SECTION

APPENDIX F.

GEOSYNTHETIC FIELD TESTING RESULTS

F.1

TERTIARY GEOMEMBRANE

Tertiary Geomembrane Panel Placement Log

ENVIROTECH ENGINEERING & CONSULTING, INC.

Submittal 5-25-1

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Panel Number	Date / Time		Roll Number	Panel Width	Panel Length	Square Footage	Location (see as built for locations)
T-1	6/16/10	7:45	108151764	22	149	3278	Southside of Sump
T-2	6/16/10	8:10	108151764	22	154	3388	North of T-1
T-3	6/16/10	8:30	108151764	22	153	3366	North of T-2
T-4	6/16/10	9:20	108151764	22	79	1738	North of T-3
T-5	6/16/10	9:35	108151758	22	77	1694	North of T-3
T-6	6/16/10	9:48	108151758	22	33	726	NW Coner (N-S)
T-7	6/16/10	10:00	108151758	22	32	704	East of T-6
T-8	6/16/10	10:15	108151758	22	39	858	East of T-7
T-9	6/16/10	10:40	108151758	22	45	990	East of T-8
T-10	6/16/10	11:10	108151758	22	45	990	East of T-9
T-11	6/16/10	12:20	108151758	22	38	836	East of T-10
T-12	6/16/10	12:45	108151758	22	35	770	East of T-11
T-13	6/16/10	12:50	108151758	2	28	56	East of T-12

Te ry Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING, INC.

Submittal 5-25-1

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/16/10 8:45	T1/T2	149	JA	W26	860	4.0	6/16/10	EOS	BOS	DA	22043	30	30	9:57	10:02	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
6/16/10 8:55	T2/T3	153	CN	W44	860	3.0	6/16/10	EOS	BOS	DA	22042	30	30	10:00	10:05	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
6/16/10 9:30	T4/T5	22	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22043	30	30	10:53	10:58	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
6/16/10 9:38	T3/T4	79	CN	W44	860	3.0	6/16/10	EOS	BOS	DA	22042	30	30	10:15	10:20	Pass
Temperature (Outside)			°F	Overlap	6	in	Note: Seams T3/T4 and T3/T5 air test was continuous between panels									
Comments:																
6/16/10 945	T3/T5	77	JA	W26	860	4.0	6/16/10	EOS	BOS	DA	22042	30	30	10:15	10:20	Pass
Temperature (Outside)			°F	Overlap	6	in	Note: Seams T3/T4 and T3/T5 air test was continuous between panels									
Comments:																
6/16/10 10:09	T6/T7	33	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22042	30	30	10:30	10:35	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																

Te ry Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 5-25-1

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/16/10 10:20	T7/T8	32	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22042	30	30	11:20	11:25	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
6/16/10 10:50	T8/T9	39	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22043	30	30	11:15	11:22	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
6/16/10 11:30	T9/T10	39	CN	W44	860	3.0	6/16/10	EOS	BOS+13	DA	22042	30	30	12:13	12:18	Pass
Temperature (Outside)			°F	Overlap	6	in	6/16/10	BOS+13	BOS	DA	22042	30	30	12:31	12:36	Pass
Comments:																
6/16/10 12:30	T10/T11	38	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22042	30	30	12:48	12:53	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
6/16/10 13:00	T11/T12	35	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22042	30	30	13:05	13:10	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
6/16/10 13:30	T12/T13	28	CN	W44	860	3.0	6/16/10	BOS	BOS+18	DA	22042	30	29	13:01	13:26	Pass
Temperature (Outside)			°F	Overlap	6	in	6/16/10	BOS+18	EOS	DA	22043	30	30	13:17	13:22	Pass
Comments:																

Te ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING, INC.

Submittal 5-25-1

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
06/16/10	T4/T6	22	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22043	30	30	14:08	14:13	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
06/16/10	T4/T7	22	CN	W44	860	3.0	6/16/10	BOS	EOS	EY	22042	30	30	14:15	14:20	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
06/16/10	T4/T8	22	CN	W44	860	3.0	6/16/10	BOS	EOS	EY	22043	30	30	14:22	14:27	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
06/16/10	T4/T9	16	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22043	30	30	14:33	14:38	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
06/16/10	T5/T9	6	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22042	30	30	14:40	14:45	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
06/16/10	T5/T10	22	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22043	30	30	14:45	14:50	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																

Tei ..ry Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 5-25-1

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
06/16/10	T5/T11	22	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22042	30	30	14:56	17:01	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
06/16/10	T5/T12	22	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22043	30	30	14:59	15:04	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																
06/16/10	T5/T13	5	CN	W44	860	3.0	6/16/10	BOS	EOS	DA	22042	30	29	15:01	15:06	Pass
Temperature (Outside)			°F	Overlap	6	in										
Comments:																

Te ıry Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING, INC.

Submittal 5-25-1

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp.	Date	Pass/Fail	Retest Pass Date

Codes

Defect Codes:

BO- Burn Out	MD - Manufacturing Damage	IO- Insufficent Overlap	WD- Wind Damage
BS- Boot Skirt	DT #- Destructive Sample	SI- Soil Irregularity	WR- Wrinkle
CO- Change of Overlap	EE- Earthwork Equip. Dam.	SL- Slag on Textured	WS- Welder Restart
CR- Crease	Ext- Extension	T- Panel Intersection	Other-
ID- Installation Damage	PT- Pressure test cut	VL- Vacuum Test Leak	Other-

Repair Type: B- Bead C- Cap EW- Extrusion Weld F-Fusion Weld

* Note -- Repairs were Spark Tested in areas that were inaccessible with the Vacuum Box.

* Note -- Repairs noted with an SR-XXA suffix are located in the same position as the originating repair.

* Note -- If a vacuum test fails in a pin point location, the location is ground and patched with a bead. The bead retest date is given in the Retest Pass Date Column. If a larger section of patch fails vacuum testing, the patch is capped. No large sections of extrusion welds failed vacuum testing during this project.

Seam Codes:

BOS- Beginning of Seam	EOS- End of Seam	MOP - Middle of Panel	TOE - Toe of Slope

T ary Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 5-25-1

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Pass Date
TR-01	6/16/10	CR	T1 SE Corner	Capped by TR-20							
TR-02	6/16/10	DT-01	T1/T2 BOS+75'	Capped by TR-19							
TR-03	6/16/10	DT-02	T2/T3 BOS+120'	P	2x4	EY	48	550/500	6/16/10	Pass	
TR-04	6/16/10	T	T3/T4/T5	P	1x1	EY	48	550/500	6/16/10	Pass	
TR-05	6/16/10	T/PT	T4/T7/T8	P	2x4	EY	48	550/500	6/16/10	Pass	
TR-06	6/16/10	PT	T9/T10 BOS +13'	P	1.5x4	EY	48	550/500	6/16/10	Pass	
TR-07	6/16/10	WS	T12/T13 BOS+18'	P	1x3	EY	48	550/500	6/16/10	Pass	
TR-08	6/16/10	T	T4/T6/T7	Same as TR-10							
TR-09	6/16/10	T	T4/T8/T9	P	2x6	EY	48	550/500	6/16/10	Pass	
TR-10	6/16/10	DT-03	T4/T7 BOS+3'	P	2x8	EY	48	550/500	6/16/10	Pass	
TR-11	6/16/10	DT-04	T1 SE Corner, Taken in TR-01	Capped by TR-20							
TR-12	6/16/10	T/WS	T4/T8/T9	Same Repair as TR-09							
TR-13	6/16/10	T	T4/T5/T9	P	2x5	EY	48	550/500	6/16/10	Pass	
TR-14	6/16/10	T	T5/T9T/10	p	1.5x1.5	EY	48	550/500	6/16/10	Pass	
TR-15	6/16/10	T	T5/T10/T11	P	1.5x1.5	EY	48	550/500	6/16/10	Pass	
TR-16	6/16/10	T	T5/T11/T12	P	1.5x1.5	EY	48	550/500	6/16/10	Pass	
TR-17	6/16/10	WR	Next to T9 - West of Pipes	P	1x1	EY	48	550/500	6/16/10	Pass	
TR-18	6/16/10	T	T5/T12/T13	P	1.5x1.5	EY	48	550/500	6/16/10	Pass	
TR-19	6/17/10	DT-04A	T2/TR-02	P	3x5	EY	48	550/500	6/17/10	Pass	
TR-20	6/17/10	Cap	Cap of patches TR-01 and TR-11	C	3x12	EY	48	550/500	6/17/10	Pass	
Note: Failing destruct DT-04 was bounded by the first weld of the day, TR-01, and passed destruct DT-04A											

Tertiary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
T1/T2	TR-02	6/16/10	JV	129	SE-1	115	SE-1	Pass	178	BRK	Pass
				130	SE-1	107	SE-1	Pass	172	BRK	Pass
Sample Number:		**DT-01**		129	SE-1	116	SE-1	Pass	178	BRK	Pass
Comments:				135	SE-1	108	SE-1	Pass	173	BRK	Pass
				127	SE-1	120	SE-1	Pass	174	BRK	Pass
T2/T3	TR-03	6/16/10	JV	140	SE-1	129	SE-1	Pass	177	BRK	Pass
				120	SE-1	117	SE-1	Pass	174	BRK	Pass
Sample Number:		**DT-02**		138	SE-1	132	SE-1	Pass	180	BRK	Pass
Comments:				134	SE-1	117	SE-1	Pass	176	BRK	Pass
				128	SE-1	121	SE-1	Pass	174	BRK	Pass
T4/T7	TR-10	6/16/10	JV	118	SE-1	133	SE-1	Pass	172	BRK	Pass
				122	SE-1	122	SE-1	Pass	161	BRK	Pass
Sample Number:		**DT-03**		128	SE-1	128	SE-1	Pass	177	BRK	Pass
Comments:				117	SE-1	125	SE-1	Pass	174	BRK	Pass
				120	SE-1	116	SE-1	Pass	176	BRK	Pass
T1/TR-01	TR-11	6/16/10	JV	151	SE-3			Pass	172	BRK	Pass
				134	SE-3			Pass	163	BRK	Pass
Sample Number:		**DT-04**		68	SE-3			Fail	168	BRK	Pass
Comments: Extrusion Weld. Archive was				123	SE-3			Pass	167	BRK	Pass
destroyed for retest that also failed.				144	SE-3			Pass	166	BRK	Pass
TR-02/T1	TR-19	6/16/10	JV	145	SE-3			Pass	185	BRK	Pass
				139	SE-3			Pass	176	BRK	Pass
Sample Number:		**DT-04A**		144	SE-3			Pass	184	BRK	Pass
Comments:				149	SE-3			Pass	175	BRK	Pass
				143	SE-3			Pass	183	BRK	Pass

Codes
AD: Adhesion faliure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

F.2

SECONDARY GEOMEMBRANE

F.2.1

SECONDARY GEOMEMBRANE PANEL PLACEMENT LOG

Secondary Geomembrane Panel Placement Log

Submittal 5-25-2

ENVIROTECH ENGINEERING & CONSULTING INC

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Panel Number	Date / Time		Roll Number	Panel Width	Panel Length	Square Footage	Location (see as built for locations)
S-01	6/10/10	8:00	102153731	22	530	11660	S. Berm/Floor West
S-02	6/10/10	8:25	102153675	22	530	11660	S. Berm/Floor West
S-03	6/10/10	9:50	102153718	22	525	11550	S. Berm/Floor West
S-04	6/10/10	12:40	102153737	22	525	11550	S. Berm/Floor West
S-05	6/10/10	13:15	102153735	22	525	11550	S. Berm/Floor West
S-06	6/11/10	12:45	102153730	22	525	11550	S. Berm/Floor West
S-07	6/11/10	13:47	102153739	22	525	11550	S. Berm/Floor West
S-08	6/11/10	14:45	102153736	22	260	5720	S. Berm West
S-08A	6/11/10	14:45	102153736	22	265	5830	S. Floor West
S-09	6/11/10	15:15	102153732	22	260	5720	S. Berm West
S-09A	6/11/10	15:15	102153732	22	265	5830	S. Floor West
S-10	6/14/10	11:25	102153698	22	260	5720	S. Berm West
S-10A	6/14/10	11:25	102153698	22	265	5830	S. Floor West
S-11	6/14/10	11:50	102153714	22	260	5720	S. Berm West
S-11A	6/14/10	11:50	102153714	22	265	5830	S. Floor West
S-12	6/14/10	13:00	102153685	22	525	11550	S. Berm/Floor
S-13	6/14/10	13:50	102153687	22	525	11550	S. Berm/Floor
S-14	6/14/10	14:25	102153680	22	525	11550	S. Berm/Floor East
S-15	6/14/10	15:00	102153723	22	525	11550	S. Berm/Floor East
S-16	6/15/10	6:40	102153682	22	525	11550	S. Berm/Floor East
S-17	6/15/10	7:15	102153716	22	525	11550	S. Berm/Floor East
S-18	6/15/10	11:10	102153701	22	525	11550	S. Berm/Floor East
S-19	6/15/10	11:30	102153717	22	525	11550	S. Berm/Floor East
S-20	6/15/10	12:10	102153715	22	525	11550	S. Berm/Floor East
S-21	6/15/10	13:00	102153711	22	525	11550	S. Berm/Floor East
S-22	6/15/10	13:45	102153728	22	525	11550	S. Berm/Floor East

Secondary Geomembrane Panel Placement Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Panel Number	Date / Time		Roll Number	Panel Width	Panel Length	Square Footage	Location (see as built for locations)
S-23	6/17/10	7:00	102153816	22	489	10758	Cell Floor
S-24	6/17/10	7:20	102153816	22	43	946	Cell Floor
S-25	6/17/10	7:30	102153814	22	441	9702	Cell Floor
S-26	6/17/10	15:05	102153674	22	487	10714	Cell Floor
S-27	6/17/10	15:20	102153797	22	487	10714	Cell Floor
S-28	6/18/10	7:00	102153820	22	487	10714	Cell Floor
S-29	6/18/10	7:15	102153795	22	487	10714	Cell Floor
S-30	6/18/10	8:45	102153753	22	480	10560	Cell Floor
S-31	6/18/10	9:10	102153745	22	480	10560	Cell Floor
S-32	6/18/10	10:07	102153822	22	480	10560	Cell Floor
S-33	6/18/10	10:40	102153768	22	480	10560	Cell Floor
S-34	6/18/10	12:20	102153787	22	480	10560	Cell Floor
S-35	6/18/10	12:30	102153761	22	480	10560	Cell Floor
S-36	6/22/10	7:00	108151894	22	480	10560	Cell Floor
S-37	6/22/10	7:30	102153829	22	480	10560	Cell Floor
S-38	6/22/10	8:10	102153760	22	485	10670	Cell Floor
S-39	6/22/10	9:05	102153783	22	485	10670	Cell Floor
S-40	6/22/10	11:15	102153784	22	485	10670	Cell Floor
S-41	6/22/10	11:40	102153709	22	485	10670	Cell Floor
S-42	6/22/10	12:15	102153712	22	485	10670	Cell Floor
S-43	6/28/10	14:00	108151788	22	485	10670	N. Berm/Floor West
S-44	6/28/10	13:00	108151791	22	525	11550	N. Berm/Floor West
S-45	6/29/10	7:00	108151790	22	525	11550	N. Berm/Floor West
S-46	6/29/10	7:30	108151783	22	525	11550	N. Berm/Floor West
S-47	6/29/10	8:05	108151825	22	525	11550	N. Berm/Floor West
S-48	6/29/10	9:35	102153791	11	50	550	N. Berm/Floor West

Secondary Geomembrane Panel Placement Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Panel Number	Date / Time		Roll Number	Panel Width	Panel Length	Square Footage	Location (see as built for locations)
S-49	6/29/10	9:40	102153791	11	50	550	N. Berm/Floor West
S-50	6/29/10	9:50	102153791	22	378	8316	N. Berm/Floor West
S-51	7/13/10	12:50	108151792	22	490	10780	N. Berm/Floor West
S-52	7/13/10	13:10	108151785	22	490	10780	N. Berm/Floor West
S-53	7/13/10	13:35	108151800	22	510	11220	N. Berm/Floor West
S-54	7/13/10	15:30	108151819	22	510	11220	N. Berm/Floor West
S-55	7/14/10	8:30	108151925	13	515	6695	N. Berm/Floor
S-56	7/14/10	9:30	108151940	22	515	11330	N. Berm/Floor
S-57	7/14/10	10:15	108151888	22	515	11330	N. Berm/Floor
S-58	7/26/10	10:20	108151929	22	532	11704	N. Berm/Floor East
S-59	7/26/10	10:45	108151927	22	532	11704	N. Berm/Floor East
S-60	7/29/10	12:00	108151891	22	528	11616	N. Berm/Floor East
S-61	7/29/10	13:00	108151884	22	528	11616	N. Berm/Floor East
S-62	7/29/10	14:15	108151916	22	528	11616	N. Berm/Floor East
S-63	7/30/10	12:00	108151774	22	530	11660	N. Berm/Floor East
S-64	7/30/10	12:25	108151765	22	530	11660	N. Berm/Floor East
S-65	7/30/10	12:45	108151899	22	530	11660	N. Berm/Floor East
S-66	7/30/10	15:20	108151889	22	530	11660	N. Berm/Floor East
S-64A	8/2/10	10:00	108151765	22	3	66	N. Berm/Floor East
S-67	8/7/10	9:00	108151831	22	81	1782	Sump Panels
S-68	8/7/10	9:10	108151831	22	87	1914	Sump Panels
S-69	8/7/10	9:15	108151831	15	31	465	Sump Panels
S-70	8/7/10	9:20	108151831	22	13	286	Sump Panels
S-71	8/7/10	9:30	108151831	22	87	1914	Sump Panels
S-72	8/7/10	9:40	108151831	22	87	1914	Sump Panels
S-55A	8/7/10	12:00	108151831	2	47	94	Sump Panels

Secondary Geomembrane Panel Placement Log

Submittal 5-25-2

ENVIROTECH ENGINEERING & CONSULTING INC

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Panel Number	Date / Time		Roll Number	Panel Width	Panel Length	Square Footage	Location (see as built for locations)
S-73	8/10/10	8:00	108151925	4	150	600	Patch - E. of Sump
S-74	8/10/10	8:30	108151925	5	57	285	Patch - E. of Sump
S-75	8/10/10	9:30	108151925	4	27	108	Patch - E. of Sump
S-76	8/10/10	10:50	108151838	22	530	11660	N. Berm/Floor East
S-77	8/10/10	12:15	108151861	22	530	11660	N. Berm/Floor East
S-78							Replaced Panels South of the Cell 9 Sump comprised of S-55, S-56, S-57, S-58, and S59
						733697	

Note: Panels S-8, S-9, S-10 and S-11 were cut on June 28, 2010 to remove a wrinkle, at the toe of the south slope, creating panels S-8A, S-9A S-10A and S-11A.

F.2.2

SECONDARY GEOMEMBRANE SEAM TRACKING LOG

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/10/10 9:38	S1/S2	530	JA	W43	860	4	6/11/10	BOS	EOS	DA	22042	30	30	7:50	7:55	Pass
Temperature (Outside)		65	°F	Overlap	6	in										
Comments:																
6/10/10 10:47	S2/S3	530	CN	W44	860	4		BOS	BOS+2	Patched with SR-009						
Temperature (Outside)		65	°F	Overlap	6	in	6/11/10	BOS+2	EOS	DA	22043	30	30	8:25	8:30	Pass
Comments:																
6/10/10 13:14	S3/S4	310	JA	W43	860	4	6/11/10	BOS	BOS+310	DA	22042	30	30	8:07	8:12	Pass
Temperature (Outside)		75	°F	Overlap	6	in										
Comments:	Weld halted at BOS +310															
6/11/10 8:34	S3/S4	210	JA	W26	860	4	6/11/10	BOS+310	EOS	DA	22042	30	30	9:18	9:23	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:	Weld restarted at BOS+310															
6/10/10 13:40	S4/S5	270	CN	W44	860	4	6/11/10	BOS	BOS+270	DA	22043	30	30	8:50	8:55	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:	Weld halted at BOS+270															
6/11/10 8:25	S4/S5	240	CN	W44	860	4	6/11/10	BOS+270	EOS	DA	22043	30	30	9:30	9:35	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:	Weld restarted at BOS+270															

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/11/10 10:30	Tie-in/S1	225	JA	W26	860	3.5	6/11/10	BOS	BOS+225	DA	22042	30	30	12:00	12:05	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/11/10 14:45	Tie-in/S1	40	EY	G48	550	500	6/25/10	BOS+225	BOS+265			Vacuum Box Passed				Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:	Extrusion Weld															
6/11/10 14:00	Tie-in/S1	80	JA	W26	860	3.5	6/16/10	BOS+265	BOS+320	DA	22042	30	30	7:58	8:03	Pass
Temperature (Outside)		80	°F	Overlap	6	in	6/16/10	BOS+320	BOS+345	DA	22043	30	30	8:05	8:10	Pass
Comments:																
6/11/10 13:24	Tie-in/S1	175	JA	W26	860	3.5	6/16/10	BOS+345	BOS+450	DA	22043	30	30	8:57	9:02	Pass
Temperature (Outside)		80	°F	Overlap	6	in	6/16/10	BOS+450	EOS	DA	22042	30	30	8:50	8:55	Pass
Comments:																
6/11/10 12:45	S5/S6	520	CN	W44	860	4	6/14/10	BOS	BOS+350	EY	22043	30	30	15:25	15:31	Pass
Temperature (Outside)		-	°F	Overlap	6	in	6/14/10	BOS+350	BOS+425	EY	22043	30	30	16:15	16:29	Pass
Comments:							6/14/10	BOS+425	EOS	EY	22043	30	30	16:30	16:35	Pass
6/11/10 13:47	S6/S7	530	DA	W44	850	4	6/14/10	BOS	EOS	EY	22042	30	30	15:35	15:40	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Loɣ

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/11/10 14:34	S7/S8	520	JA	W26	860	3.5	6/14/10	BOS	EOS	EY	22043	30	30	15:45	15:50	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/11/10 14:40	S8/S9	45	CN	W44	860	4	6/15/10	BOS	EOS	RG	22042	30	30	9:00	9:05	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/14/10 14:49	S9/S10	520	JA	W26	860	4	6/15/10	BOS	EOS	RG	22043	30	30	9:08	9:13	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/14/10 14:51	S10/S11	520	CN	W44	860	4	6/15/10	BOS	EOS	DA	22043	30	29	15:05	15:10	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/14/10 15:00	S11/S12	520	DA	W24	850	4	6/15/10	BOS	BOS+263	DA	22042	31	31	15:16	15:21	Pass
Temperature (Outside)		-	°F	Overlap	5	in	6/17/10	BOS+263	EOS	DA	22042	30	30	7:32	7:37	Pass
Comments:																
6/14/10 15:00	S12/S13	520	JA	W26	860	4	6/15/10	BOS	EOS	DA	22042	31	31	16:15	16:20	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																

Se dary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/14/10 15:03	S13/S14	520	CN	W44	860	4	6/15/10	BOS	EOS	DA	22043	31	30	16:22	16:27	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/14/10	S14/S15	520	DA	W24	850	4	6/16/10	BOS	EOS	DA	22043	30	29	7:25	7:30	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/15/10 8:16	S15/S16	520	JA	W26	860	4	6/17/10	BOS	EOS	DA	22042	30	30	7:30	7:35	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/15/10 8:17	S16/S17	520	CN	W44	860	4	6/17/10	BOS	EOS	DA	22043	30	30	8:10	8:15	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
06/15/10	S17/S18	520	JA	W26	860	4	6/17/10	BOS	EOS	DA	22042	30	29	8:11	8:16	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
06/15/10	S18/S19	280	CN	W44	860	4	6/17/10	BOS	BOS+280	DA	22043	30	30	10:36	10:41	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:	Two welders on panel - see seam tracking below															

Se dary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/15/10	S18/S19	240	DA	W24	850	4	6/17/10	BOS+280	EOS	DA	22042	30	30	15:53	15:58	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments: Two welders on panel - see seam tracking above																
6/15/10	S19/S20	525	CN	W44	860	4	6/17/10	BOS	EOS	DA	22042	30	30	10:35	10:40	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/15/10	S20/S21	525	JA	W26	860	4	6/17/10	BOS	EOS	DA	22043	30	30	10:55	11:00	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/15/10	S21/S22	261	CN	W44	860	4	6/17/10	BOS	BOS+261	DA	22042	31	31	11:55	12:00	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments: Two welders on panel - see seam tracking below																
6/15/10	S21/S22	264	JA	W26	860	4	6/17/10	BOS+261	EOS	DA	22042	30	29	11:00	11:05	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments: Two welders on panel - see seam tracking above																
6/17/10 8:27	S23/S1	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	9:52	9:57	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/17/10 10:15	S23/S2	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	10:02	10:07	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10 10:20	S23/S3	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	10:14	10:19	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10 10:25	S23/S4	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	10:26	10:31	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S5	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	10:42	10:47	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S6	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	10:55	11:00	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S7	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	11:07	11:12	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Loɣ

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/17/10	S23/S8A	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	11:14	11:19	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S9A	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	11:23	11:28	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S10A	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	11:29	11:34	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S11A	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22041	30	30	11:33	11:38	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S12	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22041	30	30	12:28	12:33	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S13	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	12:28	12:33	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/17/10	S23/S14	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22041	30	30	12:36	12:41	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S15	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	12:38	12:43	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S16	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	12:48	12:53	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S17	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22041	30	30	12:48	12:53	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S18	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	12:48	12:53	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S19	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22041	30	30	12:55	13:00	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Loɣ

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/17/10	S23/S20	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	12:57	13:04	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S21	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22041	30	30	13:09	13:14	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S22	22	CN	W44	860	3	6/21/10	BOS	EOS	CN	22043	30	30	13:16	13:21	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10 10:17	S24/S25	22	JA	W26	860	4	6/21/10	BOS	EOS	CN	22041	30	30	15:36	15:41	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S24	43	JA	W26	860	4	6/21/10	BOS	EOS	CN	22041	30	29	14:23	14:28	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S23/S25	441	JA	W26	860	4	6/18/10	BOS	EOS	CN	22043	30	29	15:05	15:10	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																

