.3	93.5	89.6	79.7	61.3	42.0	26.3	18.3	-	NP	SM
07/25/03	F-838	-	-	100	98.8	98.1	97.2	95.2	90.2	78.8	62.5	46.4	35.3	-	NP	SM
07/25/03	F-842	-	-	-	100	98.5	96.0	92.9	86.7	71.6	54.7	41.8	32.5	-	NP	SM
07/25/03	F-846	-	-	100	97.2	95.1	92.6	89.8	83.5	70.8	54.1	40.3	31.0	-	NP	SM
07/25/03	FP-87	-	100	97.7	92.4	90.7	87.6	80.9	69.0	46.6	28.9	18.7	13.5	-	NP	SM
07/25/03	FP-88	-	100	99.6	99.2	98.8	91.0	84.0	72.5	56.5	41.3	30.4	21.9	-	NP	SM
07/25/03	FP-89	-	100	96.4	90.8	87.7	85.5	82.8	76.5	61.7	47.2	36.5	36.1	29	10	SC
07/28/03	F-850	-	100	99.0	98.5	97.1	94.8	90.7	81.4	59.7	40.5	28.1	21.3	-	NP	SM
07/28/03	F-854	-	-	100	98.4	97.0	92.2	87.1	75.9	57.1	37.6	24.7	18.1	-	NP	SM
07/28/03	F-858	-	-	100	97.2	94.2	90.6	85.7	76.7	57.3	39.3	27.3	20.4	-	NP	SM
07/28/03	F-862	-	-	-	100	99.2	95.8	90.7	83.3	73.8	64.6	57.2	49.7	38	19	SC
07/28/03	FP-90	-	100	98.9	97.2	95.0	88.4	80.9	66.5	44.9	27.6	17.9	13.3	-	NP	SM
07/28/03	FP-91	-	100	98.1	97.5	96.2	92.6	87.9	79.1	60.2	41.8	28.8	21.0	-	NP	SM
07/29/03	F-866	-	-	100	97.1	93.9	90.6	85.2	75.2	55.2	37.1	25.2	18.7	-	NP	SM
07/29/03	F-870	-	100	93.0	91.2	87.1	84.4	79.6	69.8	53.4	35.9	23.6	17.6	-	NP	SM
07/29/03	F-874	-	100	94.2	92.1	88.2	85.8	80.8	70.8	51.4	34.9	24.3	18.3	-	NP	SM
07/30/03	F-878	-	-	100	96.2	93.2	90.0	84.7	73.8	55.9	39.0	27.6	21.2	-	NP	SM
07/30/03	F-882	-	-	100	99.1	98.2	96.1	92.1	83.5	64.2	45.2	30.6	22.0	-	NP	SM
07/30/03	FP-92	100	99.2	98.6	93.6	91.0	85.8	79.6	68.1	50.5	33.3	21.8	15.7	-	NP	SM
07/30/03	FP-93	-	-	100	98.6	97.6	89.4	82.6	73.2	55.8	41.0	30.7	22.9	-	NP	SM
07/31/03	F-886	-	100	98.6	96.9	95.2	92.3	87.5	77.0	58.9	40.9	29.4	23.1	30	8	SC
07/31/03	F-890	-	100	98.9	96.0	93.1	89.6	84.0	71.5	51.5	34.3	24.0	18.6	-	NP	SM
08/01/03	F-898	-	-	100	99.0	97.3	95.4	91.3	83.1	69.2	54.1	40.5	31.3	-	NP	SM
08/01/03	F-902	-	100	95.3	93.0	90.8	88.7	84.1	74.3	53.6	36.6	26.4	20.7	-	NP	SM
08/01/03	FP-94	-	100	98.9	96.9	94.4	90.7	85.4	75.2	58.4	41.7	29.9	22.6	31	9	SC
08/04/03	F-906	-	100	97.3	95.4	93.9	90.2	85.7	77.3	64.8	52.6	37.7	24.8	-	NP	SM
08/04/03	FP-95	-	-	100	99.6	99.0	95.8	91.5	81.3	58.0	37.4	23.1	16.2	-	NP	SM
08/05/03	F-910	-	-	100	96.8	95.6	93.1	89.5	82.1	66.6	51.0	38.2	29.4	-	NP	SM
08/06/03	F-914	-	-	-	100	99.8	97.8	94.6	84.9	63.4	41.5	25.8	18.3	-	NP	SM
08/06/03	F-918	-	-	100	91.1	87.9	85.7	81.9	73.2	53.6	35.9	24.0	17.4	-	NP	SM
08/06/03	F-922	-	100	96.8	94.9	93.5	91.5	88.4	80.4	64.1	44.3	30.0	21.7	-	NP	SM
06/09/04	FP-96	-	100	97.2	95.1	92.5	90.2	86.4	77.9	63.8	49.2	36.5	28.2	30	8	SC

Table C.5. Soil Classification Test Results for the A-9 Repository Design Enhancement Frost Protection Layer: 2001-2004

See summary at the end of this table.