Se dary Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/17/10	S24/S26	43	JA	W26	860	4	6/21/10	BOS	EOS	CN	22041	30	29	14:44	14:49	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S25/S26	441	JA	W26	860	4	6/18/10	BOS	EOS	CN	22042	30	29	15:07	15:12	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/17/10	S26/S27	487	CN	W44	860	3.5	6/21/10	BOS	EOS	CN	22041	30	30	13:26	13:31	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/18/10	S27/S28	487	CN	W44	860	4	6/21/10	BOS	EOS	CN	22043	30	29	13:27	13:32	Pass
Temperature (Outside)		-	°F	Overlap	5	in										
Comments:																
6/18/10	S28/S29	480	JA	W26	860	4	6/21/10	BOS	EOS	CN	22043	30	30	13:35	13:40	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S29/S30	480	DA	W24	850	4	6/21/10	BOS	EOS	CN	22041	30	30	13:39	13:44	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/18/10 9:27	S30/S31	480	CN	W44	860	4	6/21/10	BOS	EOS	CN	22043	30	30	13:45	13:50	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10 10:14	S31/S32	480	JA	W26	860	4	6/21/10	BOS	EOS	CN	22041	30	30	14:02	14:07	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S32/S33	480	DA	W24	850	4	6/21/10	BOS	EOS	CN	22043	30	30	14:06	14:11	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10 12:42	S33/S34	480	CN	W44	860	4	6/21/10	BOS	EOS	CN	22041	30	30	14:11	14:16	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S34/S35	22	JA	W26	860	4	6/21/10	BOS	EOS	CN	22043	30	29	14:23	14:28	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S23/Tie-in	22	DA	W24	850	3.5		BOS	BOS+10	Patched with SR-111						
Temperature (Outside)		-	°F	Overlap	6	in	6/21/10	BOS+10	EOS	CN	22043	30	30	15:05	15:10	Pass
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/18/10	S24/Tie-in	22	DA	W24	850	3.5	6/21/10	BOS	EOS	CN	22043	30	30	15:13	15:18	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S26/Tie-in	22	CN	W44	860	3	6/22/10	BOS	EOS	DA	22043	30	30	7:05	7:10	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S27/Tie-in	22	CN	W44	860	3	6/22/10	BOS	EOS	DA	22043	30	30	7:11	7:16	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S28/Tie-in	22	CN	W44	860	3	6/22/10	BOS	EOS	DA	22043	30	30	7:50	7:55	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S29/Tie-in	22	DA	W24	850	3.5	6/22/10	BOS	BOS+10	DA	22041	30	30	7:45	7:50	Pass
Temperature (Outside)		-	°F	Overlap	6	in	6/22/10	BOS+10	EOS	DA	22041	30	30	8:02	8:07	Pass
Comments:																
6/18/10	S30/Tie-in	22	DA	W24	850	3.5	6/22/10	BOS	EOS	DA	22043	30	30	8:05	8:10	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/18/10	S31/Tie-in	22	DA	W24	850	3.5	6/22/10	BOS	EOS	DA	22043	30	30	8:22	8:27	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S32/Tie-in	22	DA	W24	850	3.5	6/22/10	BOS	EOS	DA	22041	30	30	8:24	8:29	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S33/Tie-in	22	DA	W24	850	3.5	6/22/10	BOS	EOS	DA	22041	30	30	8:43	8:48	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S34/Tie-in	22	DA	W24	850	3.5	6/22/10	BOS	EOS	DA	22043	30	30	8:35	8:40	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/18/10	S35/Tie-in	22	DA	W24	850	3.5	6/23/10	BOS	EOS	DA	22043	30	30	8:00	8:05	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10	S35/S36	480	JA	W26	860	4	6/22/10	BOS	EOS	DA	22041	30	30	12:23	12:28	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																

Se dary Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/22/10	S36/S37	485	CN	W44	860	4	6/22/10	BOS	EOS	DA	22043	30	30	12:24	12:29	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10 9:34	S37/S38	485	JA	W26	860	4	6/22/10	BOS	EOS	DA	22041	30	30	12:48	12:53	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10	S38/S39	485	CN	W44	860	4	6/22/10	BOS	EOS	DA	22043	30	30	12:50	12:55	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10	S39/S40	485	JA	W26	860	4	6/22/10	BOS	EOS	DA	22041	30	30	12:28	12:33	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10	S40/S41	485	CN	W44	860	4	6/22/10	BOS	EOS	DA	22043	30	30	12:31	12:36	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10	S41/S42	485	JA	W26	860	4	6/22/10	BOS	EOS	DA	22043	30	30	14:52	14:57	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Loɣ

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/22/10	S36/Tie-in	22	CN	W44	860	3	6/23/10	BOS	EOS	DA	22041	30	30	8:02	8:07	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10	S37/Tie-in	22	CN	W44	860	3	6/23/10	BOS	EOS	DA	22041	30	30	8:31	8:36	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10	S38/Tie-in	22	CN	W44	860	3	6/23/10	BOS	EOS	DA	22043	30	30	8:25	8:30	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10	S39/Tie-in	22	CN	W44	860	3	6/23/10	BOS	EOS	DA	22043	30	30	8:35	8:40	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/22/10	S40/Tie-in	22	CN	W44	860	3	6/22/10	BOS	BOS+11	DA	22041	30	30	16:18	16:23	Pass
Temperature (Outside)		-	°F	Overlap	6	in	6/22/10	BOS+11	EOS	DA	22043	30	29	16:19	16:24	Pass
Comments:																
6/22/10	S41/Tie-in	22	CN	W44	860	3	6/22/10	BOS	EOS	DA	22041	30	30	16:09	16:14	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																

Secondary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/22/10	S42/Tie-in	22	CN	W44	860	3	6/22/10	BOS	EOS	DA	22043	30	30	16:07	16:12	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/28/10	S8/S8A	22	CN	W44	860	3	6/28/10	BOS	EOS	CN	22043	30	30	10:00	10:05	Pass
Temperature (Outside)		83	°F	Overlap	6	in										
Comments:	Wrinkle cut out and fusion welded between SR-152 to SR-153															
6/28/10	S9/S9A	22	CN	W44	860	3	6/28/10	BOS	EOS	CN	22041	30	30	10:02	10:07	Pass
Temperature (Outside)		83	°F	Overlap	6	in										
Comments:	Wrinkle cut out and fusion welded between SR-153 to SR-154															
6/28/10	S10/S10A	22	CN	W44	860	3	6/28/10	BOS	EOS	CN	22041	30	30	10:11	10:16	Pass
Temperature (Outside)		85	°F	Overlap	6	in										
Comments:	Wrinkle cut out and fusion welded between SR-154 to SR-155															
6/28/10	S11/S11A	22	CN	W44	860	3	6/28/10	BOS	EOS	DA	22043	30	30	10:12	10:17	Pass
Temperature (Outside)		85	°F	Overlap	6	in										
Comments:	Wrinkle cut out and fusion welded between SR-155 to SR-156															
6/28/10	S43/S44	530	JA	W26	860	4	7/12/10	BOS	EOS	DA	22043	30	30	13:30	13:35	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/29/10	S44/S45	525	JA	W26	860	4	7/12/10	BOS	EOS	DA	22041	30	29	13:33	13:38	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
6/29/10	S45/S46	520	CN	W44	860	4	7/12/10	BOS	EOS	DA	22045	30	30	13:35	13:40	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
6/29/10	S46/S47	520	JA	W26	860	4	7/12/10	BOS	EOS	DA	22031	30	30	13:38	13:43	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
6/29/10	S42/S50	378	CN	W44	860	4	7/22/10	BOS	EOS	DA	22041	31	31	15:05	15:10	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/29/10	S48/S49	11	JA	W26	860	4	7/12/10	BOS	EOS	DA	22043	30	30	14:22	14:27	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/29/10	S42/S48	50	JA	W26	860	4	7/12/10	BOS	EOS	DA	22045	30	30	14:25	14:30	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/29/10	S42/S49	50	JA	W26	860	4	7/12/10	BOS	EOS	DA	22041	30	30	14:24	14:29	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
7/2/10	Tie-in/S-43	530	JA	W26	860	3.5	7/21/10	BOS	BOS+240	EY	22041	30	30	13:30	13:35	Pass
Temperature (Outside)		80	°F	Overlap	6	in	7/22/10	BOS+240	BOS+260	DA	22043	30	30	12:23	12:28	Pass
Comments:							7/22/10	BOS+260	BOS+340	DA	22041	31	31	12:24	12:29	Pass
							7/22/10	BOS+340	BOS+470	DA	22043	30	30	12:29	12:34	Pass
							7/22/10	BOS+470	BOS+500	DA	22041	30	30	13:20	13:25	Pass
							7/22/10	BOS+500	EOS	DA	22043	30	30	13:22	13:27	Pass
7/2/10	S43/S42	22	JA	W26	860	3.5	7/12/10	BOS	EOS	DA	22047	30	30	14:30	14:35	Pass
Temperature (Outside)		79	°F	Overlap	6	in										
Comments:																
7/2/10	S43/S48	11	JA	W26	860	3.5	7/12/10	BOS	EOS	DA	22031	30	30	14:28	14:33	Pass
Temperature (Outside)		79	°F	Overlap	6	in										
Comments:																
7/2/10	S44/S48	22	JA	W26	860	3.5	7/12/10	BOS	EOS	DA	22041	30	30	14:50	14:55	Pass
Temperature (Outside)		79	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Loɣ

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/2/10	S45/S48	22	JA	W26	860	3.5	7/12/10	BOS	EOS	DA	22043	30	30	14:53	14:58	Pass
Temperature (Outside)		79	°F	Overlap	6	in										
Comments:																
7/2/10	S46/S48	5	JA	W26	860	3.5	7/12/10	BOS	EOS	DA	22045	30	29	14:59	15:04	Pass
Temperature (Outside)		79	°F	Overlap	6	in										
Comments:																
7/2/10	S46/S49	17	JA	W26	860	3.5	7/12/10	BOS	EOS	DA	22047	30	30	15:00	15:05	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
7/2/10	S47/S49	22	JA	W26	860	3.5	7/12/10	BOS	EOS	DA	22031	30	30	15:01	15:06	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
7/2/10	S47/S50	11	JA	W26	860	3.5	7/12/10	BOS	EOS	DA	22041	30	30	15:15	15:20	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
7/2/10	S49/S50	11	JA	W26	860	3.5	7/22/10	BOS	EOS	DA	22043	30	30	13:55	14:00	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/13/10	S47/S51	490	JA	W43	860	4	7/21/10	BOS	BOS+222	EY	22047	30	30	12:40	12:45	Pass
Temperature (Outside)		83	°F	Overlap	6	in	7/21/10	BOS+222	EOS	EY	22041	30	30	12:40	12:45	Pass
Comments:																
7/13/10	S51/S52	490	CN	W26	860	4	7/21/10	BOS	BOS+300	EY	22045	30	30	12:30	12:35	Pass
Temperature (Outside)		83	°F	Overlap	6	in	7/21/10	BOS+300	EOS	EY	22031	30	30	12:30	12:35	Pass
Comments:																
7/13/10	S52/S53	490	JA	W43	860	4	7/21/10	BOS	BOS+9	EY	22041	30	30	13:50	13:55	Pass
Temperature (Outside)		83	°F	Overlap	6	in	7/21/10	BOS+9	BOS+18	EY	22045	30	30	13:46	13:51	Pass
Comments:							7/21/10	BOS+18	BOS+35	EY	22041	30	30	13:41	13:46	Pass
							7/21/10	BOS+35	EOS	EY	22045	30	30	12:09	12:14	Pass
7/13/10	S53/S54	260	CN	W26	860	4	7/20/10	BOS	BOS+260	EY	22043	30	29	13:30	13:35	Pass
Temperature (Outside)		83	°F	Overlap	6	in										
Comments:	Two welders on panel - see seam tracking below															
7/13/10	S53/S54	230	JA	W43	860	4	7/21/10	BOS+260	BOS+440	EY	22045	30	30	11:50	11:55	Pass
Temperature (Outside)		83	°F	Overlap	6	in	7/21/10	BOS+440	EOS	EY	22031	30	30	12:06	12:11	Pass
Comments:	Two welders on panel - see seam tracking above															

Se_ _ _idary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/14/10	S54/S55	500	JA	W43	860	4	7/21/10	BOS	BOS+130	EY	22045	30	30	10:00	10:05	Pass
Temperature (Outside)		80	°F	Overlap	6	in	7/21/10	BOS+130	EOS	EY	22031	31	31	10:20	10:25	Pass
Comments:																
7/14/10	S55/S56	500	CN	W26	860	3.5	7/20/10	BOS	BOS+300	EY	22045	30	30	13:05	13:10	Pass
Temperature (Outside)		80	°F	Overlap	6	in	7/20/10	BOS+300	EOS	EY	22045	31	31	13:20	13:25	Pass
Comments:																
7/14/10	S56/S57	315	JA	W43	860	4	7/20/10	BOS+190	BOS+315	EY	22045	30	30	12:50	12:55	Pass
Temperature (Outside)		80	°F	Overlap	6	in	7/20/10	BOS+315	EOS	EY	22031	30	29	12:50	12:55	Pass
Comments:	Seaming suspended due to site shutdown															
7/19/10	S56/S57	190	JA	W43	860	4	7/20/10	BOS	BOS+190	EY	22031	30	30	13:06	13:11	Pass
Temperature (Outside)		91	°F	Overlap	6	in										
Comments:	Seaming continued after site shutdown															
7/21/10	S50/S51	22	JA	W43	860	4	7/22/10	BOS	EOS	DA	22045	30	30	14:10	14:15	Pass
Temperature (Outside)		91	°F	Overlap	6	in										
Comments:																
7/21/10	S50/S52	22	JA	W43	860	4	7/22/10	BOS	EOS	DA	22041	30	30	14:05	14:10	Pass
Temperature (Outside)		91	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/21/10	S50/S53	22	JA	W43	860	4	7/22/10	BOS	EOS	DA	22043	30	30	14:15	14:20	Pass
Temperature (Outside)		91	°F	Overlap	6	in										
Comments:																
7/21/10	S50/S54	22	JA	W43	860	4	7/22/10	BOS	EOS	DA	22045	30	30	14:19	14:24	Pass
Temperature (Outside)		91	°F	Overlap	6	in										
Comments:																
7/21/10	S50/S55	13	JA	W43	860	4	7/22/10	BOS	EOS	DA	22041	30	30	14:25	14:40	Pass
Temperature (Outside)		91	°F	Overlap	6	in										
Comments:																
7/21/10	S50/S56	22	JA	W43	860	4	7/22/10	BOS	EOS	DA	22043	31	31	14:38	14:43	Pass
Temperature (Outside)		91	°F	Overlap	6	in										
Comments:																
7/21/10	S50/S57	22	JA	W43	860	4	7/22/10	BOS	EOS	DA	22041	30	30	14:40	14:45	Pass
Temperature (Outside)		91	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Loɣ

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/26/10	S57/S58	500	JA	W24	860	4	7/26/10	BOS	BOS+245	DA	22031	30	30	16:00	16:05	Pass
Temperature (Outside)		100	°F	Overlap	6	in	7/26/10	BOS+245	BOS+265	DA	22045	31	31	15:39	15:44	Pass
Comments:							7/26/10	BOS+265	BOS+300	DA	22031	31	31	15:30	15:35	Pass
							7/26/10	BOS+300	BOS+365	DA	22045	31	31	15:12	15:17	Pass
							7/26/10	BOS+365	EOS	DA	22031	30	30	15:09	15:14	Pass
7/26/10	S58/S59	500	CN	W26	860	4	7/26/10	BOS	BOS+253	DA	22045	30	30	16:07	16:12	Pass
Temperature (Outside)		100	°F	Overlap	6	in	7/26/10	BOS+253	BOS+290	DA	22045	31	31	15:25	15:30	Pass
Comments:							7/26/10	BOS+290	EOS	DA	22045	30	30	14:48	14:53	Pass
7/27/10	S50/S58	22	CN	W26	860	3	8/4/10	BOS	EOS	DA	22041	31	31	9:42	9:47	Pass
Temperature (Outside)		100	°F	Overlap	6	in										
Comments:																
7/27/10	S50/S59	22	CN	W26	860	3	8/4/10	BOS	EOS	DA	22043	30	30	9:40	9:45	Pass
Temperature (Outside)		101	°F	Overlap	6	in										
Comments:																
7/29/10	S59/S60	270	JA	W43	860	4.5	8/10/10	BOS	BOS+270	DA	22221	30	29	13:35	13:40	Pass
Temperature (Outside)		101	°F	Overlap	6	in		BOS+270	BOS+300	Patched by SR-241						
Comments:	Two welders on panel - see seam tracking below															

Se___idary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/29/10	S59/S60	228	DA	W24	850	4	8/4/10	BOS+300	BOS+390	DA	22041	30	30	9:55	10:00	Pass
Temperature (Outside)		101	°F	Overlap	6	in	8/4/10	BOS+390	BOS+420	DA	22223	30	30	9:53	9:58	Pass
Comments:	Two welders on panel - see seam tracking above						8/4/10	BOS+420	EOS	DA	22043	31	31	9:28	9:33	Pass
7/29/10	S60/S61	528	CN	W26	860	4	8/4/10	BOS	EOS	DA	22221	31	30	9:26	9:31	Pass
Temperature (Outside)		101	°F	Overlap	6	in										
Comments:																
7/29/10	S61/S62	276	CN	W26	860	4	8/5/10	BOS+245	EOS	DA	22222	31	31	6:27	6:32	Pass
Temperature (Outside)		100	°F	Overlap	6	in										
Comments:	Two welders on panel - see seam tracking below															
7/29/10	S61/S62	245	JA	W43	860	4	8/4/10	BOS	BOS+245	DA	22222	31	31	9:02	9:08	Pass
Temperature (Outside)		100	°F	Overlap	6	in										
Comments:	Two welders on panel - see seam tracking above															
7/30/10 12:15	S62/S63	530	DA	W24	860	4.5	8/10/10	BOS	BOS+260	DA	22222	30	30	13:30	13:35	Pass
Temperature (Outside)		98	°F	Overlap	6	in		BOS+260	BOS+300	Replaced by panel S-74 and patched by SR-318						
Comments:							8/10/10	BOS+300	BOS+340	DA	22041	30	29	8:30	8:35	Pass
							8/10/10	BOS	BOS+260	DA	22222	30	30	13:30	13:35	Pass

Se dary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/30/10 12:30	S63/S64	530	CN	W26	860	4	8/4/10	BOS	EOS	DA	22043	31	31	8:41	8:46	Pass
Temperature (Outside)		98	°F	Overlap	6	in										
Comments:																
7/30/10	S64/S65	530	JA	W43	860	4	8/4/10	BOS	EOS	DA	22222	31	31	8:37	9:42	Pass
Temperature (Outside)		99	°F	Overlap	6	in										
Comments:																
7/30/10 14:35	S65/S66	530	CN	W26	860	4	8/4/10	BOS	BOS+220	DA	22221	31	31	8:35	8:40	Pass
Temperature (Outside)		100	°F	Overlap	6	in	8/5/10	BOS+220	EOS	DA	22221	31	31	6:23	6:28	Pass
Comments:																
8/2/10	S50/S60	22	DA	W24	850	3.5	8/4/10	BOS	EOS	DA	22041	31	31	9:27	9:32	Pass
Temperature (Outside)		84	°F	Overlap	6	in										
Comments:																
8/2/10	S50/S61	22	DA	W24	850	3.5	8/4/10	BOS	EOS	DA	22042	31	31	9:25	9:30	Pass
Temperature (Outside)		84	°F	Overlap	6	in										
Comments:																
8/2/10	S50/S62	22	DA	W24	850	3.5	8/4/10	BOS	EOS	DA	22043	31	31	8:59	9:04	Pass
Temperature (Outside)		84	°F	Overlap	6	in										
Comments:																

Se dary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/2/10	S50/S63	22	DA	W24	850	3.5	8/4/10	BOS	EOS	DA	22041	31	31	8:42	8:47	Pass
Temperature (Outside)		84	°F	Overlap	6	in										
Comments:																
8/2/10	S50/S64A	22	DA	W24	850	3.5	8/4/10	BOS	EOS	DA	22041	30	30	7:23	7:28	Pass
Temperature (Outside)		84	°F	Overlap	6	in										
Comments:																
8/2/10	S50/S65	22	DA	W24	850	3.5	8/4/10	BOS	EOS	DA	22043	30	30	7:08	7:13	Pass
Temperature (Outside)		84	°F	Overlap	6	in										
Comments:																
8/2/10	S50/S66	22	DA	W24	850	3.5	8/4/10	BOS	EOS	DA	22041	30	30	7:05	7:10	Pass
Temperature (Outside)		84	°F	Overlap	6	in										
Comments:																
8/2/10	S64/S64A	22	DA	W24	850	3.5	8/4/10	BOS	EOS	DA	22043	30	30	7:24	7:29	Pass
Temperature (Outside)		85	°F	Overlap	6	in										
Comments:																
8/7/10	S67/S68	81	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22041	30	30	12:00	12:05	Pass
Temperature (Outside)		85	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/7/10	S67/S71	87	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22043	31	31	12:02	12:07	Pass
Temperature (Outside)		85	°F	Overlap	6	in										
Comments:																
8/7/10	S71/S72	87	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22045	31	31	12:04	12:09	Pass
Temperature (Outside)		85	°F	Overlap	6	in										
Comments:																
8/7/10	S72/S59	22	JA	W43	860	3.5	8/7/10	BOS	BOS+13	DA	22221	30	30	12:34	12:39	Pass
Temperature (Outside)		90	°F	Overlap	6	in		BOS+13	EOS	Capped with SR-294						
Comments:	South Side of S-72															
8/7/10	S68/S69	40	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22221	30	30	12:55	13:00	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																
8/7/10	S69/S70	18	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22221	30	30	13:14	13:19	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																
8/7/10	S56/S68	25	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22043	31	31	12:45	12:50	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/7/10	S55/S68	8	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22041	31	30	14:28	14:33	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																
8/7/10	S55/S78	21	CN	W24	860	3.5	8/9/10	BOS	EOS	DA	22045	31	31	7:48	7:53	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:	Re-welding of the secondary geomembrane during repair															
8/7/10	S56/S78	32	CN	W24	860	3.5	8/9/10	BOS	EOS	DA	22222	30	30	8:05	8:10	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:	Re-welding of the secondary geomembrane during repair															
8/7/10	S54/S70	13	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22222	31	31	13:34	13:39	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:	North Side of S-70															
8/7/10	S54/S69	4	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22041	31	30	14:03	14:08	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:	South Side of S-69															
8/7/10	S55/S69	8	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22043	30	29	13:37	13:42	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/7/10	S54/S69	6	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22041	30	29	13:35	13:40	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:	North Side of S-69															
8/7/10	S57/S78	27	CN	W24	860	3.5	8/9/10	BOS	BOS+6	DA	22045	30	30	8:10	8:15	Pass
Temperature (Outside)		90	°F	Overlap	6	in	8/9/10	BOS+6	EOS	DA	22221	30	30	8:12	8:17	Pass
Comments:	Re-welding of the secondary geomembrane during repair															
8/7/10	S58/S78	35	CN	W24	860	3.5	8/9/10	BOS	BOS+21	DA	22041	30	30	9:00	9:05	Pass
Temperature (Outside)		90	°F	Overlap	6	in	8/9/10	BOS+21	EOS	DA	22045	30	30	9:12	9:17	Pass
Comments:	Re-welding of the secondary geomembrane during repair															
8/7/10	S59/S78	36	CN	W24	860	3.5	8/9/01	BOS	EOS	DA	22045	30	30	12:18	12:23	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:	Re-welding of the secondary geomembrane during repair															
8/7/10	S72/S59	22	JA	W43	860	3.5		BOS	EOS	Seam Capped by SR-231 and SR-241						
Temperature (Outside)			°F	Overlap	6	in										
Comments:	North Side of S-72															
8/7/10	S67/S57	12	EY	G48	500	500		BOS	EOS	Vacuum Test Passed						
Temperature (Outside)		89	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/7/10	S71/S58	22	EY	G48	550	500		BOS	EOS	Patched by SR-231						
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
8/7/10	S71/S78	22	JA	W43	860	3.5	8/9/10	BOS	BOS+18	DA	22043	30	30	6:47	6:52	Pass
Temperature (Outside)		-	°F	Overlap	6	in	8/9/10	BOS+18	EOS	DA	22222	30	30	6:57	7:02	Pass
Comments:																
8/7/10	S67/S78	22	JA	W43	860	3.5	8/7/10	BOS	BOS+13	DA	22045	30	30	14:29	14:34	Pass
Temperature (Outside)		-	°F	Overlap	6	in	8/9/10	BOS+13	EOS	DA	22222	31	31	6:40	6:45	Pass
Comments:																
8/7/10	S68/S78	22	JA	W43	860	3.5	8/7/10	BOS	BOS+6	DA	22043	30	30	14:27	14:32	Pass
Temperature (Outside)		-	°F	Overlap	6	in	8/7/10	BOS+6	EOS	DA	22041	31	30	14:28	14:33	Pass
Comments:																
8/7/10	S54/S70	11	JA	W43	860	3.5	8/7/10	BOS	EOS	DA	22041	30	29	14:00	14:05	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:	South Side of S-70															
8/7/10	S55A/S78	42	JA	W43	860	3.5	8/9/10	BOS	BOS+19	DA	22045	31	31	6:09	6:14	Pass
Temperature (Outside)		90	°F	Overlap	6	in	8/9/10	BOS+19	EOS	DA	22041	31	30	6:11	6:16	Pass
Comments:	Re-welding of the secondary geomembrane during repair															

Se dary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/7/10	S54/S55A	42	CN	W24	860	3.5	8/9/10	BOS	BOS+19	DA	22222	31	31	6:10	6:15	Pass
Temperature (Outside)		90	°F	Overlap	6	in	8/9/10	BOS+19	EOS	DA	22043	31	31	6:16	6:21	Pass
Comments:																
8/10/10	S60/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22222	30	29	8:34	8:39	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:	North side of Panel S-73															
8/10/10	S60/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22041	30	30	10:11	10:16	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:	South Side of Panel S-73															
8/10/10	S61/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22043	30	30	8:35	8:40	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:	North Side of Panel S-73															
8/10/10	S61/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22043	30	29	10:02	10:07	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:	South Side of Panel S-73															
8/10/10	S62/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22041	30	30	8:39	8:44	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:	North Side of Panel S-73															

Se dary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/10/10	S62/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22222	31	31	10:00	10:05	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:	South Side of Panel S-73															
8/10/10	S63/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22045	30	30	8:43	8:48	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:	North Side of Panel S-73															
8/10/10	S63/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22041	30	30	9:58	10:03	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:	South Side of Panel S-73															
8/10/10	S64/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22045	30	30	8:58	9:03	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:	North Side of Panel S-73															
8/10/10	S64/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22043	30	30	9:50	9:55	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:	South Side of Panel S-73															
8/10/10	S65/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22043	31	31	9:00	9:05	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:	North Side of Panel S-73															

Se ıdary Geomembrane Seam Tracking Loɣ

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/10/10	S65/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22043	31	30	9:33	9:38	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:	South Side of Panel S-73															
8/10/10	S66/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22041	30	30	9:07	9:12	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:	North Side of Panel S-73															
8/10/10	S66/S73	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22041	31	31	14:14	14:19	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:	South Side of Panel S-73															
8/10/10	S60/S74	57	CN	W24	860	0	8/10/10	BOS	EOS	DA	22221	30	30	10:42	10:47	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:																
8/10/10	S74/S72	57	CN	W24	860	0	8/10/10	BOS	EOS	DA	22041	30	30	10:50	10:55	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
8/10/10	S75/S63	27	CN	W24	860	0	8/10/10	BOS	EOS	DA	22222	30	29	10:30	10:35	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																

Se ıdary Geomembrane Seam Tracking Loɣ

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/10/10	S75/S62	27	CN	W24	860	0	8/10/10	BOS	EOS	DA	22222	31	31	12:35	12:40	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
8/10/10	S66/S76	530	JA	W43	860	0	8/10/10	BOS	BOS+310	DA	22221	30	30	13:09	13:14	Pass
Temperature (Outside)		80	°F	Overlap	6	in	8/10/10	BOS+310	EOS	DA	22043	30	30	13:48	13:53	Pass
Comments:																
8/10/10	S76/S77	530	CN	W24	860	0	8/10/10	BOS	EOS	DA	22045	30	30	14:46	14:51	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
8/10/10	S76/S50	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22222	30	30	14:45	14:50	Pass
Temperature (Outside)		89	°F	Overlap	6	in										
Comments:																
8/10/10	S77/S50	22	JA	W43	860	0	8/10/10	BOS	EOS	DA	22221	30	30	14:53	14:58	Pass
Temperature (Outside)		89	°F	Overlap	6	in										
Comments:																
8/25/10	S57/WR	250	DA	W85	850	3.5	8/25/10	BOS	EOS	DA	22222	31	31	10:20	10:25	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:	Wrinkle in S-57 cut out and fusion welded between SR-329 and SR-330															

Se...dary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/25/10	S59/WR	85	DA	W85	850	3.5	8/25/10	BOS	EOS	DA	22222	31	31	10:28	10:33	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments: Wrinkle in S-59 cut out and fusion welded between SR-283 and SR-328																

F.2.3

SECONDARY GEOMEMBRANE REPAIR LOG

Seco ary Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING, INC.

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number

Codes

Defect Codes:

BO- Burn Out	MD - Manufacturing Damage	IO- Insufficient Overlap	WD- Wind Damage
BS- Boot Skirt	DS #- Destructive Sample	SI- Soil Irregularity	WR- Wrinkle
CO- Change of Overlap	EE- Earthwork Equip. Dam.	SL- Slag on Textured	WS- Welder Restart
CR- Crease	Ext- Extension	T- Panel Intersection	Other- Sand Bag under liner SB
ID- Installation Damage	PT- Pressure test cut	VL- Vacuum Test Leak	Other- Water Bottle under liner WB
D - Installation Damage			

Repair Type: C- Cap B- Bead P - Patch EW- Extrusion Weld F-Fusion Weld

* Note -- Repairs were Spark Tested in areas that were inaccessible with the Vacuum Box.

* Note -- Repairs noted with an SR-XXA suffix retests of the originating repair and do not represent a separate repair

Seam Codes:

BOS- Beginning of Stationing EOS- End of Stationing MOP - Middle of Panel TOE - Toe of Slope

Stationing begins at the top of slope for panels oriented North to South

Stationing begins at the west edge of panels oriented West to East

S...ndary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-001	ID		S1 BOP+338 MOP	Captured in SR-053							
SR-002	ID	17-Jun-10	S1 BOS+90 MOP	B	6-in	EY	W48	550/500	6/21/10	Pass	
SR-003	ID	11-Jun-10	S2 BOS+240 MOP	B	6-in	EY	G48	550/500	6/25/10	Pass	
SR-004	ID	17-Jun-10	S3 BOS+175 MOP (3)	B	(3) 6-in	EY	W48	550/500	6/21/10	Pass	
SR-005	DS-01	11-Jun-10	S1/S2 BOS+380	P	2x5	EY	G48	550/500	6/22/10	Pass	
SR-006	DS-02	11-Jun-10	S2/S3 BOS+360	P	2x5	EY	G48	550/500	7/6/10	Pass	
SR-007	DS-03	11-Jun-10	S2/S3 BOS+175	P	2x5	EY	G48	550/500	6/21/10	Pass	
SR-008	DS-04	11-Jun-10	S1/S2 BOS+90	P	2x5	EY	G48	550/500	6/21/10	Pass	
SR-009	BO	18-Jun-10	S2/S3 BOS	P	2x4	EY	G48	550/500	7/6/10	Pass	
SR-010	BO/WR	11-Jun-10	S3/S4 BOS+210	P	2x4	EY	G48	550/500	6/21/10	Pass	
SR-011	WR	11-Jun-10	S4/S5 BOS+240	P	3x1.5	EY	G48	550/500	6/21/10	Pass	
SR-012	DS-05	11-Jun-10	S3/S4 BOS+185	P	2x5	EY	G48	550/500	6/21/10	Pass	
SR-013	DS-06	11-Jun-10	S4/S5 BOS+120	P	2x5	EY	G48	550/500	6/21/10	Pass	
SR-014	DS-07	11-Jun-10	Tie-in/S1 BOS+132	P	2x5	EY	G48	550/500	6/21/10	Pass	
SR-015	PT	18-Jun-10	Tie-in/S1 BOS+10	P	2x4	EY	G48	550/500	7/6/10	Pass	
SR-016	MO	18-Jun-10	S2 BOP+40 MOP	B	6-in	EY	G48	550/500	7/6/10	Pass	
SR-017	FS	15-Jun-10	S5/S6 BOS+350	P	1x1	EY	G48	550/500	6/21/10	Pass	
SR-018	DS-08	15-Jun-10	S5/S6 BOS+320	p	2x4	EY	G48	550/500	6/21/10	Pass	
SR-019	ID	17-Jun-10	S6/S7 BOS+280	P	2x6	EY	W48	550/500	6/21/10	Pass	
SR-020	ID	16-Jun-10	S6/S7 BOS+335	P	1.5x1	EY	G48	550/500	6/21/10	Pass	

S ndary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-021	ID	16-Jun-10	S6/S7 BOS+340	P	1x2	EY	G48	550/500	6/21/10	Pass	
SR-022	ID	16-Jun-10	S6/S7 BOS+350	P	1x2.5	EY	G48	550/500	6/21/10	Pass	
SR-023	T	16-Jun-10	Tie-in/S1 BOS+450	P	2x2.5	EY	G48	550/500	6/21/10	Pass	
SR-024	DS-09	15-Jun-10	Tie-in/S1 BOS+320	P	2x7	EY	G48	550/500	7/6/10	Pass	
SR-025	D	16-Jun-10	S6/S7 BOS+320	P	1.5x1	EY	G48	550/500	6/21/10	Pass	
SR-026	DS-10	16-Jun-10	S6/S7 BOS+160	P	2x4	EY	G48	550/500	6/21/10	Pass	
SR-027	DS-11	15-Jun-10	S8/S9 BOS+400	P	2x6	EY	G48	550/500	6/25/10	Pass	
SR-028	BO	16-Jun-10	Tie-in/S1 BOS+450	P	2x3	EY	G48	550/500	7/8/10	Pass	
SR-029	DS-12	16-Jun-10	S7/S8 BOS+100	P	2x4	EY	G48	550/500	6/21/10	Pass	
SR-030	SI	18-Jun-10	S6 BOS MOP	B	4-in	EY	G48	550/500	7/2/10	Pass	
SR-031	ID	17-Jun-10	S1 BOS+460 MOP	P	1.5x1.5	EY	W48	550/500	6/28/10	Pass	
SR-032	ID	17-Jun-10	S10 BOS+475 MOP (2)	P	(2) 1.5x1.5	EY	W48	550/500	6/28/10	Pass	
SR-033	ID	14-Jun-10	Tie-in/S1 BOS+229	P	2x2	EY	G48	550/500	6/24/10	Fail	SR-033A
SR-033A	ID	24-Jun-10	Tie-in/S1 BOS+230	P	2x2	EY	G48	550/500	6/25/10	Pass	
SR-034	BO	16-Jun-10	S11/S12 BOS+263	P	2x2	EY	G48	550/500	6/21/10	Pass	
SR-035	PT	15-Jun-10	S5/S6 BOS+425	P	2x4	EY	G48	550/500	6/21/10	Pass	
SR-036	BO	18-Jun-10	S14/S15 BOS+3	P	1.5x1.5	EY	G48	550/500	6/22/10	Pass	
SR-037	BO	18-Jun-10	S15/S16 BOS	P	3x6	EY	G48	550/500	6/22/10	Pass	
SR-038	BO	18-Jun-10	S16/S17 BOS	P	2x2	EY	G48	550/500	6/22/10	Pass	
SR-039	WS		S18/S19 BOS+280	Captured as SR-049							SR-049

S_ _ _ndary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-040	DS-13	17-Jun-10	S9/S10 BOS+475	P	2x4	EY	W48	550/500	6/28/10	Pass	
SR-041	DS-14	16-Jun-10	S10/S11 BOS+300	P	2x4	EY	G48	550/500	6/21/10	Pass	
SR-042	DS-15	16-Jun-10	S11/S12 BOS+230	P	2x4	EY	G48	550/500	6/21/10	Pass	
SR-043	DS-16	16-Jun-10	S12/S13 BOS+125	P	2x4	EY	G48	550/500	6/21/10	Pass	
SR-044	DS-17	16-Jun-10	S13/S14 BOS+360	P	2x4	EY	G48	550/500	6/24/10	Pass	
SR-045	DS-18	18-Jun-10	S14/S15 BOS+30	P	2x4	EY	G48	550/500	6/22/10	Pass	
SR-046	DS-19	17-Jun-10	S15/S16 BOS+420	P	2x4	EY	G48	550/500	6/24/10	Pass	
SR-047	DS-20	17-Jun-10	S16/S17 BOS+325	P	2x4	EY	G48	550/500	6/24/10	Pass	
SR-048	DS-21	17-Jun-10	S17/S18 BOS+160	P	2x4	EY	G48	550/500	6/21/10	Pass	
SR-049	DS-22	17-Jun-10	S18/S19 BOS+285 (SR-39)	P	2x6	EY	G48	550/500	6/24/10	Pass	
SR-050	PT	16-Jun-10	Tie-in/S1 BOS+321	B	12-in	EY	G48	550/500	7/6/10	Pass	
SR-051	PT	16-Jun-10	Tie-in/S1 BOS+315	P	2x3	EY	G48	550/500	7/6/10	Pass	
SR-052	PT	16-Jun-10	Tie-in/S1 BOS+270	B	6-in	EY	G48	550/500	6/25/10	Pass	
SR-053	ID	16-Jun-10	Tie-in/S1 BOS+338 (SR-01)	B	6-in	EY	G48	550/500	7/6/10	Pass	
SR-054	PT	17-Jun-10	S11/S12 BOS+265	P	1.5x1.5	EY	G48	550/500	6/21/10	Pass	
SR-055	WS	17-Jun-10	S21/S22 BOS+261	P	2x3	EY	G48	550/500	6/21/10	Pass	
SR-056	ID	18-Jun-10	S3 EOP MOP	P	2x2	EY	G48	550/500	7/1/10	Pass	
SR-057	DS-23	17-Jun-10	S19/S20 BOS+90	P	2x4	EY	G48	550/500	6/22/10	Pass	
SR-058	DS-24	17-Jun-10	S20/S21 BOS+255	P	2x4	EY	G48	550/500	6/21/10	Pass	
SR-059	DS-25	17-Jun-10	S21/S22 BOS+515	P	2x4	EY	G48	550/500	6/24/10	Pass	

Secondary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-060	PT	18-Jun-10	S18/S19 BOS	P	2x2	EY	G48	550/500	6/22/10	Pass	
SR-061	T/WS	21-Jun-10	S1/S2/S23	P	2x2	DA	G15	550/500	7/1/10	Pass	
SR-062	T	21-Jun-10	S2/S3/S23	P	2x2	DA	G15	550/500	7/1/10	Pass	
SR-063	T	21-Jun-10	S3/S4/S23	P	2x2	DA	G15	550/500	7/1/10	Pass	
SR-064	T	21-Jun-10	S4/S5/S23	P	2x2	DA	G15	550/500	7/1/10	Pass	
SR-065	T	21-Jun-10	S5/S6/S23	P	2x2	DA	G15	550/500	7/1/10	Pass	
SR-066	T	21-Jun-10	S6/S7/S23	P	2x2	DA	G15	550/500	7/1/10	Pass	
SR-067	T	21-Jun-10	S7/S8/S23	P	2x2	DA	G15	550/500	7/1/10	Pass	
SR-068	T	21-Jun-10	S8/S9/S23	P	2x2	DA	G15	550/500	7/1/10	Pass	
SR-069	T	21-Jun-10	S9/S10/S23	P	2x2	DA	G15	550/500	7/1/10	Pass	
SR-070	T	22-Jun-10	S10/S11/S23	P	1x2	EY	G48	550/500	7/1/10	Pass	
SR-071	T	22-Jun-10	S11/S12/S23	P	2x2	EY	G48	550/500	7/1/10	Pass	
SR-072	T	22-Jun-10	S12/S13/S23	P	2x2	EY	G48	550/500	6/30/10	Pass	
SR-073	T	22-Jun-10	S13/S14/S23	P	2x2	EY	G48	550/500	6/30/10	Pass	
SR-074	T	22-Jun-10	S14/S15/S23	P	1x2	EY	G48	550/500	6/30/10	Pass	
SR-075	T/ID	22-Jun-10	S15/S16/S23 (2)	P	1x2/1x1	EY	G48	550/500	6/30/10	Pass	
SR-076	T	22-Jun-10	S16/S17/S23	P	1x2	EY	G48	550/500	6/30/10	Pass	
SR-077	T	22-Jun-10	S17/S18/S23	P	2x2	EY	G48	550/500	6/30/10	Pass	
SR-078	T	22-Jun-10	S18/S19/S23	P	2x2	EY	G48	550/500	6/30/10	Pass	
SR-079	T	22-Jun-10	S19/S20/S23	P	2x2	EY	G48	550/500	6/30/10	Pass	

S ndary Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-080	T	22-Jun-10	S20/S21/S23	P	2x2	EY	G48	550/500	6/24/10	Pass	
SR-081	T	22-Jun-10	S21/S22/S23	P	2x2	EY	G48	550/500	6/24/10	Pass	
SR-082	ID	17-Jun-10	S12 BOS+280	P	6-in	EY	G48	550/500	6/25/10	Pass	
SR-083	MD	17-Jun-10	S25/S26 BOS+205	B	12-in	EY	G48	550/500	7/8/10	Pass	
SR-084	T	22-Jun-10	S24/S25/S26	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-085	T	22-Jun-10	S23/S24/S25	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-086	SI	22-Jun-10	S26 BOS+75 (4)	B	(4) 6-in	EY	G48	550/500	7/8/10	Pass	
SR-087	SI	22-Jun-10	S26 BOP+120	P	1x1	EY	G48	550/500	7/8/10	Pass	
SR-088	SI	22-Jun-10	S27 BOP+130	P	1x1	EY	G48	550/500	7/8/10	Pass	
SR-089	DS-26	18-Jun-10	S23/S10 BOS+8	P	2x4	EY	G48	550/500	7/1/10	Pass	
SR-090	DS-27	22-Jun-10	S23/S25 BOS+210	P	2x4	EY	G48	550/500	6/30/10	Pass	
SR-091	ID	22-Jun-10	S13 BOS+510 MOP	P	1x1	EY	G48	550/500	6/30/10	Pass	
SR-092	DS-28	22-Jun-10	S25/S26 BOS+370	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-093	DS-29	22-Jun-10	S26/S27 BOS+195	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-094	AT	18-Jun-10	S11/S12 BOS	P	2x4	EY	G48	550/500	6/22/10	Pass	
SR-095	DS-30	22-Jun-10	S27/S28 BOS+105	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-096	DS-31	22-Jun-10	S28/S29 BOS+295	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-097	DS-32	22-Jun-10	S29/S30 BOS+175	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-098	DS-33	22-Jun-10	S1/Tie-in 20-ft North of Toe of Slope (TOS)	P	2x4	EY	G48	550/500	6/25/10	Pass	
SR-099	ID	18-Jun-10	S12 BOS+7 MOP	B	6-in	EY	G48	550/500	6/22/10	Pass	

S_ _ _ndary Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-100	DS-34	21-Jun-10	S18/SR-049	P	2x4	EY	G48	550/500	6/24/10	Pass	
SR-101	DS-35	21-Jun-10	S13/SR-044	P	2x4	EY	G48	550/500	6/24/10	Pass	
SR-102	DS-36	21-Jun-10	SR-027/S9	P	2x4	EY	G48	550/500	6/25/10	Pass	
SR-103	ID	21-Jun-10	S5 BOS+520 MOP	P	1x1	EY	G48	550/500	7/1/10	Pass	
SR-104	DS-23A	21-Jun-10	S19/S20 BOS+110	Cap	2x15	EY	G48	550/500	6/22/10	Pass	
SR-105	DS-23B	21-Jun-10	S19/S20 BOS+80	Cap	2x15	EY	G48	550/500	6/22/10	Pass	
SR-106	DS-37	22-Jun-10	S30/S31 BOS+160	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-107	DS-38	22-Jun-10	S31/S32 BOS+300	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-108	DS-39	22-Jun-10	S32/S33 BOS+350	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-109	DS-40	23-Jun-10	S33/S34 BOS+110	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-110	DS-41	22-Jun-10	S34/S35 BOS+205	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-111	Ext	22-Jun-10	S23/S1/Tie-in	B	8-in	EY	G48	550/500	7/8/10	Pass	
SR-112	T/WS	22-Jun-10	S1/Tie-in EOS (2)	P	(2) 2x2	EY	G48	550/500	7/8/10	Pass	
SR-113	T	22-Jun-10	S23/S24/Tie-in	P	2x6	EY	G48	550/500	7/8/10	Pass	
SR-114	WS	22-Jun-10	S23/Tie-in BOS+10	P	2x3	EY	G48	550/500	7/8/10	Pass	
SR-115	T	23-Jun-10	S24/S26/Tie-in	P	3x6	EY	G48	550/500	7/8/10	Pass	
SR-116	T	23-Jun-10	S26/S27/Tie-in	P	2x2	EY	G48	550/500	7/8/10	Pass	
SR-117	T	23-Jun-10	S27/S28/Tie-in	P	2x3	EY	G48	550/500	7/8/10	Pass	
SR-118	T	23-Jun-10	S28/S29/Tie-in	P	2x2	EY	G48	550/500	7/8/10	Pass	
SR-119	AT	23-Jun-10	S29/Tie-in BOS+5	P	2x6	EY	G48	550/500	7/8/10	Pass	

Secondary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING, INC.

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-120	T	23-Jun-10	S29/S30/Tie-in	P	2x2	EY	G48	550/500	7/8/10	Pass	
SR-121	T	23-Jun-10	S30/S31/Tie-in	P	2x2	EY	G48	550/500	7/8/10	Pass	
SR-122	T	23-Jun-10	S31/S32/Tie-in	P	2x2	EY	G48	550/500	7/8/10	Pass	
SR-123	ID	23-Jun-10	S35 BOP+460 MOP	P	1x1	EY	G48	550/500	7/12/10	Pass	
SR-124	DS-42	22-Jun-10	SR-89/S10	P	2x4	EY	G48	550/500	7/1/10	Pass	
SR-125	DS-43	22-Jun-10	SR-107/S31	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-126	DS-44	23-Jun-10	SR-100/S18	P	2x4	EY	G48	550/500	6/24/10	Pass	
SR-127	WS/PT	23-Jun-10	S41/S42 BOS+320	P	2x2	EY	G48	550/500	7/21/10	Pass	
SR-128	ID	23-Jun-10	S29 BOS+510	P	2x2	EY	G48	550/500	7/8/10	Pass	
SR-129	DS-45	23-Jun-10	S35/S36 BOS+300	P	2x4	EY	G48	550/500	7/8/10	Pass	
SR-130	DS-46	23-Jun-10	S36/S37 BOS+125	P	2x4	EY	G48	550/500	7/21/10	Pass	
SR-131	DS-47	23-Jun-10	S37/S38 BOS+40	P	2x4	EY	G48	550/500	7/21/10	Pass	
SR-132	DS-48	23-Jun-10	S38/S39 BOS+230	P	2x4	EY	G48	550/500	7/21/10	Pass	
SR-133	DS-49	23-Jun-10	S39/S40 BOS+375	P	2x4	EY	G48	550/500	7/21/10	Pass	
SR-134	DS-50	23-Jun-10	S40/S41 BOS+415	P	2x4	EY	G48	550/500	7/21/10	Pass	
SR-135	DS-51	23-Jun-10	S41/S42 BOS+375	P	2x4	EY	G48	550/500	7/21/10	Pass	
SR-136	SI	23-Jun-10	S41 BOP+375 MOP	P	2x2	EY	G48	550/500	7/21/10	Pass	
SR-137	T	23-Jun-10	S32/S33/Tie-in	P	2x2	EY	G48	550/500	7/8/10	Pass	
SR-138	T	23-Jun-10	S33/S34/Tie-in	P	2x2	EY	G48	550/500	7/12/10	Pass	
SR-139	T	23-Jun-10	S34/S35/Tie-in	P	2x2	EY	G48	550/500	7/12/10	Pass	

S ndary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-140	T	23-Jun-10	S35/S36/Tie-in (2)	P	(2) 2x2	EY	G48	550/500	7/12/10	Pass	
SR-141	T	23-Jun-10	S36/S37/Tie-in	P	2x4	EY	G48	550/500	7/12/10	Pass	
SR-142	T	23-Jun-10	S37/S38/Tie-in	P	2x2	EY	G48	550/500	7/12/10	Pass	
SR-143	T	23-Jun-10	S38/S39/Tie-in	P	2x2	EY	G48	550/500	7/12/10	Pass	
SR-144	T	23-Jun-10	S39/S40/Tie-in (2)	P	(2) 2x2	EY	G48	550/500	7/12/10	Pass	
SR-145	DS-52	23-Jun-10	SR-134/S41	P	2x4	EY	G48	550/500	7/21/10	Pass	
SR-146	ID	22-Jul-10	S41 BOS+460 (2)	B	(2) 10-in	EY	G48	550/500	7/26/10	Pass	
SR-147	ID	22-Jul-10	S42 BOS+460	P	3x6	EY	G48	550/500	7/26/10	Pass	
SR-148	WR	24-Jun-10	Between S18 to S16 at BOP+260 (TOS)	P	2x70	EY	G48	550/500	6/24/10	Pass	
SR-149	DS-53	24-Jun-10	S18/SR148 at TOS	P	2x4	EY	G48	550/500	6/24/10	Pass	
SR-150	WR	24-Jun-10	S15 BOP+250 MOP	P	1x1	EY	G48	550/500	6/24/10	Pass	
SR-151	WR	28-Jun-10	Between S1 to S2 BOS+250	P	2x75	EY	G48	550/500	6/30/10	Pass	
SR-152	WR	28-Jun-10	S8/S7 BOS+260	P	2x25	EY	G48	550/500	6/30/10	Pass	
SR-153	WR	28-Jun-10	S8/S9 BOS+260	P	2x2	EY	G48	550/500	6/28/10	Pass	
SR-154	WR	28-Jun-10	S9/S10 BOS+260	P	2x2	EY	G48	550/500	6/28/10	Pass	
SR-155	WR	28-Jun-10	S10/S11 BOS+260	P	2x2	EY	G48	550/500	6/28/10	Pass	
SR-156	WR	28-Jun-10	S11/S12 BOS+260	P	4x2	EY	G48	550/500	6/28/10	Pass	
SR-157	ID	22-Jul-10	S44 BOS+510 (3)	B	(3) 6-in	EY	G48	550/500	7/26/10	Pass	
SR-158	ID	22-Jul-10	S45 BOS+500	B	8-in	EY	G48	550/500	7/26/10	Pass	
SR-159	ID	22-Jul-10	S43/S44 BOS+315	P	2x6	EY	G48	550/500	8/4/10	Pass	

S ndary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-160	DS-54	22-Jul-10	S43/S44 BOS+305	P	2x5	EY	G48	550/500	6/30/10	Pass	
SR-161	WR	29-Jun-10	Between S4 and S8 BOP+245	P	2x100	EY	G48	550/500	6/30/10	Pass	
SR-162	DS-55	30-Jun-10	S6/SR-161	P	2x4	EY	G48	550/500	7/6/10	Pass	
SR-163	WR	6-Jul-10	S3 BOP+300 (3)	B	(3) 8-in	EY	G48	550/500	7/6/10	Pass	
SR-164	ID	22-Jul-10	S44/S45 BOS+380	B	96-in	EY	G48	550/500	8/4/10	Pass	
SR-165	DS-56	22-Jul-10	S44/S45 BOS+210	P	2x4	EY	G48	550/500	8/4/10	Pass	
SR-166	DS-57	21-Jul-10	S46/S47 BOS+45	P	2x4	EY	G48	500/500	8/4/10	Pass	
SR-167	DS-58	21-Jul-10	S45/S46 BOS+110	P	2x4	EY	G48	500/500	8/4/10	Pass	
SR-168	DS-59	22-Jul-10	S43/Tie-in BOS+260	P	1x1	EY	G48	550/500	8/4/10	Pass	
SR-169	ID	22-Jul-10	S43/Tie-in BOS+290	P	3x5	EY	G48	550/500	8/4/10	Pass	
SR-170	IO	22-Jul-10	S43/Tie-in BOS+318	B	36-in	EY	G48	550/500	8/4/10	Pass	
SR-171	ID	22-Jul-10	S43/Tie-in BOS+340	P	2x3	EY	G48	550/500	8/4/10	Pass	
SR-172	WS	22-Jul-10	S43/Tie-in BOS+473	P	2x2	EY	G48	550/500	8/4/10	Pass	
SR-173	ID	22-Jul-10	S43/Tie-in BOS+485	P	2x2	EY	G48	550/500	8/4/10	Pass	
SR-174	ID	22-Jul-10	S43/Tie-in BOS+500 (2)	P	2x1 and 1x1	EY	G48	550/500	7/26/10	Pass	
SR-175	ID	22-Jul-10	S43/Tie-in BOS+515	P	2x1	EY	G48	550/500	7/26/10	Pass	
SR-176	WS	22-Jul-10	S43/Tie-in BOS+240	Cap	2x11	EY	G48	550/500	8/4/10	Pass	
SR-177	T	22-Jul-10	S42/S43/Tie-in	P	2x2	EY	G48	550/500	7/26/10	Pass	
SR-178	T	22-Jul-10	S42/S43/S48	P	2x2	EY	G48	550/500	7/26/10	Pass	
SR-179	T	22-Jul-10	S43/S44/S48	P	2x2	EY	G48	550/500	7/26/10	Pass	