Date Sampled	Sample ID	PARTICLE SIZE ANALYSIS SIEVE SIZE (% PASSING)												Atterberg Limits		Unified Soil Classification
		6"	3"	1 1/2"	3/4"	3/8"	#4	#8	#16	#30	#50	#100	#200	Liquid Limit	Plastic Index	
														Plan Requirements:		SC and/or SC-SM
06/10/04	F-928	-	100	97.6	97.4	96.6	95.4	93.8	90.2	83.8	76.4	66.7	56.5	36	19	SC
06/11/04	F-932	-	-	100	99.2	97.2	95.2	90.7	80.4	63.4	47.3	35.7	28.4	32	15	SC
06/11/04	F-938	-	100	96.9	94.8	93.6	91.3	87.4	79.1	61.0	44.6	33.7	25.8	29	8	SC
06/11/04	FP-97	-	100	97.6	95.1	92.8	89.8	86.1	79.1	63.9	48.9	37.1	28.6	28	10	SC
06/15/04	F-942	-	-	100	98.4	97.1	94.4	91.3	83.7	71.1	57.3	44.2	34.2	32	13	SC
06/15/04	F-948	-	-	100	98.6	97.8	96.7	94.0	86.7	66.4	47.0	33.3	34.9	28	9	SC
06/15/04	FP-98	-	100	95.6	92.6	90.0	86.1	81.3	72.0	52.6	35.7	25.1	18.7	24	5	SC-SM
06/18/04	F-952	-	-	100	99.4	98.2	95.1	89.8	77.5	56.9	38.9	28.4	22.6	29	10	SC
06/18/04	F-958	-	-	100	98.9	97.2	94.3	89.6	80.1	59.9	42.8	32.4	25.4	29	10	SC
06/18/04	FP-99	-	100	97.3	95.8	94.3	92.2	88.6	80.6	61.6	43.5	30.7	22.2	27	4	SM
06/21/04	F-962	-	-	100	99.6	97.8	95.6	91.9	82.2	65.1	47.7	34.8	26.7	30	12	SC
06/21/04	F-968	-	100	89.0	85.9	84.7	83.5	80.1	81.7	55.7	37.6	26.3	20.5	29	11	SC
06/21/04	F-972	-	-	100	96.3	94.7	92.3	88.4	78.3	56.4	37.2	25.8	19.3	27	7	SC-SM
06/21/04	FP-100	-	100	96.3	93.2	91.6	89.0	85.3	76.3	59.4	41.9	29.6	22.5	28	10	SC
06/22/04	FP-101	-	100	98.9	98.0	96.3	93.8	89.0	77.3	57.1	37.5	25.4	19.1	26	6	SC-SM
06/29/04	F-978	-	100	97.5	96.4	95.2	93.3	89.4	79.2	61.1	43.4	32.4	25.9	31	14	SC
06/29/04	F-982	-	-	100	99.0	97.1	95.5	92.2	85.1	69.2	52.7	39.1	28.6	31	13	SC
06/30/04	F-988	-	-	100	99.3	98.4	97.4	94.9	87.3	66.9	47.9	34.7	25.2	29	8	SC
06/30/04	FP-102	-	100	96.9	96.1	95.3	93.9	90.5	82.4	61.8	42.9	30.1	21.8	27	6	SC-SM
07/01/04	F-992	-	-	100	99.7	99.0	98.3	94.7	84.9	65.0	43.5	29.1	22.1	28	8	SC
07/06/04	F-998	-	100	97.3	95.8	95.0	93.6	90.6	82.2	65.8	48.3	33.6	25.4	32	10	SC
07/06/04	FP-103	-	100	99.2	97.8	96.6	93.9	89.5	78.8	59.7	40.8	28.5	21.7	28	9	SC

Unified Soil Classification Summary

Type	Defined	Number (%)	
CL	Lean Clay	4	1.4%
SC	Clayey Sand	171	58%
SC-SM	Clayey/Silty Sand	9	3.1%
SM	Silty Sand	110	37.3%
SW-SM	Well-Graded/Silty Sand	1	0.3%

<i>Total Number of Tests (N):</i>	296	(Total N excludes the 30 QC samples)
<i>Total Quantities placed:</i>	484,686	cubic yards
<i>Testing Frequency:</i>	1: 1637	
<i>count:</i>	196	188 (for LL and PI endpoints)
<i>average:</i>	32	13
<i>standard deviation:</i>	4.6	3.9
<i>minimum:</i>	3	3
<i>maximum:</i>	41	25
<i>Percent Non-Plastic (NP):</i>	--	36% (n=108)