S(ndary Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-180	T	22-Jul-10	S44/S45/S48	P	2x1	EY	G48	550/500	7/26/10	Pass	
SR-181	T	22-Jul-10	S45/S46/S48 & S46/S47/S49	P	2x2.5	EY	G48	550/500	7/26/10	Pass	
SR-182	T	22-Jul-10	S42/S48/S49	P	2x2.5	EY	G48	550/500	7/26/10	Pass	
SR-183	T	22-Jul-10	S46/S47/S49	P	2x2.5	EY	G48	550/500	7/26/10	Pass	
SR-184	T	22-Jul-10	S42/S49/S50	P	2.5x3	EY	G48	550/500	7/26/10	Pass	
SR-185	T	22-Jul-10	S47/S49/S50	P	2.5x3	EY	G48	550/500	7/26/10	Pass	
SR-186	SB	12-Jul-10	Cut in liner corresponding to PR-44	P	1x1	EY	G48	550/500	7/12/10	Pass	
SR-187	T	23-Jun-10	S40/S41/Tie-in	P	2x2	EY	G48	550/500	7/12/10	Pass	
SR-188	T	23-Jun-10	S41/S42/Tie-in	P	2x2	EY	G48	550/500	7/12/10	Pass	
SR-189	WR	23-Jun-10	S47/S51 BOS+222	P	2.5x6	EY	G48	550/500	8/4/10	Pass	
SR-190	DS-61	23-Jun-10	S51/S52 BOS+300	P	2x70	EY	G48	550/500	8/4/10	Pass	
SR-191	ID	23-Jul-10	S53 BOP+480 MOP	P	1.5x1.5	EY	G48	550/500	7/26/10	Pass	
SR-192	WS	22-Jul-10	S53/S54 BOS+270	P	3x5	EY	G48	550/500	8/4/10	Pass	
SR-193	BO	21-Jul-10	S55/S56 BOS	P	1.5x4	EY	G48	500/500	7/21/10	Pass	
SR-194	DS-60	22-Jul-10	S47/S51 BOS+400	P	2x5	EY	G48	550/500	8/4/10	Pass	
SR-195	DS-62	22-Jul-10	S52/S53 BOS+200	P	2x4	EY	G48	550/500	8/4/10	Pass	
SR-196	DS-63	21-Jul-10	S53/S54 BOS+75	P	2x4	EY	G48	500/500	8/4/10	Pass	
SR-197	DS-64	21-Jul-10	S54/S55 BOS+130	P	2x6	EY	G48	500/500	8/4/10	Pass	
SR-198	DS-65	21-Jul-10	S55/S56 BOS+380	P	1.5x4	EY	G48	500/500	7/26/10	Pass	
SR-199	DS-66	23-Jul-10	S56/S57 BOS+465	P	2.5x4	EY	G48	550/500	7/26/10	Pass	

Se ndary Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-200	WD	21-Jul-10	S57 BOP+20 MOP	P	1.5x1.5	EY	G48	500/500	7/21/10	Pass	
SR-201	WR			Removed by Panels S-67 and S-68							S-67&S-68
SR-202	WS	20-Jul-10	S56/S57 BOS+290	CAP	2.5x20	EY	G48	500/450	7/20/10	Pass	
SR-203	WS	20-Jul-10	S56/S57 BOS+190	P	2x3.5	EY	G48	500/450	7/20/10	Pass	
SR-204	PT	21-Jul-10	S56/S57 BOS	P	3x7	EY	G48	500/500	7/21/10	Pass	
SR-205	PT	23-Jul-10	S53/S54 BOS+440	P	2x3	EY	G48	550/500	7/26/10	Pass	
SR-206	PT	21-Jul-10	S52/S53 BOS+35	P	2x2	EY	G48	500/500	8/4/10	Pass	
SR-207	PT	21-Jul-10	S52/S53 BOS+18	P	1.5x2	EY	G48	500/500	8/4/10	Pass	
SR-208	PT	21-Jul-10	S52/S53 BOS+9	P	2x2	EY	G48	500/500	8/4/10	Pass	
SR-209	T	23-Jul-10	S47/S50/S51	P	2x2.5	EY	G48	500/450	7/26/10	Pass	
SR-210	T	23-Jul-10	S50/S51/S52	P	2x2.5	EY	G48	500/450	7/26/10	Pass	
SR-211	T	23-Jul-10	S50/S52/S53	P	2.5x2.5	EY	G48	500/450	7/26/10	Pass	
SR-212	T	23-Jul-10	S50/S53/S54	P	2x2.5	EY	G48	500/450	7/26/10	Pass	
SR-213	T	23-Jul-10	S50/S54/S55	P	1x2	EY	G48	500/450	7/26/10	Pass	
SR-214	T	23-Jul-10	S50/S55/S56	P	2.5x2.5	EY	G48	500/450	7/26/10	Pass	
SR-215	T	23-Jul-10	S50/S56/S57	P	2.5x2.5	EY	G48	500/450	7/26/10	Pass	
SR-216	PT	22-Jul-10	S43/Tie-in BOS+9	P	3x3	EY	G48	550/500	8/4/10	Pass	
SR-217	ID	22-Jul-10	S43 BOP+9 12-ft East of West Edge	P	1x1	EY	G48	550/500	8/4/10	Pass	
SR-218	DS-67	23-Jul-10	S42/S50 BOS+220	P	2x4	EY	G48	500/450	7/26/10	Pass	
SR-219	IO	23-Jul-10	S51/S52 BOS+240	B	4-in	EY	G48	500/450	7/26/10	Pass	

Secondary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-220	ID	22-Jul-10	S43/Tie-in BOS+444	B	24-in	EY	G48	550/500	7/26/10	Pass	
SR-221	ID	22-Jul-10	S43/Tie-in BOS+462	P	1x1	EY	G48	550/500	7/26/10	Pass	
SR-222	ID	22-Jul-10	S43/Tie-in BOS+415	B	24-in	EY	G48	550/500	7/26/10	Pass	
SR-223	DS-68	23-Jul-10	SR-199/S56	P	2x4	EY	G48	500/450	7/26/10	Pass	
SR-224	WS	19-Aug-10	S57/S58 BOS+5	P	2.5x6	EY	G49	550/550	8/26/10	Pass	
SR-225	BO	11-Aug-10	S57/S58 BOS+80	P	1.5x2	EY	G49	550/550	8/26/10	Pass	
SR-226	DS-70	27-Jul-10	S57/S58 BOS+168	P	2x8	EY	G48	550/500	7/27/10	Pass	
SR-227	BO	27-Jul-10	S57/S58 BOS+245	P	2x2	EY	G48	550/500	7/27/10	Pass	
SR-228	BO			Capped by SR-234							SR-234
SR-229	BO	27-Jul-10	S57/S58 BOS+265	P	2x7	EY	G48	550/500	7/27/10	Pass	
SR-230	IO	27-Jul-10	S57/S58 BOS+280	B	12-in	EY	G48	550/500	7/27/10	Pass	
SR-231	WR	27-Jul-10	S58/S71 BOS to S59/S72 BOS+5	Cap	2.5x30	EY	G48	550/500	7/27/10	Pass	
SR-232	WS			Capped by SR-231							SR-231
SR-233	ID			Removed by Panel S-71							S-71
SR-234	DS-69	27-Jul-10	S58/S59 BOS+250	P	2x6	EY	G48	550/500	7/27/10	Pass	
SR-235	WR	27-Jul-10	S57/S58 BOS+290	P	2x6	EY	G48	550/500	7/27/10	Pass	
SR-236	DS-71			Removed by SR-241							SR-241
SR-237	T	4-Aug-10	S57/S58/S50	P	2.5x3	EY	G48	500/500	8/4/10	Pass	
SR-238	T	4-Aug-10	S58/S59/S50	P	2x4	EY	G48	500/500	8/4/10	Pass	
SR-239	BO			Capped by SR-250 (DS-72)							SR-250

S[illegible]ndary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-240	BO	4-Aug-10	S59/S60 BOS+390	P	2x3	EY	G48	550/500	8/12/10	Pass	
SR-241	ID	10-Aug-10	(S59/S60 BOS+300)/S72	Cap	10x30	EY	G49	550/550	8/25/10	Pass	
SR-242	BO	10-Aug-10	S59/S60 BOS+270	Cap	2x15	EY	G49	550/550	8/25/10	Pass	
SR-243	DS-74	10-Aug-10	S61/S62 BOS+245	P	2x5	EY	G49	550/550	8/26/10	Pass	
SR-244	DS-75	10-Aug-10	S62/S63 BOS+330	P	2x12	EY	G49	550/550	8/25/10	Pass	
SR-245	MD	4-Aug-10	S63 BOP+495 (2)	P	2.5x5 (2)	EY	G48	550/500	8/4/10	Pass	
SR-246	MD	4-Aug-10	S64 BOP+495	P	4x6	EY	G48	550/500	8/25/10	Pass	
SR-247	MD	4-Aug-10	S65 BOP+500	P	3x5	EY	G48	550/500	8/25/10	Pass	
SR-248	MD	4-Aug-10	S66 BOP+500	P	1x3	EY	G48	550/500	8/25/10	Pass	
SR-249	WS	11-Aug-10	S65/S66 BOS+218	P	2.5x2.5	EY	G49	550/550	8/26/10	Pass	
SR-250	DS-72	4-Aug-10	S59/S60 BOS+440	Cap	2x15	EY	G48	550/500	8/12/10	Pass	
SR-251	T	4-Aug-10	S50/S66/S65	P	2x2	EY	G48	550/500	8/4/10	Pass	
SR-252	T	4-Aug-10	S50/S65/S64	P	2x5	EY	G48	550/500	8/4/10	Pass	
SR-253	T	4-Aug-10	S50/S64/S63	P	4x5	EY	G48	550/500	8/4/10	Pass	
SR-254	T	4-Aug-10	S50/S63/S62	P	2x2	EY	G48	550/500	8/4/10	Pass	
SR-255	T	4-Aug-10	S50/S62/S61	P	3x3	EY	G48	550/500	8/4/10	Pass	
SR-256	T	4-Aug-10	S50/S61/S60	P	2x2	EY	G48	550/500	8/4/10	Pass	
SR-257	T	4-Aug-10	S50/S60/S59	P	5x10	EY	G48	550/500	8/4/10	Pass	
SR-258	DS-73	4-Aug-10	S60/S61 BOS+365	P	2x5	EY	G48	550/500	8/25/10	Pass	
SR-259	DS-76	11-Aug-10	S63/S64 BOS+50	P	2x5	EY	G49	550/550	8/26/10	Pass	

Secondary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-260	DS-77	11-Aug-10	S64/S65 BOS+135	P	2.5x5.5	EY	G49	550/550	8/26/10	Pass	
SR-261	DS-78	11-Aug-10	S65/S66 BOS+215	P	2.5x4.5	EY	G49	550/550	8/26/10	Pass	
SR-262	WR	7-Aug-10	S55/S56 BOS+270	P	2x11	EY	G48	550/500	8/7/10	Pass	
SR-263	WR	7-Aug-10	S56 BOP+270 MOP to S56/S57 BOS+280	P	2x11	EY	G48	550/500	8/9/10	Pass	
SR-264	T	7-Aug-10	S56/S68/S67	P	3x13	EY	G48	550/500	8/9/10	Pass	
SR-265	T	7-Aug-10	S67/S57/S71	CAP	3x11	EY	G48	500/500	8/9/10	Pass	
SR-266	ID	7-Aug-10	S58 BOP+285	P	1x1	EY	G48	500/500	8/9/10	Pass	
SR-267	T	7-Aug-10	SR-231/S71/S72	P	2x3	EY	G48	500/500	8/9/10	Pass	
SR-268	T	7-Aug-10	SR-231/S71/S67	P	1x1	EY	G48	500/500	8/9/10	Pass	
SR-269	T	7-Aug-10	S55/S56/S68	P	1x1	EY	G48	500/500	8/9/10	Pass	
SR-270	T	7-Aug-10	S55/S68/S69	P	1x1	EY	G48	500/500	8/9/10	Pass	
SR-271	T	7-Aug-10	S55/S68/S70	(2) P	2x2 & 1x1	EY	G48	500/500	8/9/10	Pass	
SR-272	ID	7-Aug-10	S54 BOP+315 MOP	Cap	2x35	EY	G48	500/500	8/9/10	Pass	
SR-273	T	7-Aug-10	(S53/S54 BOS+350)/S70	P	2x6	EY	G48	500/500	8/9/10	Pass	
SR-274	T	9-Aug-10	S69/S70/S54	P	1x2	EY	G49	550/550	8/9/10	Pass	
SR-275	T	9-Aug-10	S55/S55A/S69/S68/S78	P	2x6	EY	G49	550/550	8/9/10	Pass	
SR-276	T	9-Aug-10	S68/S78	P	2x2	EY	G49	550/550	8/9/10	Pass	
SR-277	T	9-Aug-10	S67/S68/S78	P	2x2	EY	G49	550/550	8/9/10	Pass	
SR-278	T	9-Aug-10	S67/S78 BOS+13	P	2x2	EY	G49	550/550	8/9/10	Pass	
SR-279	T	9-Aug-10	S67/S71/S78	P	1x2	EY	G49	550/550	8/9/10	Pass	

Secondary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-280	T	9-Aug-10	S71/S78	P	2x2	EY	G49	550/550	8/9/10	Pass	
SR-281	T	9-Aug-10	S71/S72/S78	P, B	2x2 , 24-in	EY	G49	550/550	8/9/10	Pass	
SR-282	T			Capped by SR-241							SR-241
SR-283	ID	25-Aug-10	S59WR/(S59 BOS+275)	P	3x4	EY	G49	550/500	8/26/10	Pass	
SR-284	T	9-Aug-10	(S58/S59 BOS+390)/S78	P	2x8	EY	G49	550/550	8/12/10	Pass	
SR-285	SI	9-Aug-10	S78 BOP+54 MOP+62 (Old Panel S58+430)	P	1x1	EY	G49	550/550	8/12/10	Pass	
SR-286	T	9-Aug-10	(S57/S58 BOS+440)/S78	P	3x6	EY	G49	550/550	8/12/10	Pass	
SR-287	T	9-Aug-10	(S57/S56 BOS+470)/S78	P	3x3	EY	G49	550/550	8/12/10	Pass	
SR-288	T	9-Aug-10	(S56/S55 BOS+425)/S78	P	3x4	EY	G49	550/550	8/12/10	Pass	
SR-289	T	9-Aug-10	(S55/S54 BOS+420)/S55A/S78	P	3x5	EY	G49	550/550	8/12/10	Pass	
SR-290	T	9-Aug-10	S55/S55A/(S78 BOS+20)	P	3x4	EY	G49	550/550	8/12/10	Pass	
SR-291	Wtr Bottle	9-Aug-10	S78 BOP+38 (Old Panel S58 BOP+415) MOP	P	2x2	EY	G49	550/550	8/12/10	Pass	
SR-292	ID	9-Aug-10	S69 BOP+11 MOP	P	1x1	EY	G49	550/550	8/9/10	Pass	
SR-293	SI	9-Aug-10	S67 MOP (20' N. of S67/S78, 12' W. of S67/S72)	P	1x1	EY	G49	550/550	8/9/10	Pass	
SR-294	DS-79	9-Aug-10	S78/S72 BOS	P	2x7	EY	G49	550/550	8/9/10	Pass	
SR-295	DS-80	9-Aug-10	S78/S57 BOS+12	P	2x5	EY	G49	550/550	8/12/10	Pass	
SR-296	SI	9-Aug-10	S78 BOP+10 MOP+47 (Old Panel S57+410)	P	(2) 1x1	EY	G49	550/550	8/9/10	Pass	
SR-297	ID	9-Aug-10	S78 BOP+30 MOP+38 (Old Panel S57+430)	P	2x8	EY	G49	550/550	8/12/10	Pass	
SR-298	ID	9-Aug-10	S78 BOP+40 MOP+33 (Old Panel S57+440)	B	6-in	EY	G49	550/550	8/12/10	Pass	
SR-299	ID	9-Aug-10	S78/S58 BOS+12	P	2x2	EY	G49	550/550	8/12/10	Pass	

Se__ndary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-300	ID	10-Aug-10	S60 BOS+350 MOP on S78	P	2x2	EY	G49	550/550	8/25/10	Pass	
SR-301	ID	10-Aug-10	S60 OBS+335 MOP & S61 BOS+335 MOP	P	(2) 2x2	EY	G49	550/550	8/25/10	Pass	
SR-302	ID	10-Aug-10	S60 BOP+300	B	144-in	EY	G49	550/550	8/25/10	Pass	
SR-303	ID	10-Aug-10	S63 BOP+300 MOP	P	2x2	EY	G49	550/550	8/25/10	Pass	
SR-304	ID	10-Aug-10	S65 BOP+290 MOP	B	180-in	EY	G49	550/550	8/25/10	Pass	
SR-305	ID	10-Aug-10	S66 BOP+325 MOP	P	3x8	EY	G49	550/550	8/25/10	Pass	
SR-306	ID	10-Aug-10	S66 BOP+335 MOP (2)	B	(2) 6-in	EY	G49	550/550	8/25/10	Pass	
SR-307	SB	7-Aug-10	S64 BOP+275 MOP	P	2x5	EY	G48	550/500	8/25/10	Pass	
SR-308	ID	10-Aug-10	S63 BOP+300 MOP (3)	P & B	2x5 & (2) 4-in	EY	G49	550/550	8/25/10	Pass	
SR-309	ID	10-Aug-10	(S60/S59 BOS+365)/S72/S74	P	8x12	EY	G49	550/550	8/12/10	Pass	
SR-310	ID	10-Aug-10	S74/S60 BOS+10	B	12-in	EY	G49	550/550	8/25/10	Pass	
SR-311	ID	10-Aug-10	S74/S60 BOS+25	P	(2) 2x2	EY	G49	550/550	8/25/10	Pass	
SR-312	T	10-Aug-10	S60/S61/S73 (2)	P	(2) 2x2	EY	G49	550/550	8/25/10	Pass	
SR-313	T	10-Aug-10	S61/S62/S73 (2)	P	(2) 2x2	EY	G49	550/550	8/25/10	Pass	
SR-314	T	10-Aug-10	S62/S63/S73 (2)	P	(2) 2x2	EY	G49	550/550	8/25/10	Pass	
SR-315	T	10-Aug-10	S63/S64/S73 (2)	P	(2) 2x2	EY	G49	550/550	8/25/10	Pass	
SR-316	T	10-Aug-10	S64/S65/S73 (2)	P	(2) 2x2	EY	G49	550/550	8/25/10	Pass	
SR-317	T	10-Aug-10	S65/S66/S73	P	2x2	EY	G49	550/550	8/25/10	Pass	
SR-318	T	10-Aug-10	S62/S63/S75	P	4x4	EY	G49	550/550	8/25/10	Pass	
SR-319	T	10-Aug-10	S65/S66/S73	P	1.5x2	EY	G49	550/550	8/25/10	Pass	

Se ndary Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Installer: S013213A00

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
SR-320	T	10-Aug-10	S66/S73/S76	P	3x5	EY	G49	550/550	8/25/10	Pass	
SR-321	T	16-Aug-10	S50/S66/S76	P	1.5x1.5	EY	G49	550/550	8/25/10	Pass	
SR-322	T	16-Aug-10	S50/S76/S77	P	1.5x1.5	EY	G49	550/550	8/25/10	Pass	
SR-323	DS-81	16-Aug-10	S66/S76 BOS+325	P	2x4.5	EY	G49	550/550	8/25/10	Pass	
SR-324	DS-82	16-Aug-10	S76/S77 BOS+450	P	2x4	EY	G49	550/550	8/25/10	Pass	
SR-325	DS-83	16-Aug-10	S66/SR-305	P	2x4.5	EY	G49	550/550	8/25/10	Pass	
SR-326	ID	24-Aug-10	S77 BOS+410	P	1x1	EY	G49	550/550	8/25/10	Pass	
SR-327	ID	25-Aug-10	S62 BOS+340	P	2x2	EY	G49	550/500	8/25/10	Pass	
SR-328	WR	25-Aug-10	(S59 BOP+190)/S59WR	P	2x3	EY	G49	550/500	8/25/10	Pass	
SR-329	WR	25-Aug-10	S54 BOS+15 (2)	P	2x2 & 2x4	EY	G49	550/500	8/26/10	Pass	
SR-330	WR	25-Aug-10	(S57 BOS+275)/S57WR	P	2x3	EY	G49	550/500	8/26/10	Pass	
SR-331	IO	25-Aug-10	S58/S59 BOS+280	B	12-in	EY	G49	550/500	8/26/10	Pass	
SR-332	ID	3-Sep-10	S57 BOS+270 MOP	P	1.5x1.5	EY	G49	500/500	9/3/10	Pass	
SR-333	ID	3-Sep-10	Repair on SR-264 Water evacuation repair	P	1.5x1.5	EY	G49	500/500	9/3/10	Pass	
SR-334	BS	10-Sep-10	Lysimeter Pipe Boot	Boot	3x3	EY	G49	550/550	9/10/10	Spark Pass	

F.2.4

SECONDARY GEOMEMBRANE SEAM DESTRUCTIVE SAMPLE LOG

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S1/S2	SR-005	6/11/10	RML	135	SE-1	129	SE-1	Pass	173	BRK	Pass
				135	SE-1	147	SE-1	Pass	170	BRK	Pass
Sample Number:		**DS-01**		145	SE-1	137	SE-1	Pass	155	BRK	Pass
Comments:				140	SE-1	146	SE-1	Pass	194	BRK	Pass
				141	SE-1	121	SE-1	Pass	175	BRK	Pass
S2/S3	SR-006	6/14/10	LH	134	SE-1	129	SE-1	Pass	164	BRK	Pass
				144	SE-1	132	SE-1	Pass	182	BRK	Pass
Sample Number:		**DS-02**		147	SE-1	133	SE-1	Pass	179	BRK	Pass
Comments:				159	SE-1	136	SE-1	Pass	182	BRK	Pass
				146	SE-1	132	SE-1	Pass	179	BRK	Pass
S2/S3	SR-007	6/14/10	LH	131	SE-1	133	SE-1	Pass	171	BRK	Pass
				144	SE-1	137	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-03**		137	SE-1	120	SE-1	Pass	172	BRK	Pass
Comments:				133	SE-1	128	SE-1	Pass	178	BRK	Pass
				144	SE-1	142	SE-1	Pass	181	BRK	Pass
S1/S2	SR-008	6/11/10	RML	144	SE-1	142	SE-1	Pass	178	BRK	Pass
				147	SE-1	135	SE-1	Pass	184	BRK	Pass
Sample Number:		**DS-04**		148	SE-1	150	SE-1	Pass	171	BRK	Pass
Comments:				138	SE-1	146	SE-1	Pass	178	BRK	Pass
				139	SE-1	141	SE-1	Pass	186	BRK	Pass
S3/S4	SR-012	6/14/10	LH	128	SE-1	132	SE-1	Pass	168	BRK	Pass
				134	SE-1	1321	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-05**		130	SE-1	130	SE-1	Pass	170	BRK	Pass
Comments:				150	SE-1	128	SE-1	Pass	181	BRK	Pass
				141	SE-1	150	SE-1	Pass	172	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S4/S5	SR-013	6/14/10	LH	127	SE-1	123	SE-1	Pass	168	BRK	Pass
				143	SE-1	129	SE-1	Pass	176	BRK	Pass
Sample Number:		**DS-06**		127	SE-1	122	SE-1	Pass	166	BRK	Pass
Comments:				141	SE-1	134	SE-1	Pass	177	BRK	Pass
				132	SE-1	126	SE-1	Pass	177	BRK	Pass
Tie-in/S1	SR-014	6/15/10	LH	148	SE-1	163	SE-1	Pass	180	BRK	Pass
				128	SE-1	156	SE-1	Pass	176	BRK	Pass
Sample Number:		**DS-07**		159	SE-1	153	SE-1	Pass	184	BRK	Pass
Comments:				144	SE-1	154	SE-1	Pass	181	BRK	Pass
				150	SE-1	157	SE-1	Pass	177	BRK	Pass
S5/S6	SR-018	6/15/10	LH	126	SE-1	136	SE-1	Pass	183	BRK	Pass
				134	SE-1	132	SE-1	Pass	178	BRK	Pass
Sample Number:		**DS-08**		127	SE-1	140	SE-1	Pass	179	BRK	Pass
Comments:				125	SE-1	127	SE-1	Pass	177	BRK	Pass
				121	SE-1	128	SE-1	Pass	179	BRK	Pass
S1/Tie-in	SR-024	6/15/10	LH	136	SE-1	163	SE-1	Pass	181	BRK	Pass
				138	SE-1	151	SE-1	Pass	178	BRK	Pass
Sample Number:		**DS-09**		146	SE-1	146	SE-1	Pass	182	BRK	Pass
Comments:				131	SE-1	135	SE-1	Pass	179	BRK	Pass
				134	SE-1	158	SE-1	Pass	175	BRK	Pass
S6/S7	SR-026	6/15/10	LH	146	SE-1	131	SE-1	Pass	181	BRK	Pass
				145	SE-1	125	SE-1	Pass	177	BRK	Pass
Sample Number:		**DS-10**		142	SE-1	121	SE-1	Pass	181	BRK	Pass
Comments:				141	SE-1	128	SE-1	Pass	176	BRK	Pass
				154	SE-1	124	SE-1	Pass	179	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S8/S9	SR-027	6/16/10	LH	126	SE-1	139	SE-1	Pass	182	BRK	Pass
				123	SE-1	124	SE-1	Pass	177	BRK	Pass
Sample Number:		**DS-11**		137	SE-1	128	SE-1	Pass	182	BRK	Pass
Comments:				127	SE-1	124	SE-1	Pass	179	BRK	Pass
				135	SE-1	120	SE-1	Pass	175	BRK	Pass
S7/S8	SR-029	6/16/10	LH	156	SE-1	142	SE-1	Pass	175	BRK	Pass
				141	SE-1	126	SE-1	Pass	172	BRK	Pass
Sample Number:		**DS-12**		145	SE-1	136	SE-1	Pass	176	BRK	Pass
Comments:				156	SE-1	131	SE-1	Pass	170	BRK	Pass
				140	SE-1	137	SE-1	Pass	171	BRK	Pass
S9/S10	SR-040	6/18/10	LH	149	SE-1	133	SE-1	Pass	183	BRK	Pass
				129	SE-1	127	SE-1	Pass	181	BRK	Pass
Sample Number:		**DS-13**		139	SE-1	146	SE-1	Pass	182	BRK	Pass
				140	SE-1	126	SE-1	Pass	181	BRK	Pass
				137	SE-1	130	SE-1	Pass	183	BRK	Pass
S10/S11	SR-041	6/18/10	LH	132	SE-1	138	SE-1	Pass	185	BRK	Pass
				141	SE-1	127	SE-1	Pass	185	BRK	Pass
Sample Number:		**DS-14**		120	SE-1	130	SE-1	Pass	184	BRK	Pass
Comments:				125	SE-1	144	SE-1	Pass	181	BRK	Pass
				127	SE-1	139	SE-1	Pass	180	BRK	Pass
S11/S12	SR-042	6/18/10	LH	128	SE-1	121	SE-1	Pass	186	BRK	Pass
				131	SE-1	124	SE-1	Pass	185	BRK	Pass
Sample Number:		**DS-15**		123	SE-1	124	SE-1	Pass	187	BRK	Pass
Comments:				118	SE-1	123	SE-1	Pass	187	BRK	Pass
				122	SE-1	110	AD-BRK 10%	Pass	187	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No.: S013213A00
Installer: ESI

Material: 0
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S12/S13	SR-043	6/18/10	LH	137	SE-1	126	SE-1	Pass	180	BRK	Pass
				126	SE-1	125	SE-1	Pass	182	BRK	Pass
Sample Number:		**DS-16**		132	SE-1	127	SE-1	Pass	184	BRK	Pass
Comments:				133	SE-1	130	SE-1	Pass	183	BRK	Pass
				129	SE-1	123	SE-1	Pass	185	BRK	Pass
S13/S14	SR-044	6/18/10	LH	128	SE-1	149	SE-1	Pass	183	BRK	Pass
				136	SE-1	139	SE-1	Pass	184	BRK	Pass
Sample Number:		**DS-17**		129	SE-1	151	SE-1	Pass	185	BRK	Pass
Comments:				128	SE-1	154	SE-1	Pass	184	BRK	Pass
				135	SE-1	154	SE-1	Pass	185	BRK	Pass
S14/S15	SR-045	6/18/10	LH	130	SE-1	133	SE-1	Pass	182	BRK	Pass
				109	SE-1	132	SE-1	Pass	185	BRK	Pass
Sample Number:		**DS-18**		133	SE-1	147	SE-1	Pass	185	BRK	Pass
Comments:				154	SE-1	135	SE-1	Pass	182	BRK	Pass
				126	SE-1	131	SE-1	Pass	186	BRK	Pass
S15/S16	SR-046	6/18/10	LH	128	SE-1	131	SE-1	Pass	187	BRK	Pass
				109	SE-1	142	SE-1	Pass	181	BRK	Pass
Sample Number:		**DS-19**		134	SE-1	154	SE-1	Pass	183	BRK	Pass
Comments:				144	SE-1	120	AD-BRK 10%	Pass	182	BRK	Pass
				123	SE-1	137	SE-1	Pass	178	BRK	Pass
S16/S17	SR-047	6/18/10	LH	136	SE-1	134	SE-1	Pass	186	BRK	Pass
				124	SE-1	131	SE-1	Pass	181	BRK	Pass
Sample Number:		**DS-20**		126	SE-1	131	SE-1	Pass	185	BRK	Pass
Comments:				132	SE-1	129	SE-1	Pass	184	BRK	Pass
				124	SE-1	124	SE-1	Pass	184	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S17/S18	SR-048	6/18/10	LH	139	SE-1	138	SE-1	Pass	187	BRK	Pass
				134	SE-1	126	SE-1	Pass	185	BRK	Pass
Sample Number:		**DS-21**		133	SE-1	128	SE-1	Pass	180	BRK	Pass
Comments:				133	SE-1	120	SE-1	Pass	186	BRK	Pass
				138	SE-1	128	SE-1	Pass	186	BRK	Pass
S18/S19	SR-049	6/21/10	TW	129	SE-1	138	SE-1	Pass	187	BRK	Pass
				137	SE-1	144	SE-1	Pass	187	BRK	Pass
Sample Number:		**DS-22**		135	SE-1	131	SE-1	Pass	184	BRK	Pass
Comments:				122	SE-1	139	SE-1	Pass	184	BRK	Pass
				139	SE-1	141	SE-1	Pass	187	BRK	Pass
S19/S20	SR-057	6/21/10	TW	141	SE-1	171	SE-1	Pass	179	BRK	Pass
				149	SE-1	152	SE-1	Pass	181	BRK	Pass
Sample Number:		**DS-23**		120	AD	138	SE-1	Fail	183	BRK	Pass
Comments:	Seam Failed			142	SE-1	162	SE-1	Pass	182	BRK	Pass
				132	SE-1	154	SE-1	Pass	184	BRK	Pass
S19/S20	SR-104	6/21/10	TW	140	SE-1	125	SE-1	Pass	181	BRK	Pass
				152	SE-1	128	SE-1	Pass	179	BRK	Pass
Sample Number:		**DS-23A**		151	SE-1	137	SE-1	Pass	183	BRK	Pass
Comments:				135	SE-1	121	SE-1	Pass	182	BRK	Pass
				135	SE-1	120	SE-1	Pass	186	BRK	Pass
S19/S20	SR-105	6/21/10	TW	150	SE-1	165	SE-1	Pass	179	BRK	Pass
				145	SE-1	148	SE-1	Pass	183	BRK	Pass
Sample Number:		**DS-23B**		144	SE-1	152	SE-1	Pass	183	BRK	Pass
Comments:				130	SE-1	149	SE-1	Pass	181	BRK	Pass
				147	SE-1	150	SE-1	Pass	181	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S20/S21	SR-058	6/21/10	LH	130	SE-1	130	SE-1	Pass	188	BRK	Pass
				131	SE-1	125	SE-1	Pass	184	BRK	Pass
Sample Number:		**DS-24**		137	SE-1	133	SE-1	Pass	189	BRK	Pass
Comments:				137	SE-1	125	SE-1	Pass	187	BRK	Pass
				125	SE-1	123	SE-1	Pass	184	BRK	Pass
S21/S22	SR-059	6/21/10	LH	145	SE-1	128	SE-1	Pass	186	BRK	Pass
				132	SE-1	126	SE-1	Pass	186	BRK	Pass
Sample Number:		**DS-25**		117	SE-1	128	SE-1	Pass	184	BRK	Pass
Comments:				125	SE-1	159	SE-1	Pass	184	BRK	Pass
				126	SE-1	125	SE-1	Pass	183	BRK	Pass
S10/S23	SR-089	6/21/10	LH	155	SE-1	163	SE-1	Pass	163	BRK	Pass
				162	SE-1	152	SE-1	Pass	178	BRK	Pass
Sample Number:		**DS-26**		153	SE-1	119	SE-1	Pass	180	BRK	Pass
Comments:				153	SE-1	160	SE-1	Pass	181	BRK	Pass
				142	SE-1	134	AD-BRK 10%	Pass	180	BRK	Pass
S23/S25	SR-090	6/21/10	LH	145	SE-1	144	SE-1	Pass	184	BRK	Pass
				137	SE-1	146	SE-1	Pass	184	BRK	Pass
Sample Number:		**DS-27**		117	SE-1	140	SE-1	Pass	183	BRK	Pass
Comments:				123	SE-1	139	SE-1	Pass	182	BRK	Pass
				146	AD-BRK 10%	146	SE-1	Pass	184	BRK	Pass
S25/S26	SR-092	6/21/10	LH	156	SE-1	142	SE-1	Pass	170	BRK	Pass
				156	SE-1	138	SE-1	Pass	181	BRK	Pass
Sample Number:		**DS-28**		161	SE-1	142	SE-1	Pass	183	BRK	Pass
Comments:				153	SE-1	129	SE-1	Pass	181	BRK	Pass
				161	SE-1	141	SE-1	Pass	182	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S26/S27	SR-093	6/21/10	LH	160	SE-1	128	AD-BRK 10%	Pass	183	BRK	Pass
				150	SE-1	136	SE-1	Pass	185	BRK	Pass
Sample Number:		**DS-29**		159	SE-1	140	SE-1	Pass	185	BRK	Pass
Comments:				161	SE-1	136	SE-1	Pass	183	BRK	Pass
				148	SE-1	139	SE-1	Pass	183	BRK	Pass
S27/S28	SR-095	6/21/10	LH	150	SE-1	140	SE-1	Pass	185	BRK	Pass
				153	SE-1	139	SE-1	Pass	185	BRK	Pass
Sample Number:		**DS-30**		130	SE-1	140	SE-1	Pass	184	BRK	Pass
Comments:				157	SE-1	135	SE-1	Pass	185	BRK	Pass
				145	SE-1	140	SE-1	Pass	186	BRK	Pass
S28/S29	SR-096	6/21/10	LH	170	SE-1	150	SE-1	Pass	195	BRK	Pass
				152	SE-1	145	SE-1	Pass	189	BRK	Pass
Sample Number:		**DS-31**		172	SE-1	143	SE-1	Pass	194	BRK	Pass
Comments:				154	SE-1	141	SE-1	Pass	193	BRK	Pass
				163	SE-1	148	SE-1	Pass	196	BRK	Pass
S29/S30	SR-097	6/21/10	LH	145	SE-1	151	SE-1	Pass	185	BRK	Pass
				144	SE-1	148	SE-1	Pass	186	BRK	Pass
Sample Number:		**DS-32**		150	SE-1	151	SE-1	Pass	184	BRK	Pass
Comments:				147	SE-1	150	SE-1	Pass	182	BRK	Pass
				146	SE-1	149	SE-1	Pass	184	BRK	Pass
S1/Tie-in	SR-098	6/21/10	LH	117	SE-3			Pass	178	BRK	Pass
				121	SE-3			Pass	181	BRK	Pass
Sample Number:		**DS-33**		120	AD-BRK 10%			Pass	184	BRK	Pass
Comments:	Extrusion Weld			136	SE-3			Pass	182	BRK	Pass
				142	SE-3			Pass	182	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
SR-049/S18	SR-100	6/21/10	LH	149	SE-3			Pass	186	BRK	Pass
				138	SE-3			Pass	183	BRK	Pass
Sample Number:		**DS-34**		135	SE-3			Pass	181	BRK	Pass
Comments:	Extrusion Weld			146	SE-3			Pass	186	BRK	Pass
				144	SE-3			Pass	184	BRK	Pass
SR-044/S13	SR-101	6/21/10	LH	160	SE-3			Pass	185	BRK	Pass
				157	SE-3			Pass	184	BRK	Pass
Sample Number:		**DS-35**		159	SE-3			Pass	187	BRK	Pass
Comments:	Extrusion Weld			161	SE-3			Pass	183	BRK	Pass
				161	AD-BRK 10%			Pass	180	BRK	Pass
SR-027/S9	SR-102	6/21/10	LH	147	SE-3			Pass	176	BRK	Pass
				144	SE-3			Pass	174	BRK	Pass
Sample Number:		**DS-36**		148	SE-3			Pass	175	BRK	Pass
Comments:	Extrusion Weld			140	SE-3			Pass	174	BRK	Pass
				139	SE-3			Pass	173	BRK	Pass
S30/S31	SR-106	6/22/10	LH	141	SE-1	140	SE-1	Pass	178	BRK	Pass
				137	SE-1	143	SE-1	Pass	177	BRK	Pass
Sample Number:		**DS-37**		144	SE-1	152	SE-1	Pass	178	BRK	Pass
Comments:				143	SE-1	143	SE-1	Pass	178	BRK	Pass
				138	SE-1	139	SE-1	Pass	171	BRK	Pass
S31/S32	SR-107	6/22/10	LH	151	SE-1	146	SE-1	Pass	183	BRK	Pass
				141	SE-1	138	SE-1	Pass	181	BRK	Pass
Sample Number:		**DS-38**		160	SE-1	147	SE-1	Pass	183	BRK	Pass
Comments:				143	SE-1	139	SE-1	Pass	182	BRK	Pass
				141	SE-1	136	SE-1	Pass	181	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S32/S33	SR-108	6/22/10	LH	158	SE-1	142	SE-1	Pass	176	BRK	Pass
				149	SE-1	152	SE-1	Pass	174	BRK	Pass
Sample Number:		**DS-39**		147	SE-1	144	SE-1	Pass	176	BRK	Pass
Comments:				144	SE-1	143	SE-1	Pass	173	BRK	Pass
				148	SE-1	147	SE-1	Pass	175	BRK	Pass
S33/S34	SR-109	6/22/10	LH	147	SE-1	123	SE-1	Pass	179	BRK	Pass
				156	SE-1	126	SE-1	Pass	179	BRK	Pass
Sample Number:		**DS-40**		159	SE-1	141	SE-1	Pass	179	BRK	Pass
Comments:				147	SE-1	135	SE-1	Pass	179	BRK	Pass
				166	AD-BRK 10%	131	SE-1	Pass	176	BRK	Pass
S34/S35	SR-110	6/22/10	LH	135	SE-1	135	SE-1	Pass	174	BRK	Pass
				144	SE-1	135	SE-1	Pass	173	BRK	Pass
Sample Number:		**DS-41**		143	SE-1	139	SE-1	Pass	174	BRK	Pass
Comments:				142	SE-1	138	SE-1	Pass	174	BRK	Pass
				139	SE-1	133	SE-1	Pass	173	BRK	Pass
SR89/S10	SR-124	6/23/10	LH	99	SE-3			Pass	175	BRK	Pass
				102	SE-3			Pass	174	BRK	Pass
Sample Number:		**DS-42**		97	SE-3			Pass	183	BRK	Pass
Comments:	Extrusion Weld			99	SE-3			Pass	182	BRK	Pass
				94	SE-3			Pass	182	BRK	Pass
SR-107/S31	SR-125	6/23/10	LH	123	SE-3			Pass	174	BRK	Pass
				118	SE-3			Pass	174	BRK	Pass
Sample Number:		**DS-43**		145	SE-3			Pass	169	BRK	Pass
Comments:	Extrusion Weld			121	SE-3			Pass	170	BRK	Pass
				106	SE-3			Pass	171	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-2

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No.: S013213A00
Installer: ESI

Material: 0
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
SR-100/S18	SR-126	6/23/10	LH	135	SE-3			Pass	181	BRK	Pass
				144	SE-3			Pass	179	BRK	Pass
Sample Number:		**DS-44**		140	SE-3			Pass	180	BRK	Pass
Comments:	Extrusion Weld			127	SE-3			Pass	179	BRK	Pass
				123	SE-3			Pass	178	BRK	Pass
S35/S36	SR-129	6/23/10	LH	145	SE-1	128	SE-1	Pass	190	BRK	Pass
				134	SE-1	144	SE-1	Pass	188	BRK	Pass
Sample Number:		**DS-45**		130	SE-1	123	SE-1	Pass	189	BRK	Pass
Comments:				133	SE-1	123	SE-1	Pass	188	BRK	Pass
				134	SE-1	124	AD-BRK 10%	Pass	188	BRK	Pass
S36/S37	SR-130	6/23/10	LH	139	SE-1	141	SE-1	Pass	187	BRK	Pass
				149	SE-1	128	SE-1	Pass	185	BRK	Pass
Sample Number:		**DS-46**		119	SE-1	148	SE-1	Pass	188	BRK	Pass
Comments:				119	SE-1	123	SE-1	Pass	184	BRK	Pass
				133	SE-1	148	SE-1	Pass	187	BRK	Pass
S37/S38	SR-131	6/23/10	LH	132	SE-1	146	SE-1	Pass	174	BRK	Pass
				110	SE-1	139	SE-1	Pass	176	BRK	Pass
Sample Number:		**DS-47**		136	SE-1	148	SE-1	Pass	176	BRK	Pass
Comments:				131	SE-1	133	SE-1	Pass	174	BRK	Pass
				141	SE-1	139	SE-1	Pass	175	BRK	Pass
S38/S39	SR-132	6/23/10	LH	135	SE-1	129	SE-1	Pass	182	BRK	Pass
				146	SE-1	126	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-48**		141	SE-1	154	SE-1	Pass	181	BRK	Pass
Comments:				155	SE-1	136	SE-1	Pass	179	BRK	Pass
				136	SE-1	140	SE-1	Pass	181	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING, INC.

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S39/S40	SR-133	6/23/10	LH	143	SE-1	142	SE-1	Pass	180	BRK	Pass
				150	SE-1	136	SE-1	Pass	178	BRK	Pass
Sample Number:		**DS-49**		146	SE-1	142	SE-1	Pass	181	BRK	Pass
Comments:				145	SE-1	130	SE-1	Pass	179	BRK	Pass
				142	SE-1	128	SE-1	Pass	177	BRK	Pass
S40/S41	SR-134	6/23/10	LH	144	SE-1	138	SE-1	Pass	185	BRK	Pass
				150	SE-1	150	SE-1	Pass	184	BRK	Pass
Sample Number:		**DS-50**		147	SE-1	135	SE-1	Pass	183	BRK	Pass
Comments:				136	SE-1	136	SE-1	Pass	183	BRK	Pass
				147	SE-1	143	SE-1	Pass	183	BRK	Pass
S41/S42	SR-135	6/23/10	LH	147	SE-1	138	SE-1	Pass	180	BRK	Pass
				139	SE-1	135	SE-1	Pass	176	BRK	Pass
Sample Number:		**DS-51**		148	SE-1	151	SE-1	Pass	177	BRK	Pass
Comments:				141	SE-1	137	SE-1	Pass	177	BRK	Pass
				145	SE-1	139	SE-1	Pass	176	BRK	Pass
SR-134/S41	SR-145	6/24/10	LH	144	SE-3			Pass	176	BRK	Pass
				147	SE-3			Pass	175	BRK	Pass
Sample Number:		**DS-52**		157	SE-3			Pass	176	BRK	Pass
Comments:	Extrusion Weld			142	SE-3			Pass	176	BRK	Pass
				144	SE-3			Pass	175	BRK	Pass
SR-148/S18	SR-149	6/24/10	LH	137	SE-3			Pass	171	BRK	Pass
				144	SE-3			Pass	168	BRK	Pass
Sample Number:		**DS-53**		133	SE-3			Pass	172	BRK	Pass
Comments:	Extrusion Weld			115	SE-3			Pass	169	BRK	Pass
				137	SE-3			Pass	163	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S43/S44	SR-160	7/24/10	TW	137	SE-1	131	SE-1	Pass	180	BRK	Pass
				132	SE-1	131	SE-1	Pass	178	BRK	Pass
Sample Number:		**DS-54**		135	SE-1	126	SE-1	Pass	180	BRK	Pass
Comments:				126	SE-1	133	SE-1	Pass	182	BRK	Pass
				126	SE-1	122	SE-1	Pass	180	BRK	Pass
SR-161/S6	SR-162	6/30/10	LH	142	SE-3			Pass	179	BRK	Pass
				136	SE-3			Pass	178	BRK	Pass
Sample Number:		**DS-55**		167	SE-3			Pass	178	BRK	Pass
Comments:	Extrusion Weld			126	SE-3			Pass	179	BRK	Pass
				157	SE-3			Pass	174	BRK	Pass
S44/S45	SR-165	7/26/10	TW	141	SE-1	148	SE-1	Pass	182	BRK	Pass
				127	SE-1	127	SE-1	Pass	186	BRK	Pass
Sample Number:		**DS-56**		136	SE-1	127	SE-1	Pass	180	BRK	Pass
Comments:				136	SE-1	118	SE-1	Pass	179	BRK	Pass
				122	SE-1	139	SE-1	Pass	179	BRK	Pass
S46/S47	SR-166	7/22/10	RS	135	SE-1	135	SE-1	Pass	178	BRK	Pass
				131	SE-1	120	SE-1	Pass	178	BRK	Pass
Sample Number:		**DS-57**		132	SE-1	126	SE-1	Pass	181	BRK	Pass
Comments:				128	SE-1	118	SE-1	Pass	177	BRK	Pass
				130	SE-1	119	SE-1	Pass	180	BRK	Pass
S45/S46	SR-167	7/22/10	RS	151	SE-1	154	SE-1	Pass	175	BRK	Pass
				141	SE-1	134	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-58**		141	SE-1	124	SE-1	Pass	184	BRK	Pass
Comments:				129	SE-1	106	SE-1	Pass	180	BRK	Pass
				140	SE-1	120	SE-1	Pass	181	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
Tie-in/S43	SR-168	7/22/10	LH/RS	143	SE-1	140	SE-1	Pass	189	BRK	Pass
				151	SE-1	133	SE-1	Pass	186	BRK	Pass
Sample Number:		**DS-59**		149	SE-1	152	SE-1	Pass	187	BRK	Pass
Comments:				148	SE-1	135	SE-1	Pass	188	BRK	Pass
				160	SE-1	138	SE-1	Pass	190	BRK	Pass
S47/S51	SR-194	7/24/10	TW	134	SE-1	134	SE-1	Pass	183	BRK	Pass
				133	SE-1	126	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-60**		142	SE-1	131	SE-1	Pass	184	BRK	Pass
Comments:				131	SE-1	120	SE-1	Pass	181	BRK	Pass
				128	SE-1	155	SE-1	Pass	184	BRK	Pass
S51/S52	SR-190	7/20/10	RS/TW	124	SE-1	125	SE-1	Pass	176	BRK	Pass
				126	SE-1	125	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-61**		110	SE-1	121	SE-1	Pass	170	BRK	Pass
Comments:				101	SE-1	130	SE-1	Pass	179	BRK	Pass
				113	SE-1	132	SE-1	Pass	179	BRK	Pass
S52/S53	SR-195	7/24/10	TW	150	SE-1	148	SE-1	Pass	181	BRK	Pass
				150	SE-1	147	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-62**		149	SE-1	153	SE-1	Pass	182	BRK	Pass
Comments:				142	SE-1	156	SE-1	Pass	181	BRK	Pass
				135	SE-1	153	SE-1	Pass	183	BRK	Pass
S53/S54	SR-196	7/22/10	RS/LH	146	SE-1	114	SE-1	Pass	178	BRK	Pass
				145	SE-1	120	SE-1	Pass	175	BRK	Pass
Sample Number:		**DS-63**		139	SE-1	135	SE-1	Pass	185	BRK	Pass
Comments:				131	SE-1	139	SE-1	Pass	183	BRK	Pass
				140	SE-1	121	SE-1	Pass	184	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S54/S55	SR-197	7/20/10	RS/TW	158	SE-1	136	SE-1	Pass	174	BRK	Pass
				147	SE-1	134	SE-1	Pass	171	BRK	Pass
Sample Number:		**DS-64**		140	SE-1	140	SE-1	Pass	178	BRK	Pass
Comments:				152	SE-1	136	SE-1	Pass	174	BRK	Pass
				147	SE-1	151	SE-1	Pass	173	BRK	Pass
S55/S56	SR198	7/20/10	TW	147	SE-1	127	SE-1	Pass	175	BRK	Pass
				140	SE-1	149	SE-1	Pass	177	BRK	Pass
Sample Number:		**DS-65**		143	SE-1	128	SE-1	Pass	174	BRK	Pass
Comments:				136	SE-1	142	SE-1	Pass	174	BRK	Pass
				140	SE-1	132	SE-1	Pass	170	BRK	Pass
S56/S57	SR-199	7/20/10	TW	115	SE-1	135	SE-1	Pass	182	BRK	Pass
				119	SE-1	123	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-66**		128	SE-1	119	SE-1	Pass	178	BRK	Pass
Comments:				124	SE-1	121	SE-1	Pass	178	BRK	Pass
				127	SE-1	124	SE-1	Pass	175	BRK	Pass
S42/S50	SR-218	7/24/10	TW	146	SE-1	140	SE-1	Pass	182	BRK	Pass
				144	SE-1	155	SE-1	Pass	181	BRK	Pass
Sample Number:		**DS-67**		141	SE-1	148	SE-1	Pass	185	BRK	Pass
Comments:				136	SE-1	135	SE-1	Pass	181	BRK	Pass
				145	SE-1	145	SE-1	Pass	184	BRK	Pass
SR-199/S56	SR-223	7/23/10	TW	141	SE-3			Pass	182	BRK	Pass
				154	SE-3			Pass	160	SE-2	Pass
Sample Number:		**DS-68**		136	SE-3			Pass	182	BRK	Pass
Comments:	Extrusion Weld			145	SE-3			Pass	168	SE-2	Pass
				109	SE-3			Pass	169	SE-2	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S58/S59	SR-234	7/27/10	LH	116	SE-1	128	SE-1	Pass	180	BRK	Pass
				115	SE-1	133	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-69**		116	SE-1	117	SE-1	Pass	181	BRK	Pass
Comments:				118	SE-1	116	SE-1	Pass	181	BRK	Pass
				117	SE-1	130	SE-1	Pass	179	BRK	Pass
S57/S58	SR-226	7/27/10	LH	117	SE-1	135	AD-BRK 10%	Pass	181	BRK	Pass
				149	SE-1	104	AD-BRK 10%	Pass	179	BRK	Pass
Sample Number:		**DS-70**		149	SE-1	129	SE-1	Pass	186	BRK	Pass
Comments:				166	SE-1	132	AD-BRK 10%	Pass	181	BRK	Pass
				142	SE-1	139	SE-1	Pass	181	BRK	Pass
SR231/S59	SR-236	7/27/10	LH	153	SE-3			Pass	178	BRK	Pass
				157	SE-3			Pass	175	BRK	Pass
Sample Number:		**DS-71**		113	SE-3			Pass	175	BRK	Pass
Comments:	Extrusion Weld			111	SE-3			Pass	173	BRK	Pass
				137	SE-3			Pass	169	BRK	Pass
S59/S60	SR-250	8/5/10	TW	140	SE-1	117	SE-1	Pass	170	BRK	Pass
				134	SE-1	150	SE-1	Pass	173	BRK	Pass
Sample Number:		**DS-72**		133	SE-1	144	SE-1	Pass	172	BRK	Pass
Comments:				144	SE-1	139	SE-1	Pass	173	BRK	Pass
				147	SE-1	151	SE-1	Pass	173	BRK	Pass
S60/S61	SR-258	8/5/10	TW	126	SE-1	122	SE-1	Pass	174	BRK	Pass
				121	SE-1	120	SE-1	Pass	174	BRK	Pass
Sample Number:		**DS-73**		122	SE-1	123	SE-1	Pass	175	BRK	Pass
Comments:				127	SE-1	112	SE-1	Pass	173	BRK	Pass
				118	SE-1	115	SE-1	Pass	176	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S61/S62	SR-243	8/11/10	TW	153	SE-1	138	SE-1	Pass	176	BRK	Pass
				117	SE-1	128	SE-1	Pass	176	BRK	Pass
Sample Number:		**DS-74**		114	SE-1	117	SE-1	Pass	177	BRK	Pass
Comments:				124	SE-1	142	SE-1	Pass	175	BRK	Pass
				118	SE-1	127	SE-1	Pass	175	BRK	Pass
S62/S63	SR-244	8/18/10	TW	150	SE-1	140	SE-1	Pass	181	BRK	Pass
				135	SE-1	106	SE-1	Pass	179	BRK	Pass
Sample Number:		**DS-75**		134	SE-1	120	SE-1	Pass	183	BRK	Pass
Comments:				142	SE-1	107	SE-1	Pass	181	BRK	Pass
				134	SE-1	123	SE-1	Pass	179	BRK	Pass
S63/S64	SR-259	8/11/10	TW	141	SE-1	129	SE-1	Pass	181	BRK	Pass
				122	SE-1	147	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-76**		164	SE-1	121	SE-1	Pass	177	BRK	Pass
Comments:				131	SE-1	124	SE-1	Pass	180	BRK	Pass
				127	SE-1	126	SE-1	Pass	178	BRK	Pass
S64/S65	SR-260	8/11/10	TW	125	SE-1	135	SE-1	Pass	184	BRK	Pass
				128	SE-1	137	SE-1	Pass	182	BRK	Pass
Sample Number:		**DS-77**		120	SE-1	125	SE-1	Pass	183	BRK	Pass
Comments:				121	SE-1	126	SE-1	Pass	182	BRK	Pass
				113	SE-1	127	SE-1	Pass	182	BRK	Pass
S65/S66	SR-261	8/11/10	TW	132	SE-1	164	SE-1	Pass	183	BRK	Pass
				112	SE-1	148	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-78**		124	SE-1	149	SE-1	Pass	180	BRK	Pass
Comments:				122	SE-1	151	SE-1	Pass	173	BRK	Pass
				127	SE-1	124	SE-1	Pass	178	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Secondary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-2

Project Information

Project:	Hanford ERDF Cell 9	Material:	0		
Project ID:	01-0032	Fusion Peel:	91	Fusion Shear:	120 ppi
Project No.:	S013213A00	Extrusion Peel:	78	Ext Shear:	120 ppi
Installer:	ESI				

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
S59/S72	SR-294	8/9/10	TW	145	SE-1	159	SE-1	Pass	176	BRK	Pass
				138	SE-1	138	SE-1	Pass	171	BRK	Pass
Sample Number:		**DS-79**		155	SE-1	157	SE-1	Pass	174	BRK	Pass
Comments:				151	SE-1	142	SE-1	Pass	170	BRK	Pass
				160	SE-1	142	SE-1	Pass	176	BRK	Pass
S57/S78	SR-295	8/9/10	TW	150	SE-1	136	SE-1	Pass	176	BRK	Pass
				142	SE-1	134	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-80**		148	SE-1	137	SE-1	Pass	184	BRK	Pass
Comments:				153	SE-1	140	SE-1	Pass	185	BRK	Pass
				146	SE-1	133	SE-1	Pass	181	BRK	Pass
S66/S76	SR-323	8/11/10	RS	148	SE-1	140	SE-1	Pass	166	BRK	Pass
				162	SE-1	153	SE-1	Pass	177	BRK	Pass
Sample Number:		**DS-81**		151	SE-1	141	SE-1	Pass	172	BRK	Pass
Comments:				153	SE-1	138	SE-1	Pass	173	BRK	Pass
				147	SE-1	147	SE-1	Pass	176	BRK	Pass
S76/S77	SR-324	8/16/10	RS	132	SE-1	131	SE-1	Pass	184	BRK	Pass
				127	SE-1	123	SE-1	Pass	180	BRK	Pass
Sample Number:		**DS-82**		108	SE-1	116	SE-1	Pass	182	BRK	Pass
Comments:				122	SE-1	122	SE-1	Pass	171	BRK	Pass
				121	SE-1	118	SE-1	Pass	179	BRK	Pass
SR305/S66	SR-325	8/12/10	TW	87	SE-3			Pass	187	BRK	Pass
				103	SE-3			Pass	188	BRK	Pass
Sample Number:		**DS-83**		131	SE-3			Pass	183	BRK	Pass
Comments:	Extrusion Weld			119	SE-3			Pass	187	BRK	Pass
				105	SE-3			Pass	187	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

F.3

PRIMARY GEOMEMBRANE

F.3.1

PRIMARY GEOMEMBRANE PANEL PLACEMENT LOG

Primary Geomembrane Panel Placement Log

Submittal 5-25-3

ENVIROTECH ENGINEERING & CONSULTING INC

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Panel Number	Date / Time		Roll Number	Panel Width	Panel Length	Square Footage	Location (see as built for locations)
P-001	6/29/10	13:45	108151746	22	542	11924	Cell 9 SE Corner
P-002	6/29/10	15:50	108151750	22	543	11946	Cell 9 SE Corner
P-003	6/30/10	9:00	102153806	22	530	11660	S. Berm/Floor - East
P-004	6/30/10	10:00	102153821	22	530	11660	S. Berm/Floor - East
P-005	6/30/10	12:10	102153796	22	530	11660	S. Berm/Floor - East
P-006	6/30/10	12:30	102153741	22	530	11660	S. Berm/Floor - East
P-007	6/30/10	13:15	108151757	22	530	11660	S. Berm/Floor - East
P-008	7/1/10	9:55	102153689	22	530	11660	S. Berm/Floor - East
P-009	7/1/10	10:40	108151752	22	530	11660	S. Berm/Floor - East
P-010	7/1/10	12:15	102153710	22	530	11660	S. Berm/Floor - East
P-011	7/1/10	13:00	102153719	22	530	11660	S. Berm/Floor - East
P-012	7/1/10	14:00	108151795	22	530	11660	S. Berm/Floor - East
P-013	7/1/10	14:45	102153707	22	530	11660	S. Berm/Floor- West
P-014	7/6/10	9:30	102153677	22	530	11660	S. Berm/Floor- West
P-015	7/6/10	10:00	102153721	22	530	11660	S. Berm/Floor- West
P-016	7/6/10	12:00	102153706	22	530	11660	S. Berm/Floor- West
P-017	7/6/10	12:30	108151772	22	530	11660	S. Berm/Floor- West
P-018	7/9/10	7:00	102153801	22	530	11660	S. Berm/Floor- West
P-019	7/9/10	7:35	108151768	22	530	11660	S. Berm/Floor- West
P-020	7/9/10	8:15	108151769	22	530	11660	S. Berm/Floor- West
P-021	7/9/10	9:00	108151740	22	530	11660	S. Berm/Floor- West
P-022	7/13/10	6:45	108151748	22	530	11660	S. Berm West Tie-in
P-023	7/13/10	8:30	108151741	22	478	10516	E/W Floor-S. Side
P-024	7/13/10	9:50	108151828	22	478	10516	E/W Floor-S. Side
P-025	7/14/10	13:00	108151893	22	478	10516	E/W Floor-S. Side
P-026	7/19/10	13:45	108151894	22	478	10516	E/W Floor-S. Side

Primary Geomembrane Panel Placement Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Panel Number	Date / Time		Roll Number	Panel Width	Panel Length	Square Footage	Location (see as built for locations)
P-027	7/19/10	14:30	108151918	22	478	10516	E/W Floor-S. Side
P-028	7/20/10	7:45	108151900	22	483	10626	E/W Floor-S. Side
P-029	7/20/10	8:17	108151896	22	483	10626	E/W Floor-S. Side
P-030	7/20/10	9:10	108151897	22	483	10626	E/W Floor-S. Side
P-031	7/20/10	9:50	108151912	22	483	10626	E/W Floor-S. Side
P-032	7/20/10	10:30	108151920	22	483	10626	E/W Floor-S. Side
P-033	7/20/10	12:55	108151902	22	483	10626	E/W Floor-S. Side
P-022A	7/22/10	8:15	108151925	1	95	95	S. Slope Tie-in
P-034	7/23/10	9:30	108151914	22	484	10648	E/W Floor-N. Side
P-035	7/23/10	10:10	108151895	22	484	10648	E/W Floor-N. Side
P-036	7/23/10	10:30	108151915	22	484	10648	E/W Floor-N. Side
P-037	7/23/10	12:12	108151930	22	484	10648	E/W Floor-N. Side
P-038	7/27/10	8:05	108151928	22	484	10648	E/W Floor-N. Side
P-039	7/27/10	8:40	108151924	22	484	10648	E/W Floor-N. Side
P-040	7/27/10	9:00	108151932	22	485	10670	E/W Floor-N. Side
P-041	7/27/10	9:45	108151939	22	485	10670	E/W Floor-N. Side
P-042	8/4/10	14:20	108151839	22	485	10670	E/W Floor-N. Side
P-043	8/24/10	9:00	108151809	22	514	11308	N.Berm W. of Sump
P-044	8/24/10	9:25	108151890	22	514	11308	N.Berm W. of Sump
P-045	8/24/10	10:30	108151857	22	514	11308	N.Berm W. of Sump
P-046	8/24/10	11:50	108151859	22	514	11308	N.Berm W. of Sump
P-047	8/24/10	12:15	108151863	22	514	11308	N.Berm W. of Sump
P-048	8/24/10	13:00	108151810	22	514	11308	N.Berm W. of Sump
P-049	8/24/10	14:00	108151797	22	514	11308	N.Berm W. of Sump
P-049A	8/30/10	14:00	108151895	22	2	44	Extension of P-049
P-050	8/24/10	14:30	108151823	22	514	11308	N.Berm W. of Sump

Primary Geomembrane Panel Placement Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Panel Number	Date / Time		Roll Number	Panel Width	Panel Length	Square Footage	Location (see as built for locations)
P-051	9/3/10	8:45	108151903	22	517	11374	N.Berm E. of Sump
P-052	9/3/10	9:30	108151941	22	517	11374	N.Berm E. of Sump
P-053	9/3/10	10:00	108151762	22	517	11374	N.Berm E. of Sump
P-054	9/3/10	10:45	102153751	22	517	11374	N.Berm E. of Sump
P-055	9/3/10	11:55	102153830	22	517	11374	N.Berm E. of Sump
P-056	9/3/10	12:50	102153831	22	517	11374	N.Berm E. of Sump
P-057	9/8/10	13:15	108151777	22	517	11374	N.Berm E. of Sump
P-058	9/8/10	13:50	102153776	22	517	11374	N.Berm E. of Sump
P-059	9/9/10	12:00	108151739	22	517	11374	N.Berm E. of Sump
P-060	9/9/10	13:15	108151854	22	517	11374	N.Berm E. of Sump
P-061	9/9/10	14:05	108151833	22	517	11374	N.Berm E. of Sump
P-062	9/10/10	-	108151784	22	517	11374	N.Berm and Sump
P-063	9/10/10	-	108151735	13	517	6721	N.Berm and Sump
P-064	9/10/10	-	108151794	22	517	11374	N.Berm and Sump
P-065	9/10/10	-	102153805	22	384	8448	N.Berm and Sump
P-066	9/10/10	-	102153805	22	152	3344	N.Berm and Sump
P-067	9/10/10	-	108151735	6	384	2304	N.Berm and Sump

F.3.2

PRIMARY GEOMEMBRANE SEAM TRACKING LOG

Pri...ary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
6/29/10	P1/P2	542	CN	W44	860	4	7/2/10	BOS	EOS	CN	22043	30	30	7:29	7:34	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
6/30/10	P2/P3	530	JA	W26	860	4	7/2/10	BOS	BOS+335	CN	22041	30	30	7:31	7:36	Pass
Temperature (Outside)		73	°F	Overlap	6	in	7/2/10	BOS+335	EOS	CN	22041	30	30	8:13	8:18	Pass
Comments:																
6/30/10	P3/P4	530	CN	W44	860	4	7/2/10	BOS	BOS+480	CN	22043	30	30	9:34	9:39	Pass
Temperature (Outside)		73	°F	Overlap	6	in	7/2/10	BOS+480	EOS	CN	22041	30	30	9:56	10:01	Pass
Comments:																
6/30/10	P5/P6	530	CN	W44	860	4	7/2/10	BOS	EOS	CN	22043	30	30	10:00	10:05	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
6/30/10	P4/P5	530	JA	W26	860	4	7/2/10	BOS	EOS	CN	22041	30	30	8:23	8:28	Pass
Temperature (Outside)		86	°F	Overlap	6	in										
Comments:																
6/30/10	P6/P7	530	CN	W44	860	4	7/2/10	BOS	BOS+340	CN	22041	30	30	10:07	10:12	Pass
Temperature (Outside)		86	°F	Overlap	6	in	7/2/10	BOS+340	EOS	CN	22043	30	30	10:25	10:30	Pass
Comments:																

Pri ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/1/10	P7/P8	530	JA	W26	860	4	7/2/10	BOS	EOS	CN	22043	30	30	10:12	10:17	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
7/1/10	P8/P9	530	CN	W44	860	4	7/2/10	BOS	EOS	CN	22041	30	30	10:37	10:42	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
7/1/10	P9/P10	530	JA	W26	860	4	7/2/10	BOS	EOS	CN	22043	30	30	10:49	10:54	Pass
Temperature (Outside)		83	°F	Overlap	6	in										
Comments:																
7/1/10	P10/P11	530	CN	W44	860	4	7/2/10	BOS	EOS	CN	22041	30	30	10:52	10:57	Pass
Temperature (Outside)		83	°F	Overlap	6	in										
Comments:																
7/1/10	P11/P12	530	JA	W26	860	4	7/2/10	BOS	EOS	CN	22041	30	30	11:57	12:02	Pass
Temperature (Outside)		83	°F	Overlap	6	in										
Comments:																
7/1/10	P12/P13	530	CN	W44	860	4	7/2/10	BOS	EOS	CN	22043	30	30	11:59	12:04	Pass
Temperature (Outside)		83	°F	Overlap	6	in										
Comments:																

Pri____ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/6/10	P13/P14	530	JA	W43	860	4	7/12/10	BOS	BOS+460	DA	22043	30	30	7:57	8:02	Pass
Temperature (Outside)		90	°F	Overlap	6	in	7/12/10	BOS+460	EOS	DA	22041	30	30	8:32	8:37	Pass
Comments:																
7/6/10	P14/P15	530	CN	W44	860	4	7/12/10	BOS	BOS+300	DA	22043	30	30	8:50	8:55	Pass
Temperature (Outside)		90	°F	Overlap	6	in	7/12/10	BOS+300	BOS+425	DA	22041	30	30	8:46	8:53	Pass
Comments:							7/12/10	BOS+425	EOS	DA	22043	30	30	8:40	8:45	Pass
7/6/10	P15/P16	530	JA	W43	860	4	7/12/10	BOS	BOS+460	DA	22041	31	31	9:17	9:22	Pass
Temperature (Outside)		90	°F	Overlap	6	in	7/12/10	BOS+460	EOS	DA	22043	30	30	9:02	9:07	Pass
Comments:																
7/6/10	P16/P17	530	CN	W44	860	4	7/12/10	BOS+500	EOS	DA	22043	30	29	9:30	9:35	Pass
Temperature (Outside)		90	°F	Overlap	6	in	7/12/10	BOS+425	BOS+500	DA	22041	31	31	9:32	9:37	Pass
Comments:							7/12/10	BOS	BOS+425	DA	22041	30	30	10:37	10:42	Pass
7/9/10	P17/P18	530	JA	W43	860	4	7/12/10	BOS	EOS	DA	22045	30	30	10:13	10:18	Pass
Temperature (Outside)		87	°F	Overlap	6	in										
Comments:																
7/9/10	P18/P19	530	CN	W44	860	4	7/12/10	BOS	EOS	DA	22047	30	30	10:12	10:17	Pass
Temperature (Outside)		88	°F	Overlap	6	in										
Comments:																

Pri ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/9/10	P19/P20	530	JA	W43	860	4	7/12/10	BOS	EOS	DA	22031	30	30	10:10	10:15	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
7/9/10	P20/P21	530	CN	W44	860	4	7/12/10	BOS	EOS	DA	22043	30	30	10:33	10:38	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
7/13/10	P21/P22	530	CN	W26	860	4	7/30/10	BOS	EOS	EY	22041	30	30	14:06	14:11	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P22	22	JA	W43	860	3.5	7/26/10	BOS	EOS	DA	22031	31	31	8:23	8:28	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P21	22	JA	W43	860	3.5	7/26/10	BOS	EOS	DA	22045	30	30	8:19	8:24	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P20	22	JA	W43	860	3.5	7/26/10	BOS	EOS	DA	22041	30	30	8:15	8:20	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																

Pri ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/13/10	P23/P19	22	JA	W43	860	3.5	7/26/10	BOS	EOS	DA	22031	30	30	7:39	7:44	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P18	22	JA	W43	860	3.5	7/26/10	BOS	EOS	DA	22045	30	30	7:43	7:48	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P17	22	JA	W43	860	3.5	7/26/10	BOS	EOS	DA	22041	30	30	7:40	7:45	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P16	22	JA	W43	860	3.5	7/26/10	BOS	EOS	DA	22045	30	30	7:35	7:40	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P15	22	JA	W43	860	3.5	7/26/10	BOS	EOS	DA	22031	30	30	7:34	7:39	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P14	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22045	30	30	16:07	16:12	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																

Pri ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/13/10	P23/P13	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22031	30	30	16:05	16:10	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P12	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22031	30	30	15:45	15:51	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P11	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22045	30	30	15:44	15:49	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P10	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22031	30	30	15:33	15:38	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P9	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22045	31	31	15:30	15:35	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P8	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22045	31	31	15:11	15:16	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																

Pr ıry Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING IN

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/13/10	P23/P7	22	JA	W43	860	3.5		BOS	EOS	Seam Capped by Repair PR-060 and PR-062						
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P6	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22031	31	30	15:09	15:14	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P5	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22045	31	31	14:53	14:58	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P4	22	JA	W43	860	3.5	7/23/10	BOS	BOS+4	DA	22045	30	30	14:50	14:55	Pass
Temperature (Outside)		73	°F	Overlap	6	in	7/23/10	BOS+4	EOS	DA	22045	30	29	15:07	15:12	Pass
Comments:																
7/13/10	P23/P3	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22041	30	29	14:43	14:48	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P2	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22045	30	30	14:42	14:47	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																

Pr ıry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/13/10	P23/P1	22	JA	W43	860	3.5	7/23/10	BOS	EOS	DA	22031	30	30	14:40	14:45	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
7/13/10	P23/P24	478	CN	W26	860	4	7/23/10	BOS	EOS	DA	22045	30	30	8:50	8:55	Pass
Temperature (Outside)		75	°F	Overlap	6	in										
Comments:																
7/19/10	P24/P25	478	CN	W26	860	4	7/26/10	BOS	EOS	DA	22031	30	30	9:50	9:55	Pass
Temperature (Outside)		93	°F	Overlap	6	in										
Comments:																
7/19/10	P25/P26	478	JA	W43	860	4	7/26/10	EOS	BOS+350	DA	22031	31	31	8:55	9:00	Pass
Temperature (Outside)		93	°F	Overlap	6	in	7/26/10	BOS+350	BOS	DA	22043	31	31	9:47	9:52	Pass
Comments:																
7/19/10	P26/P27	478	CN	W26	860	4	7/26/10	BOS	EOS	DA	22045	31	31	9:12	9:17	Pass
Temperature (Outside)		93	°F	Overlap	6	in										
Comments:																
7/20/10	P27/P28	483	JA	W43	860	4	7/22/10	BOS	EOS	DA	22045	32	32	9:50	9:55	Pass
Temperature (Outside)		81	°F	Overlap	6	in										
Comments:																

Pri....ry Geomembrane Seam Tracking Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/20/10	P28/P29	483	DA	W24	850	4	7/22/10	BOS	BOS+155	DA	22031	30	30	9:53	9:58	Pass
Temperature (Outside)		85	°F	Overlap	6	in	7/22/10	BOS+155	BOS+285	DA	22031	31	31	10:12	10:17	Pass
							7/22/10	BOS+285	BOS+300	DA	22045	32	32	10:15	10:20	Pass
Comments:							7/22/10	BOS+300	EOS	DA	22041	30	31	10:18	10:24	Pass
7/20/10	P29/P30	483	JA	W43	860	4	7/22/10	BOS	BOS+125	DA	22041	30	30	9:50	9:55	Pass
Temperature (Outside)		90	°F	Overlap	6	in	7/22/10	BOS+125	EOS	DA	22041	32	32	10:11	10:16	Pass
Comments:																
7/20/10	P30/P31	483	JA	W43	860	4	7/22/10	BOS	EOS	DA	22045	32	32	8:38	8:43	Pass
Temperature (Outside)		93	°F	Overlap	6	in										
Comments:																
7/20/10	P31/P32	483	DA	W24	850	4	7/22/10	BOS	BOS+325	DA	22041	30	30	8:00	8:05	Pass
Temperature (Outside)		95	°F	Overlap	6	in	7/22/10	BOS+325	BOS+280	DA	22031	30	30	8:05	8:10	Pass
Comments:							7/22/10	BOS+280	EOS	DA	22045	30	30	8:06	8:11	Pass
7/20/10	P32/P33	483	JA	W43	860	4	7/22/10	BOS	EOS	DA	22041	31	31	8:39	8:44	Pass
Temperature (Outside)		96	°F	Overlap	6	in										
Comments:																

Pr ıry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/22/10	P22/Tie-in	495	JA	W43	860	4	7/30/10	BOS	BOS+155	EY	22045	30	30	12:55	13:00	Pass
Temperature (Outside)		91	ºF	Overlap	6	in	7/30/10	BOS+155	BOS+180	EY	22031	30	30	11:42	11:47	Pass
Comments:							7/30/10	BOS+180	BOS+280	EY	22045	30	30	11:43	11:48	Pass
							7/30/10	BOS+280	BOS+345	EY	22031	30	30	11:55	12:00	Pass
							7/30/10	BOS+345	BOS+388	EY	22045	30	29	12:25	12:30	Pass
							7/26/10	BOS+388	BOS+406	DA	22031	31	31	14:11	14:16	Pass
							7/26/10	BOS+406	BOS+420	DA	22045	30	30	14:00	14:05	Pass
							7/26/10	BOS+420	EOS	DA	22031	30	30	13:54	13:59	Pass
7/22/10	P22A/Tie-in	95	JA	W43	860	4	7/30/10	BOS	BOS+75	EY	22045	30	30	13:46	13:51	Pass
Temperature (Outside)		-	ºF	Overlap	6	in	7/30/10	BOS+75	EOS	EY	22031	30	30	13:23	13:28	Pass
Comments:																
7/22/10	P22/P22A	95	JA	W43	860	4	7/30/10	BOS	BOS+75	EY	22045	30	30	13:40	13:45	Pass
Temperature (Outside)		100	ºF	Overlap	6	in	7/30/10	BOS+75	EOS	EY	22031	30	30	13:18	13:23	Pass
Comments:																
7/23/10	P33/P34	484	CN	W26	860	4	8/3/10	BOS	EOS	EY	22045	30	30	8:03	8:08	Pass
Temperature (Outside)		92	ºF	Overlap	6	in										
Comments:																

Pr ıry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/23/10 10:08	P34/P35	484	JA	W24	860	4	8/3/10	BOS	EOS	EY	22041	30	30	8:34	8:39	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																
7/23/10	P35/P36	484	CN	W26	860	4	8/3/10	BOS	EOS	EY	22041	30	30	8:53	8:58	Pass
Temperature (Outside)		91	°F	Overlap	6	in										
Comments:																
7/23/10	P36/P37	484	CN	W26	860	4	8/3/10	BOS	EOS	EY	22043	30	30	8:41	8:46	Pass
Temperature (Outside)		92	°F	Overlap	6	in										
Comments:																
7/23/10	P23/Tie-in	22	JA	W24	860	3.5	7/26/10	BOS	BOS+13	DA	22041	30	29	10:15	10:20	Pass
Temperature (Outside)		92	°F	Overlap	6	in	7/26/10	BOS+13	EOS	DA	22045	30	29	10:18	10:23	Pass
Comments:																
7/23/10	P24/Tie-in	22	JA	W24	860	3.5	7/26/10	BOS	BOS+13	DA	22031	30	30	10:16	10:21	Pass
Temperature (Outside)		92	°F	Overlap	6	in	7/26/10	BOS+13	EOS	DA	22041	30	30	10:47	10:53	Pass
Comments:																
7/23/10	P25/Tie-in	22	JA	W24	860	3.5	7/26/10	BOS	BOS+10	DA	22031	31	31	10:39	10:44	Pass
Temperature (Outside)		93	°F	Overlap	6	in	7/26/10	BOS+10	EOS	DA	22045	31	31	10:50	10:55	Pass
Comments:																

Pı ary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/23/10	P26/Tie-in	22	JA	W24	860	3.5	7/26/10	BOS	BOS+5	DA	22041	31	31	12:45	12:50	Pass
Temperature (Outside)		93	°F	Overlap	6	in	7/26/10	BOS+5	EOS	DA	22045	30	30	12:12	12:17	Pass
Comments:																
7/23/10	P27/Tie-in	22	JA	W24	860	3.5	7/26/10	BOS	BOS+5	DA	22031	31	31	12:27	12:32	Pass
Temperature (Outside)		93	°F	Overlap	6	in	7/26/10	BOS+5	EOS	DA	22045	31	30	13:00	13:05	Pass
Comments:																
7/23/10	P28/Tie-in	22	JA	W24	860	3.5	7/26/10	BOS	BOS+5	DA	22031	31	31	12:54	12:59	Pass
Temperature (Outside)		93	°F	Overlap	6	in	7/26/10	BOS+5	EOS	DA	22045	30	29	13:16	13:21	Pass
Comments:																
7/23/10	P29/Tie-in	22	JA	W24	860	3.5	7/26/10	BOS	BOS+7	DA	22031	31	31	13:05	13:10	Pass
Temperature (Outside)		93	°F	Overlap	6	in	7/26/10	BOS+7	EOS	DA	22041	31	30	13:20	13:25	Pass
Comments:																
7/23/10	P30/Tie-in	22	JA	W24	860	3.5	7/26/10	BOS	BOS+5	DA	22045	30	29	13:22	13:27	Pass
Temperature (Outside)		93	°F	Overlap	6	in	7/26/10	BOS+5	EOS	DA	22031	30	30	13:25	13:30	Pass
Comments:																
7/27/10	P37/P38	484	CN	W26	860	4	8/3/10	BOS	EOS	EY	22031	30	30	8:56	9:01	Pass
Temperature (Outside)		75	°F	Overlap	6	in										
Comments:																

Pr ıry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
7/27/10	P38/P39	484	JA	W24	860	4	8/3/10	BOS	EOS	EY	22045	30	30	10:17	10:22	Pass
Temperature (Outside)		-	°F	Overlap	6	in										
Comments:																
7/27/10	P39/P40	485	CN	W26	860	4	8/3/10	BOS	EOS	EY	22031	30	30	9:55	10:00	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:																
7/27/10	P40/P41	485	JA	W24	860	4	8/3/10	BOS	EOS	EY	22041	30	30	10:05	10:10	Pass
Temperature (Outside)		78	°F	Overlap	6	in										
Comments:																
8/4/10	P41/P42	485	JA	W43	860	4	8/17/10	BOS	EOS	DA	22045	30	30	9:40	9:45	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																
8/4/10	P31/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+4	DA	22222	31	31	7:02	7:07	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+4	EOS	DA	22221	30	30	6:55	7:00	Pass
Comments:																
8/4/10	P32/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+4	DA	22222	30	29	7:13	7:18	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+4	EOS	DA	22221	30	29	7:08	7:13	Pass
Comments:																

Pr ıry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/4/10	P33/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+4	DA	22041	31	31	7:30	7:35	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+4	EOS	DA	22043	31	31	7:17	7:22	Pass
Comments:																
8/4/10	P34/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+4	DA	22043	30	30	7:38	7:43	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+4	EOS	DA	22045	30	30	7:37	7:42	Pass
Comments:																
8/4/10	P35/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+13	DA	22222	31	31	7:46	7:51	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+13	EOS	DA	22045	31	31	7:45	7:50	Pass
Comments:																
8/4/10	P36/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+4	DA	22043	30	30	7:58	8:03	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+4	EOS	DA	22045	30	30	7:57	8:02	Pass
Comments:																
8/4/10	P37/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+4	DA	22021	30	30	8:00	8:05	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+4	EOS	DA	22041	30	30	7:59	8:04	Pass
Comments:																
8/4/10	P38/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+4	DA	22043	30	30	8:11	8:16	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+4	EOS	DA	22045	30	30	8:10	8:15	Pass
Comments:																

Pr.....ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/4/10	P39/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+4	DA	22222	30	30	8:15	8:20	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+4	EOS	DA	22021	30	30	8:13	8:18	Pass
Comments:																
8/4/10	P40/Tie-in	22	JA	W43	860	3.5	8/13/10	BOS	BOS+4	DA	22045	30	30	8:32	8:37	Pass
Temperature (Outside)		85	°F	Overlap	6	in	8/13/10	BOS+4	BOS+11	DA	22222	30	30	8:30	8:35	Pass
Comments:							8/13/10	BOS+11	EOS	DA	22043	30	30	8:27	8:32	Pass
8/26/10	P43/Tie-in	514	JA	W43	860	3.5	8/26/10	BOS	BOS+245	EY	22222	31	31	10:37	10:42	Pass
Temperature (Outside)		65	°F	Overlap	6	in	8/26/10	BOS+245	BOS+301	EY	22222	30	29	12:05	12:10	Pass
Comments:							8/26/10	BOS+301	BOS+347	EY	22222	30	29	12:23	12:28	Pass
							8/26/10	BOS+347	BOS+388	DA	22043	31	31	12:30	12:35	Pass
							8/26/10	BOS+388	BOS+429	DA	22222	30	29	12:50	12:55	Pass
							8/26/10	BOS+429	BOS+468	DA	22043	31	31	12:59	13:04	Pass
							8/26/10	BOS+468	EOS	DA	22222	31	31	13:15	13:20	Pass
8/24/10	P43/P44	514	DA	W85	850	4	8/25/10	BOS	EOS	EY	22041	31	31	7:58	8:03	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																

Pr....ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/24/10	P44/P45	514	JA	W43	860	4	8/25/10	BOS	EOS	EY	22041	30	30	8:21	8:26	Pass
Temperature (Outside)		80	°F	Overlap	6	in										
Comments:																
8/24/10	P45/P46	514	CN	W26	860	4	8/25/10	BOS	BOS+500	EY	22222	30	30	8:02	8:07	Pass
Temperature (Outside)		90	°F	Overlap	6	in		BOS+500	EOS	Seam Capped by SR-169						
Comments:																
8/24/10	P46/P47	514	DA	W85	850	4	8/25/10	BOS	EOS	EY	22222	30	30	8:25	8:30	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																
8/24/10	P47/P48	514	JA	W43	860	4	8/25/10	BOS	EOS	EY	22222	31	31	9:01	9:06	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																
8/24/10	P48/P49	514	CN	W26	860	4	8/25/10	BOS	EOS	EY	22045	31	31	9:17	9:22	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:																
8/24/10	P49/P50	265	DA	W85	850	4	8/25/10	BOS	BOS+265	EY	22222	31	31	9:33	9:38	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:	Two welders on panel - see seam tracking below															

Pr.....ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/24/10	P49/P50	249	JA	W43	860	4	8/25/10	BOS+265	EOS	EY	22045	31	31	9:32	9:37	Pass
Temperature (Outside)		90	°F	Overlap	6	in										
Comments:	Two welders on panel - see seam tracking above															
8/26/10	P42/Tie-in	22	JA	W43	860	3.5	8/26/10	BOS	BOS+20	DA	22043	31	31	13:16	13:21	Pass
Temperature (Outside)		65	°F	Overlap	6	in	8/26/10	BOS+20	EOS	DA	22222	31	31	13:34	13:39	Pass
Comments:																
8/26/10	P41/Tie-in	22	JA	W43	860	3.5	8/26/10	BOS	BOS+5	DA	22043	30	30	13:32	13:37	Pass
Temperature (Outside)		65	°F	Overlap	6	in	8/26/10	BOS+5	BOS+11	DA	22222	30	29	13:24	13:29	Pass
Comments:								BOS+11	EOS	Capped by PR-180						
8/30/10	P42/P43	22	JA	W43	860	4	8/30/10	BOS	EOS	EY	22043	30	30	11:49	11:54	Pass
Temperature (Outside)		72	°F	Overlap	6	in										
Comments:																
8/30/10	P42/P44	22	JA	W43	860	4	8/30/10	BOS	BOS+11	EY	22043	30	30	12:24	12:29	Pass
Temperature (Outside)		72	°F	Overlap	6	in	8/30/10	BOS+11	EOS	EY	22222	30	30	12:32	12:37	Pass
Comments:																
8/30/10	P42/P45	22	JA	W43	860	4	8/30/10	BOS	EOS	EY	22222	30	30	12:46	12:51	Pass
Temperature (Outside)		72	°F	Overlap	6	in										
Comments:																

Pr....ary Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
8/30/10	P42/P46	22	JA	W43	860	4	8/30/10	BOS	EOS	EY	22043	30	30	12:55	13:00	Pass
Temperature (Outside)		72	°F	Overlap	6	in										
Comments:																
8/30/10	P42/P47	22	JA	W43	860	4	8/30/10	BOS	EOS	EY	22222	30	30	13:04	13:09	Pass
Temperature (Outside)		72	°F	Overlap	6	in										
Comments:																
8/30/10	P42/P48	22	JA	W43	860	4	8/30/10	BOS	EOS	EY	22043	30	30	13:06	13:11	Pass
Temperature (Outside)		72	°F	Overlap	6	in										
Comments:																
8/30/10	P42/P49A	22	JA	W43	860	4	8/30/10	BOS	EOS	EY	22043	30	30	13:13	13:18	Pass
Temperature (Outside)		72	°F	Overlap	6	in										
Comments:																
8/30/10	P49/P49A	22	JA	W43	860	4	8/30/10	BOS	EOS	EY	22222	30	30	13:12	13:17	Pass
Temperature (Outside)		72	°F	Overlap	6	in										
Comments:																
8/30/10	P42/P50	22	JA	W43	860	4	8/30/10	BOS	EOS	EY	22222	30	30	13:20	13:25	Pass
Temperature (Outside)		72	°F	Overlap	6	in										
Comments:																

Pr ...ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
9/3/10	P51/P52	517	JA	W43	860	4	9/8/10	BOS	BOS+270	VB	22043	30	30	12:35	12:40	Pass
Temperature (Outside)		80	°F	Overlap	6	in	9/8/10	BOS+270	BOS+480	VB	22223	30	30	12:46	12:51	Pass
Comments:							9/8/10	BOS+480	EOS	VB	22223	30	30	12:17	12:23	Pass
9/3/10	P52/P53	517	CN	W26	860	4	9/8/10	BOS	EOS	VB	22043	30	30	11:59	12:04	Pass
Temperature (Outside)		81	°F	Overlap	6	in										
Comments:																
9/3/10	P53/P54	517	JA	W43	860	4	9/8/10	BOS	EOS	VB	22223	30	30	11:51	11:56	Pass
Temperature (Outside)		93	°F	Overlap	6	in										
Comments:																
9/3/10	P54/P55	517	CN	W26	860	4	9/8/10	BOS	EOS	VB	22043	30	30	11:48	11:53	Pass
Temperature (Outside)		93	°F	Overlap	6	in										
Comments:																
9/3/10	P55/P56	250	JA	W43	860	4	9/8/10	BOS	BOS+250	VB	22223	30	30	10:48	10:53	Pass
Temperature (Outside)		93	°F	Overlap	6	in										
Comments:	Two welders on panel - see seam tracking below															
9/3/10	P55/P56	267	CN	W26	860	4	9/8/10	BOS+250	EOS	VB	22223	30	30	11:38	11:43	Pass
Temperature (Outside)		93	°F	Overlap	6	in										
Comments:	Two welders on panel - see seam tracking above															

Pr ıry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
9/8/10	P51/P57	517	JA	W43	860	4	9/8/10	BOS	EOS	VB	22223	30	30	16:01	16:06	Pass
Temperature (Outside)		75	°F	Overlap	6	in										
Comments:																
9/8/10	P57/P58	517	DA	W85	850	4	9/8/10	BOS	BOS+280	VB	22043	30	30	15:50	15:55	Pass
Temperature (Outside)		75	°F	Overlap	6	in	9/8/10	BOS+280	EOS	VB	22043	30	30	16:04	16:09	Pass
Comments:																
9/9/10	P56/P59	517	DA	W85	850	4	9/10/10	BOS	EOS	VB	22222	30	30	12:05	12:10	Pass
Temperature (Outside)		75	°F	Overlap	6	in										
Comments:																
9/9/10	P59/P60	517	JA	W43	860	4	9/10/10	BOS	EOS	VB	22045	30	30	12:15	12:20	Pass
Temperature (Outside)		75	°F	Overlap	6	in										
Comments:																
9/9/10	P60/P61	517	CN	W26	8604	0	9/10/10	BOS	EOS	VB	22222	30	30	12:18	12:23	Pass
Temperature (Outside)		75	°F	Overlap	6	in										
Comments:																
9/10/10	P50/P62	517	JA	W43	860	4	9/13/10	BOS	EOS	VB	22045	30	30	8:21	8:26	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																

Pr ...ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
9/10/10	P62/P63	517	CN	W26	860	4	9/13/10	BOS	EOS	VB	22222	30	30	8:20	8:25	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:																
9/10/10	P63/P64	388	JA	W43	860	4	9/13/10	BOS	BOS+388	VB	22045	30	30	8:11	8:16	Pass
Temperature (Outside)		73	°F	Overlap	6	in										
Comments:	Two welders on panel - see seam tracking below															
9/10/10	P63/P64	129	CN	W26	860	4	9/13/10	BOS+388	BOS+490	VB	22222	30	30	8:57	9:03	Pass
Temperature (Outside)		70	°F	Overlap	6	in	9/13/10	BOS+490	EOS	VB	22045	30	30	8:33	8:38	Pass
Comments:	Two welders on panel - see seam tracking above															
9/10/10	P64/P65	205	CN	W26	860	4	9/13/10	BOS	BOS+205	VB	22222	30	30	8:06	8:11	Pass
Temperature (Outside)		70	°F	Overlap	6	in										
Comments:																
9/10/10	P64/P65	179	JA	W43	860	4	9/13/10	BOS+205	BOS+280	VB	22045	30	30	7:28	7:33	Pass
Temperature (Outside)		70	°F	Overlap	6	in	9/13/10	BOS+280	EOS	VB	22222	30	30	7:25	7:30	Pass
Comments:																
9/10/10	P64/P66	152	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	8:38	8:43	Pass
Temperature (Outside)		70	°F	Overlap	6	in										
Comments:																

Pr.....ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
9/10/10	P58/P66	152	DA	W85	850	4	9/13/10	BOS	EOS	VB	22222	30	30	8:40	8:45	Pass
Temperature (Outside)		69	°F	Overlap	6	in										
Comments:																
9/10/10	P65/P67	384	JA	W43	860	4	9/13/10	BOS	EOS	VB	22222	30	30	8:00	8:05	Pass
Temperature (Outside)		67	°F	Overlap	6	in										
Comments:																
9/10/10	P58/P67	384	DA	W85	850	4	9/13/10	BOS	BOS+160	VB	22045	30	30	7:03	7:08	Pass
Temperature (Outside)		68	°F	Overlap	6	in	9/13/10	BOS+160	BOS+206	VB	22222	30	30	7:00	7:05	Pass
Comments:							9/13/10	BOS+206	EOS	VB	22045	30	30	7:55	8:00	Pass
9/10/10	P57/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	9:40	9:45	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P51/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22222	30	30	9:47	9:53	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P52/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	9:48	9:53	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																

Pri ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
9/10/10	P53/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22222	30	30	10:00	10:05	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P54/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	10:02	10:07	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P55/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22222	30	30	10:03	10:08	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P56/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	10:04	10:09	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P59/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22222	30	30	10:06	10:11	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P60/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	10:07	10:12	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																

Pr ıry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cell 9	Material:	60 mil HDPE (Textured)
Project ID:	01-0032	Location:	Hanford
Project No.	S013213A00	Peel (min):	91 ppi — Shear (min): 120 ppi
Installer:	ESI	N-D Max Pressure Loss:	2 psi — Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
9/10/10	P61/P42	11	DA	W85	850	4	9/13/10	BOS	EOS	VB	22222	30	30	10:20	10:25	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P65/P66	18	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	8:50	8:55	Pass
Temperature (Outside)		66	°F	Overlap	6	in										
Comments:																
9/10/10	P62/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	9:05	9:10	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P63/P42	13	DA	W85	850	4	9/13/10	BOS	EOS	VB	22222	30	30	9:06	9:11	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P64/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	9:08	9:13	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																
9/10/10	P66/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22222	30	30	9:09	9:14	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																

Pr.....ry Geomembrane Seam Tracking Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: 01-0032
Project No. S013213A00
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi
N-D Max Pressure Loss: 2 psi
Min Pres = 30 psi

Welding Data							Non-Destructive Test Data									
Date Welded	Seam No	Seam Length	Tech	Machine Number	Machine Temp (F)	Machine Speed	Date Tested	Start Location	End Location	Tester ID	Gauge ID	Pressure (psi) Start	Pressure (psi) End	Time Start	Time End	Pass/ Fail
9/10/10	P58/P42	22	DA	W85	850	4	9/13/10	BOS	EOS	VB	22045	30	30	9:11	9:16	Pass
Temperature (Outside)		68	°F	Overlap	6	in										
Comments:																

F.3.3

PRIMARY GEOMEMBRANE REPAIR LOG

Prim: _ Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: **Hanford ERDF Cell 9**
Project ID: **S013213A00-010032**
Installer: **ESI**

Material: **60 mil HDPE (Textured)**
Location: **Hanford**
Peel (min): **91** ppi Shear (min): **120** ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number

Codes

Defect Codes:

BO- Burn Out
BS- Boot Skirt
CO- Change of Overlap
CR- Crease
ID- Installation Damage
D - Installation Damage

MD - Manufacturing Damage
DP #- Destructive Sample
EE- Earthwork Equip. Dam.
Ext- Extension
PT- Pressure test cut

IO- Insufficient Overlap
SI- Soil Irregularity
SL- Slag on Textured
T- Panel Intersection
VL- Vacuum Test Leak

WD- Wind Damage
WR- Wrinkle
WS- Welder Restart
Other- Sand Bag under liner SB
Other- Water Bottle under liner WB

Repair Type: C- Cap B- Bead P - Patch EW- Extrusion Weld F-Fusion Weld

* Note -- Repairs were Spark Tested in areas that were inaccessible with the Vacuum Box.

* Note -- Repairs noted with an SR-XXA suffix are located in the same position as the originating repair.

* Note -- If a vacuum test fails in a pin point location, the location is ground and patched with a bead. The bead retest date is given in the Retest Pass Date Column. If a larger section of patch fails vacuum testing, the patch is capped. No large sections of extrusion welds failed vacuum testing during this project.

Seam Codes:

BOS- Beginning of Seam
EOS- End of Seam
MOP - Middle of Panel
TOE - Toe of Slope

Stationing begins at the top of slope for panels oriented North to South

Stationing begins at the west edge of panels oriented West to East

Pr ıry Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-001	ID	2-Jul-10	P1 BOP+515 (2)	P	2x2	EY	G48	550/500	10/1/10	Pass	
PR-002	ID	2-Jul-10	P2 BOP+515 MOP	P	1x1	EY	G48	550/500	8/5/10	Pass	
PR-003	ID	2-Jul-10	P2 BOP+520 MOP	P	1x1	EY	G48	550/500	8/5/10	Pass	
PR-004	BO	2-Jul-10	P2/P3 BOS+320	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-005	BO	7-Jul-10	P3/P4 BOS	P	2.5x4	EY	G48	550/500	9/27/10	Pass	
PR-006	ID	6-Jul-10	P5 BOP+505	P	1x1	EY	G48	550/500	8/5/10	Pass	
PR-007	DP-01	2-Jul-10	P1/P2 BOS+125	P	2x4	EY	G48	550/500	9/27/10	Pass	
PR-008	DP-02	2-Jul-10	P2/P3 BOS+60	P	2x4	EY	G48	550/500	9/27/10	Pass	
PR-009	ID	2-Jul-10	P2/P3 BOS+250	B	2-in	EY	G48	550/500	8/12/10	Pass	
PR-010	ID	2-Jul-10	P2/P3 BOS+280	B	18-in	EY	G48	550/500	8/12/10	Pass	
PR-011	ID	2-Jul-10	P2/P3 BOS+275	B	60-in	EY	G48	550/500	8/12/10	Pass	
PR-012	ID	2-Jul-10	P2/P3 BOS+330	B	24-in	EY	G48	550/500	8/12/10	Pass	
PR-013	BO	2-Jul-10	P2/P3 BOS+345	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-014	SB	2-Jul-10	P1/P2 BOS+345	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-015	WS	2-Jul-10	P6/P7 BOS+340	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-016	SB	2-Jul-10	P4/P5 BOS+340	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-017	DP-03	2-Jul-10	P3/P4 BOS+480	P	2x4	EY	G48	550/500	8/5/10	Pass	
PR-018	DP-04	2-Jul-10	P4/P5 BOS+225	P	2x4	EY	G48	550/500	9/27/10	Pass	
PR-019	DP-05	2-Jul-10	P5/P6 BOS+395	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-020	DP-06	7-Jul-10	P6/P7 BOS+300	P	2.5x4.5	EY	G48	550/500	8/12/10	Pass	

Primary Geomembrane Repair Log

ENVIROTECH

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-021	ID	6-Jul-10	P8 BOP+510	P	1x1	EY	G48	550/500	8/5/10	Pass	
PR-022	WS	7-Jul-10	P4/P5 BOS (2)	P	1.5x1.5 & 1x1	EY	G48	550/500	9/27/10	Pass	
PR-023	BO	7-Jul-10	P6/P7 BOS	P	2x12	EY	G48	550/500	9/27/10	Pass	
PR-024	ID	6-Jul-10	P11 BOP+510	P	1x1	EY	G48	550/500	8/5/10	Pass	
PR-025	ID	6-Jul-10	P12 BOP+510 (2)	P	1x1 & 1x1	EY	G48	550/500	8/5/10	Pass	
PR-026	ID	6-Jul-10	P13 BOP+510	P	1x1	EY	G48	550/500	8/5/10	Pass	
PR-027	DP-07	2-Jul-10	P7/P8 BOS+475	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-028	DP-08	2-Jul-10	P8/P9 BOS+200	P	2x4	EY	G48	550/500	9/29/10	Pass	
PR-029	DP-09	2-Jul-10	P9/P10 BOS+330	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-030	DP-10	2-Jul-10	P10/P11 BOS+310	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-031	BO	26-Jul-10	P12/P13 EOS	P	2.5x3	EY	G48	550/500	8/5/10	Pass	
PR-032	SB	2-Jul-10	P1 BOP+235 (Toe)	P	1x2	EY	G48	550/500	9/27/10	Pass	
PR-033	SB	2-Jul-10	P1 BOP+325 E. Side of Panel	P	2x2	EY	G48	550/500	10/1/10	Pass	
PR-034	MD	6-Jul-10	P11/P12 BOS+460	P	1x1	EY	G48	550/500	8/12/10	Pass	
PR-035	SB	2-Jul-10	P3/P4 BOS+235 (Toe)	P	2x2	EY	G48	550/500	9/27/10	Pass	
PR-036	DP-11	2-Jul-10	P11/P12 0+225	P	2x4	EY	G48	550/500	9/27/10	Pass	
PR-037	DP-12	2-Jul-10	P12/P13 BOS+430	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-038	DP-13	2-Jul-10	P9/PR-029	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-039	BO	7-Jul-10	P5/P6 BOS	P	2x2	EY	G48	550/500	9/27/10	Pass	
PR-040	ID	6-Jul-10	P9 BOP+510 MOP	B	6-in	EY	G48	550/500	8/5/10	Pass	

Pr...ary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-041	WS	12-Jul-10	P13/P14 BOS+455	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-042	WS	12-Jul-10	P14/P15 BOS+305	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-043	WS	12-Jul-10	P14/P15 BOS+425	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-044	SB	12-Jul-10	P5 BOP+480 MOP	P	4x4	EY	G48	550/500	8/5/10	Pass	
PR-045	BO	12-Jul-10	P16/P17 BOS+500	P	2x2	EY	G48	550/500	8/5/10	Pass	
PR-046	BO	12-Jul-10	P16/P17 BOS+425	P	1.5x1.5	EY	G48	550/500	8/12/10	Pass	
PR-047	BO	12-Jul-10	P15/P16 BOS+460	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-048	DP-14	12-Jul-10	P13/P14 BOS+325	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-049	DP-15	12-Jul-10	P14/P15 BOS+410	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-050	DP-16	12-Jul-10	P15/P16 0+95	P	2x4	EY	G48	550/500	9/27/10	Pass	
PR-051	DP-17	12-Jul-10	P16/P17 BOS+350	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-052	ID	26-Jul-10	P21 BOP+515	P	1.5x2	EY	G48	550/500	8/12/10	Pass	
PR-053	ID	26-Jul-10	P24 BOP+470 MOP	P	2x6	EY	G48	550/500	8/12/10	Pass	
PR-054	ID	26-Jul-10	P23 BOP+460 MOP	P	1.5x1.5	EY	G48	550/500	8/12/10	Pass	
PR-055	T	23-Jul-10	P1/P2/P23	P	1.5x1.5	EY	G48	500/450	8/5/10	Pass	
PR-056	T	23-Jul-10	P2/P3/P23	P	1.5x1.5	EY	G48	500/450	8/5/10	Pass	
PR-057	T	23-Jul-10	P3/P4/P23	P	4x2.5	EY	G48	500/450	8/5/10	Pass	
PR-058	T	23-Jul-10	P4/P5/P23	P	3x4	EY	G48	500/450	8/5/10	Pass	
PR-059	T	26-Jul-10	P5/P6/P23	P	2x3	EY	G48	550/500	8/5/10	Pass	
PR-060	T	26-Jul-10	P6/P7/P23	P	2x4	EY	G48	550/500	8/5/10	Pass	

Pr....ary Geomembrane Repair Log

ENVIROTECH

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-061	ID	23-Jul-10	P4/P23 BOS+11	P	2x4	EY	G48	500/450	8/5/10	Pass	
PR-062	ID	26-Jul-10	P7/P23 BOS+11	P	2x21	EY	G48	550/500	8/5/10	Pass	
PR-063	T	26-Jul-10	P7/P8/P23	P	2x4	EY	G48	550/500	8/5/10	Pass	
PR-064	T	26-Jul-10	P8/P9/P23	P	2x2.5	EY	G48	550/500	8/5/10	Pass	
PR-065	T	26-Jul-10	P9/P10/P23	P	2x2.5	EY	G48	550/500	8/5/10	Pass	
PR-066	T	26-Jul-10	P10/P11/P23	P	2x2.5	EY	G48	550/500	8/5/10	Pass	
PR-067	T	26-Jul-10	P11/P12/P23	P	2x2.5	EY	G48	550/500	8/5/10	Pass	
PR-068	T	26-Jul-10	P13/P14/P23	P	2.5x3	EY	G48	550/500	8/5/10	Pass	
PR-069	T	26-Jul-10	P14/P15/P23	P	2.5x3	EY	G48	550/500	8/5/10	Pass	
PR-070	T	26-Jul-10	P15/P16/P23	P	2.5x3	EY	G48	550/500	8/5/10	Pass	
PR-071	T	26-Jul-10	P16/P17/P23	P	2.5x3	EY	G48	550/500	8/5/10	Pass	
PR-072	T	26-Jul-10	P17/P18/P23	P	2x2.5	EY	G48	550/500	8/5/10	Pass	
PR-073	T	26-Jul-10	P18/P19/P23	P	2x2.5	EY	G48	550/500	8/5/10	Pass	
PR-074	T	26-Jul-10	P19/P20/P23	P	2x2	EY	G48	550/500	8/5/10	Pass	
PR-075	T	26-Jul-10	P20/P21/P23	P	2x2	EY	G48	550/500	8/5/10	Pass	
PR-076	T	26-Jul-10	P21/P22/P23	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-077	T	2-Aug-10	P22/Tie-in/P23	P	2.5x3.5	EY	G48	500/500	8/12/10	Pass	
PR-078	ID	29-Jul-10	P25 BOP+460 MOP	P	4x5	EY	G48	500/500	8/12/10	Pass	
PR-079	ID	29-Jul-10	P26 BOP+455 MOP	P	1.5x1.5	EY	G48	500/500	8/12/10	Pass	
PR-080	ID	29-Jul-10	P27 BOP+450 MOP	P	1.5x2	EY	G48	500/500	8/12/10	Pass	

Pr...ary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-081	BO	26-Jul-10	P25/P26 BOS+350	P	2.5x7	EY	G48	550/500	8/5/10	Pass	
PR-082	BO	29-Jul-10	P28/P29 BOS+300	P	2x4	EY	G48	500/500	8/5/10	Pass	
PR-083	BO	29-Jul-10	P28/P29 BOS+285	P	2x6.5	EY	G48	500/500	8/5/10	Pass	
PR-084	ID	29-Jul-10	P29 BOS+450 North 10-ft	P	1.5x1.5	EY	G48	500/500	8/12/10	Pass	
PR-085	BO			Capped with PR-119							
PR-086	BO	29-Jul-10	P31/P32 BOS+310	P	2x4	EY	G48	500/500	8/12/10	Pass	
PR-087	BO	29-Jul-10	P31/P32 BOS+330	P	1.5x2.5	EY	G48	500/500	8/12/10	Pass	
PR-088	ID	2-Aug-10	P33+450 MOP (2)	P	1.5x2 & 1x1	EY	G48	550/500	8/13/10	Pass	
PR-089	BO	27-Jul-10	P28/P29 BOS+155	P	2.5x5	EY	G48	550/500	8/5/10	Pass	
PR-090	SI	12-Aug-10	P33 BOS+260 MOP	B	6-in	EY	G49	550/550	8/12/10	Pass	
PR-091	DP-18	29-Jul-10	P17/P18 BOS+379	P	2x4.5	EY	G48	500/500	8/12/10	Pass	
PR-092	DP-19	29-Jul-10	P18/P19 BOS+210	P	2x4	EY	G48	500/500	9/27/10	Pass	
PR-093	DP-20	29-Jul-10	P19/P20 BOS+125	P	2x4	EY	G48	500/500	9/27/10	Pass	
PR-094	DP-21	2-Aug-10	P20/P21 BOS+300	P	2x4	EY	G48	500/500	8/12/10	Pass	
PR-095	DP-22	2-Aug-10	P21/P22 BOS+430	P	2x4	EY	G48	500/500	8/12/10	Pass	
PR-096	DP-23			Capped with PR-104							
PR-097	DP-24	2-Aug-10	P22A/Tie-in BOS+75	P	3x7	EY	G48	550/500	9/27/10	Pass	
PR-098	WS	18-Aug-10	P22/Tie-in BOS	P	5x5.5	EY	G49	550/550	9/17/10	Pass	
PR-099	WS	2-Aug-10	P22/Tie-in/P22A BOS+97	P	3x4	EY	G48	550/500	9/17/10	Pass	
PR-100	WS	2-Aug-10	P22/Tie-in BOS+250 (2)	P	2x4 & 2x5	EY	G48	550/500	8/12/10	Pass	

P ary Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING INC.

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-101	WS	2-Aug-10	P22/Tie-in BOS+275	P	3x6	EY	G48	550/500	8/12/10	Pass	
PR-102	WS	2-Aug-10	P22/Tie-in BOS+310	P	2x6	EY	G48	550/500	8/12/10	Pass	
PR-103	WS	2-Aug-10	P22/Tie-in BOS+375	P	2x9	EY	G48	500/500	8/12/10	Pass	
PR-104	WS	2-Aug-10	P22/Tie-in BOS+420	CAP	2x8	EY	G48	500/500	8/12/10	Pass	
PR-105	WS	2-Aug-10	P22/Tie-in BOS+442	P	2x7.5	EY	G48	500/500	8/12/10	Pass	
PR-106	ID	2-Aug-10	P22/Tie-in BOS+483	P	3x3.5	EY	G48	500/500	8/12/10	Pass	
PR-107	WS	2-Aug-10	P22/Tie-in BOS+501	P	2x2.5	EY	G48	500/500	8/12/10	Pass	
PR-108	WS	2-Aug-10	P22/Tie-in BOS+151	P	3x7.5	EY	G48	500/500	8/12/10	Pass	
PR-109	ID	13-Aug-10	P34 BOS+460	P	1.5x1.5	EY	G49	550/550	8/13/10	Pass	
PR-110	ID	13-Aug-10	P35 BOS+460	P	3.5x4	EY	G49	550/550	8/13/10	Pass	
PR-111	ID	13-Aug-10	P36 BOS+460	P	5x5.5	EY	G49	550/550	8/13/10	Pass	
PR-112	DP-25	26-Jul-10	P20/P23 BOS+15	P	2.5x4	EY	G48	550/500	8/5/10	Pass	
PR-113	DP-26	26-Jul-10	P23/P24 BOS+215	P	2.5x4	EY	G48	550/500	8/5/10	Pass	
PR-114	DP-27	26-Jul-10	P24/P25 BOS+310	P	2.5x4	EY	G48	550/500	8/5/10	Pass	
PR-115	DP-28	27-Jul-10	P25/P26 BOS+70	P	2.5x4	EY	G48	550/500	8/5/10	Pass	
PR-116	DP-29	27-Jul-10	P26/P27 BOS+200	P	2.5x4	EY	G48	550/500	8/1/10	Pass	
PR-117	DP-30	29-Jul-10	P27/P28 BOS+440	P	2x4	EY	G48	550/500	8/12/10	Pass	
PR-118	DP-31	29-Jul-10	P28/P29 BOS+270	P	2x4	EY	G48	500/500	8/5/10	Pass	
PR-119	DP-32	27-Jul-10	P29/P30 BOS+120	CAP	2x12	EY	G48	550/500	8/5/10	Pass	
PR-120	DP-33	29-Jul-10	P30/P31 BOS+320	P	2x4	EY	G48	550/500	8/12/10	Pass	

Pr ary Geomembrane Repair Log

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-121	ID	13-Aug-10	P37 BOS+460 MOP	B	5x5	EY	G49	550/550	8/5/10	Pass	
PR-122	EXT	23-Jul-10	P4 EOP	P	22-ft	EY	G48	500/450	8/12/10	Pass	
PR-123	DP-34	29-Jul-10	P31/P32 BOS+290	P	2x4	EY	G48	500/500	8/5/10	Pass	
PR-124	DP-35	27-Jul-10	P32/P33 BOS+50	P	2.5x4	EY	G48	550/500	8/5/10	Pass	
PR-125	DP-36	4-Aug-10	P33/P34 BOS+110	P	2.5x5.5	EY	G48	500/500	8/12/10	Pass	
PR-126	DP-37	4-Aug-10	P34/P35 BOS+300	P	2.5x5	EY	G48	500/500	8/12/10	Pass	
PR-127	ID	12-Aug-10	P35/P36 BOS+425	B	24-in	EY	G49	550/550	8/12/10	Pass	
PR-128	DP-38	4-Aug-10	P35/P36 BOS+190	P	3x6	EY	G48	500/500	8/12/10	Pass	
PR-129	DP-39	4-Aug-10	P36/P37 BOS+370	P	2.5x4	EY	G48	500/500	8/12/10	Pass	
PR-130	PT	26-Jul-10	P23/Tie-in BOS+13	P	3x3.5	EY	G48	550/500	8/12/10	Pass	
PR-131	T	26-Jul-10	P23/P24/Tie-in	P	1.5x1.5	EY	G48	550/500	8/12/10	Pass	
PR-132	PT	26-Jul-10	P24/Tie-in BOS+13	P	1.5x20	EY	G48	550/500	8/12/10	Pass	
PR-133	T	26-Jul-10	P24/P25/Tie-in	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-134	PT	26-Jul-10	P25/Tie-in BOS+10	P	3x6	EY	G48	550/500	8/12/10	Pass	
PR-135	T	29-Jul-10	P25/P26/Tie-in	P	1.5x2.5	EY	G48	550/500	8/12/10	Pass	
PR-136	PT	29-Jul-10	P26/Tie-in BOS+5	P	2x3.5	EY	G48	550/500	8/12/10	Pass	
PR-137	T	29-Jul-10	P26/P27/Tie-in	P	2x3	EY	G48	550/500	8/12/10	Pass	
PR-138	PT	29-Jul-10	P27/Tie-in BOS+5	P	3x5	EY	G48	550/500	8/12/10	Pass	
PR-139	T	29-Jul-10	P27/P28/Tie-in	P	2x3	EY	G48	550/500	8/12/10	Pass	
PR-140	PT	29-Jul-10	P28/Tie-in BOS+5	P	2.5x3	EY	G48	550/500	8/12/10	Pass	

Prima Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Locatio	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-141	T	29-Jul-10	P28/P29/Tie-in	P	2x3	EY	G48	550/500	8/12/10	Pass	
PR-142	PT	29-Jul-10	P29/Tie-in BOS+7	P	3x5.5	EY	G48	550/500	8/12/10	Pass	
PR-143	T	29-Jul-10	P29/P30/Tie-in	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-144	PT	29-Jul-10	P30/Tie-in BOS+5	P	2x2	EY	G48	550/500	8/12/10	Pass	
PR-145	DP-40	26-Jul-10	P23/PR112	P	2.5x4.5	EY	G48	550/500	8/5/10	Fail	PR-145A
PR-145A	DP-40	5-Aug-10	Retest of Extrusion weld	-	-	EY	G48	500/450	8/5/10	Pass	
PR-146	DP26A	29-Jul-10	P23/P24 BOS+205	CAP	2.5x22	EY	G48	500/500	8/5/10	Pass	
PR-147	DP-26B	29-Jul-10	P23/P24 BOS+225	CAP	2.5x22	EY	G48	500/500	8/5/10	Pass	
PR-148	DP-41	4-Aug-10	P37/P38 BOS+430	P	2x5	EY	G48	500/500	8/12/10	Pass	
PR-149	DP-42	4-Aug-10	P38/P39 BOS+60	P	2x6	EY	G48	500/500	8/5/10	Pass	
PR-150	DP-43	4-Aug-10	P39/P40 BOS+160	P	2x5.5	EY	G48	500/500	8/5/10	Pass	
PR-151	DP-44	4-Aug-10	P40/P41 BOS+325	P	2x5.5	EY	G48	500/500	8/12/10	Pass	
PR-152	DP-45	4-Aug-10	P41/42 BOS 445	P	2x6	EY	G48	500/500	9/16/10	Pass	
PR-153	ID	13-Aug-10	P40 BOS+460	P	1x1.5	EY	G49	550/550	8/18/10	Pass	
PR-154	BO	13-Aug-10	P40/Tie-in BOS+11	P (2)	2x2 & 2x2	EY	G49	550/550	8/18/10	Pass	
PR-155	T	13-Aug-10	P39/P40/Tie-in	P (2)	2x2 & 2x2	EY	G49	550/550	8/18/10	Pass	
PR-156	T	13-Aug-10	P39/P38/Tie-in	P (2)	2x2 & 3x6	EY	G49	550/550	8/18/10	Pass	
PR-157	T	13-Aug-10	P37/P38/Tie-in	P (2)	2x2 & 2x2	EY	G49	550/550	8/13/10	Pass	
PR-158	T	13-Aug-10	P36/P37/Tie-in	P (2)	3x6 & 3x6	EY	G49	550/550	8/13/10	Pass	
PR-159	T	13-Aug-10	P36/P35/Tie-in	P (2)	2x2 & 2x2	EY	G49	550/550	8/13/10	Pass	

Pı ıry Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-160	T	13-Aug-10	P35/Tie-in	P	1x1	EY	G49	550/550	8/13/10	Pass	
PR-161	T	13-Aug-10	P34/P35/Tie-in	P (2)	2x2 &3x4	EY	G49	550/550	8/13/10	Pass	
PR-162	T	13-Aug-10	P34/P33/Tie-in	P (2)	2x2 & 2x2	EY	G49	550/550	8/13/10	Pass	
PR-163	T	13-Aug-10	P33/P32/Tie-in	P (3)	2x2&1.5x3&3x5	EY	G49	550/550	8/13/10	Pass	
PR-164	T	13-Aug-10	P31/P32/Tie-in	P (2)	3x3 & 2x2	EY	G49	550/550	8/13/10	Pass	
PR-165	T	13-Aug-10	P31/P30/Tie-in	P (2)	3x3 & 2x2	EY	G49	550/550	8/13/10	Pass	
PR-166	ID	30-Aug-10	P40/P41 BOS	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-167	ID	1-Oct-10	P1 BOP+290 20' E. of P1/P2	P	2x5	EY	G48	550/550	10/1/10	Pass	
PR-168	BO	26-Aug-10	P45/P46 BOS+410	P	2x2	EY	G49	550/550	9/16/10	Pass	
PR-169	BO	26-Aug-10	P46/P47 BOS+500	CAP	2x15	EY	G49	550/550	9/16/10	Pass	
PR-170	BO	26-Aug-10	P49/P50 BOS+255	P	2x2	EY	G49	550/550	9/16/10	Pass	
PR-171	DP-46	26-Aug-10	P44/P45 BOS+110	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-172	ID	26-Aug-10	P44 BOP+130 MOP	P	1x1	EY	G49	550/550	9/16/10	Pass	
PR-173	DP-47	26-Aug-10	P43/P44 BOS+275	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-174	DP-48	26-Aug-10	P46/P47 BOS+400	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-175	DP-49	26-Aug-10	P48/P49 BOS+475	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-176	DP-50	26-Aug-10	P45/P46 BOS+40	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-177	DP-51	26-Aug-10	P47/P48 BOS+130	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-178	DP-52	26-Aug-10	P49/P50 BOS+215	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-179	ID	26-Aug-10	P42/Tie-in	P	5x5 & 1x1	EY	G49	550/550	9/16/10	Pass	

Primary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING, INC.

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-180	ID	30-Aug-10	P41/Tie-in BOS+11	P	3x6	EY	G49	550/550	9/16/10	Pass	
PR-181	BO	30-Aug-10	P41/Tie-in BOS+5	P	1x1	EY	G49	550/550	9/16/10	Pass	
PR-182	T	30-Aug-10	P41/P42/Tie-in	P	2x2 & 2x4	EY	G49	550/550	9/16/10	Pass	
PR-183	T	30-Aug-10	P42/P43/Tie-in	P	2x2 & 3x4	EY	G49	550/550	9/16/10	Pass	
PR-184	WS	30-Aug-10	P43/Tie-in BOS+468	P	3x4	EY	G49	550/550	9/16/10	Pass	
PR-185	DP-53	30-Aug-10	P43/Tie-in BOS+429	P	L-2x8	EY	G49	550/550	9/16/10	Pass	
PR-186	WS	30-Aug-10	P43/Tie-in BOS+385	P	2x5	EY	G49	550/550	9/16/10	Pass	
PR-187	WS	26-Aug-10	P43/Tie-in BOS+347	P	3x5	EY	G49	550/550	9/16/10	Pass	
PR-188	ID	26-Aug-10	P43/Tie-in BOS+322	P	1x1	EY	G49	550/550	9/16/10	Pass	
PR-189	WS	26-Aug-10	P43/Tie-in BOS+301	P	2x5	EY	G49	550/550	9/16/10	Pass	
PR-190	WS	26-Aug-10	P43/Tie-in BOS+245	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-191	ID	14-Sep-10	P43/Tie-in BOS	P	3x3	EY	G49	500/500	9/16/10	Pass	
PR-192	DP-54	26-Aug-10	P42/PR-179	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-193	T	30-Aug-10	P42/P43/P44	P	2x6	EY	G49	550/550	9/16/10	Pass	
PR-194	T	30-Aug-10	P42/P44/P45	P	2x3	EY	G49	550/550	9/16/10	Pass	
PR-195	T	30-Aug-10	P42/P46/P47	P	2x3	EY	G49	550/550	9/16/10	Pass	
PR-196	T	30-Aug-10	P42/P47/P48	P	1.5x2.5	EY	G49	550/550	9/16/10	Pass	
PR-197	T	30-Aug-10	P42/P49/P50	P	2x3	EY	G49	550/550	9/16/10	Pass	
PR-198	T	30-Aug-10	P42/P48/P49	P	2x2.5	EY	G49	550/550	9/16/10	Pass	
PR-199	PT	30-Aug-10	P44/P42 BOS+11	P	1x1	EY	G49	550/550	9/16/10	Pass	

Pr ıry Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-200	SB	13-Sep-10	P54/P55 BOS+500	P	2x2.5	EY	G49	500/500	9/16/10	Pass	
PR-201	WS	14-Sep-10	P55/P56 BOS+250	P	1.5x1.5	EY	G49	550/550	9/16/10	Pass	
PR-202	DP-55	13-Sep-10	P51/P52 BOS + 480	P	2x7.5	EY	G49	500/500	9/16/10	Pass	
PR-203	PT	14-Sep-10	P51/P52 BOS+270	P	1.5x1.5	EY	G49	550/550	9/16/10	Pass	
PR-204	T	13-Sep-10	P51/P52/P42	P	2.5x4	EY	G49	500/500	9/16/10	Pass	
PR-205	BO	13-Sep-10	P57/P58 BOS+285 (N. Toe)	P	2x2.5	EY	G49	500/500	9/14/10	Pass	
PR-206	SB	13-Sep-10	P58 BOS+515 MOP	P	1x1	EY	G49	500/500	9/16/10	Pass	
PR-207	T	13-Sep-10	P57/P51/P42	P	1.5x2	EY	G49	500/500	9/16/10	Pass	
PR-208	BO	24-Sep-10	P56/P59 10-ft from EOS	P	2x2	EY	G48	550/550	9/24/10	Pass	
PR-209	SB	14-Sep-10	P61 BOP+173 MOP	P	1.5x1.5	EY	G49	550/550	9/16/10	Pass	
PR-210	DP-56	14-Sep-10	P52/P53 BOS+376	P	2x4.5	EY	G49	550/550	9/16/10	Pass	
PR-211	DP-57	14-Sep-10	P53/P54 BOS+319	P	2x4.5	EY	G49	550/550	9/16/10	Pass	
PR-212	DP-58	14-Sep-10	P54/P55 BOS+230	P	2x4.5	EY	G49	550/550	9/16/10	Pass	
PR-213	DP-59	14-Sep-10	P54/P55 BOS+160	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-214	DP-60	13-Sep-10	P51/P57 BOS+375	P	2x4	EY	G48	550/550	9/16/10	Pass	
PR-215	DP-61	13-Sep-10	P57/P58 BOS+387	P	2x4.5	EY	G48	550/550	9/14/10	Pass	
PR-216	DP-62	14-Sep-10	P56/P59 BOS+65	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-217	ID	14-Sep-10	P64 BOS+125 1-ft West	P	1x1	EY	G49	550/550	9/14/10	Pass	
PR-218	WS	13-Sep-10	P63/P64 BOS+388	P	2x2.5	EY	G49	500/500	9/14/10	Pass	
PR-219	DP-66	13-Sep-10	P62/P63 BOS+435	P	2x5.5	EY	G49	500/500	9/16/10	Pass	

Pr...ary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-220	WS	13-Sep-10	P64/P65 BOS+280	P	2x2.5	EY	G49	500/500	9/14/10	Pass	
PR-221	WS	13-Sep-10	P64/P65 BOS+205	P	2x2.5	EY	G48	550/550	9/14/10	Pass	
PR-222	T	13-Sep-10	P64/P65/P66/P67	P	2x2.5	EY	G49	500/500	9/14/10	Pass	
PR-223	T	13-Sep-10	P58/P65/P66/P67	P	4.5x3	EY	G49	500/500	9/14/10	Pass	
PR-224	BO	13-Sep-10	P63/P64 BOS+490	P	1x1.5	EY	G49	500/500	9/16/10	Pass	
PR-225	D	13-Sep-10	P42 BOP+300 MOP	B	6-in	EY	G49	500/500	9/16/10	Pass	
PR-226	DP-63	14-Sep-10	P59/P60 BOS+465	P	2x4	EY	G49	550/550	9/16/10	Pass	
PR-227	DP-64	14-Sep-10	P60/P61 BOS+365	P	2x5	EY	G49	550/550	9/17/10	Pass	
PR-228	DP-65	13-Sep-10	P50/P62 BOS+350	P	2x4	EY	G49	500/500	9/14/10	Pass	
PR-229	DP-67	13-Sep-10	P63/P64 BOS+224	P	2x4	EY	G48	550/550	9/14/10	Pass	
PR-230	DP-68	13-Sep-10	P64/P65 BOS+100	P	2x4	EY	G48	550/550	9/14/10	Pass	
PR-231	DP-69	14-Sep-10	P65/P67 BOS+25	P	2x4	EY	G49	500/500	9/20/10	Pass	
PR-232	DP-70	13-Sep-10	P58/P66 BOS+445	P	2x4	EY	G49	500/500	9/14/10	Pass	
PR-233	DP-71	13-Sep-10	P42/P66 EOP	P	2.5x6	EY	G49	500/500	9/14/10	Pass	
PR-234	WS	13-Sep-10	P58/P67 BOS+160	P	1.5x1.5	EY	G48	550/550	9/14/10	Pass	
PR-235	WS	13-Sep-10	P58/P67 BOS+206	P	1.5x2	EY	G48	550/550	9/14/10	Pass	
PR-236	DP-72	13-Sep-10	P42/PR-233	P	2x4	EY	G49	500/500	9/16/10	Pass	
PR-237	D	13-Sep-10	P42 BOP+200 MOP (2)	P	1x4 & 1.5x3	EY	G49	500/500	9/16/10	Pass	
PR-238	T	13-Sep-10	P42/P50/P62	P	2.5x2.5	EY	G49	500/500	9/16/10	Pass	
PR-239	T	13-Sep-10	P42/P62/P63	P	2x2	EY	G49	500/500	9/16/10	Pass	

Pr ıry Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-240	T	13-Sep-10	P42/P63/P64	P	1.5x2	EY	G49	500/500	9/16/10	Pass	
PR-241	T	13-Sep-10	P42/P64/P66	P	1.5x1.5	EY	G49	500/500	9/16/10	Pass	
PR-242	T	13-Sep-10	P42/P57/P58	P	1.5x2	EY	G49	500/500	9/16/10	Pass	
PR-243	T	13-Sep-10	P42/P52/P53	P	1.5x2	EY	G49	500/500	9/16/10	Pass	
PR-244	T	13-Sep-10	P42/P53/P54	P	1.5x2	EY	G49	500/500	9/16/10	Pass	
PR-245	T	13-Sep-10	P42/P54/P55	P	1.5x2	EY	G49	500/500	9/16/10	Pass	
PR-246	T	13-Sep-10	P42/P55/P56	P	1.5x2	EY	G49	500/500	9/16/10	Pass	
PR-247	T	14-Sep-10	P42/P56/P59	P	1.5x2	EY	G49	550/550	9/16/10	Pass	
PR-248	T	14-Sep-10	P42/P59/P60	P	2x2	EY	G49	550/550	9/16/10	Pass	
PR-249	T	14-Sep-10	P42/P60/P61	P	1.5x2	EY	G49	550/550	9/16/10	Pass	
PR-250	ID	13-Sep-10	P42 BOP+100 MOP	B	2-in	EY	G49	500/500	9/16/10	Pass	
PR-251	ID	14-Sep-10	P58 BOS+285 MOP	P	1x1	EY	G49	550/550	9/14/10	Pass	
PR-252	SB	14-Sep-10	P59 BOP+385 MOP	P	1.5x1.5	EY	G49	550/550	9/16/10	Pass	
PR-253	ID	14-Sep-10	P53 BOS+325 MOP	B	2-in	EY	G49	550/550	9/16/10	Pass	
PR-254	BO	14-Sep-10	P65/P67 BOS+15	P	2x2	EY	G49	500/500	9/21/10	Pass	
PR-255	PT	21-Sep-10	P62/P63 BOS+15	P	2x2	EY	G48	550/550	9/21/10	Pass	
PR-256	SB	21-Sep-10	P59 BOS+370 MOP	P	2x2	DA	G15	550/550	9/17/10	Pass	
PR-257	SB	17-Sep-10	P45 BOS+27 MOP	P	1x2	EY	G48	550/550	9/20/10	Pass	
PR-258	ID	21-Sep-10	P41 285' E. of W. Tie in MOP	B	3-in	EY	G48	550/550	9/21/10	Pass	
PR-259	Boot	22-Sep-10	P65 BOP (Leachate Pipe Boot)	Boot	8x8	DA	G15	550/550	9/22/10	Pass	

Pr...ary Geomembrane Repair Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cell 9
Project ID: S013213A00-010032
Installer: ESI

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi
Shear (min): 120 ppi

Repair No.	Code	Date	Location	Type	Size (ft)	Tech	Equip. ID	Temp	Date	Pass/Fail	Retest Number
PR-260	Boot	21-Sep-10	P62/P63 Anchor Trench (Lysimeter Boot)	Boot	5x5	EY	G48	550/550	9/22/10	Pass	
PR-261	WB	21-Sep-10	P64 BOS+50 MOP	P	2x2	DA	G15	550/550	9/21/10	Pass	
PR-262	DP-73	1-Oct-10	P1 BOS+515 3-ft from East side of Panel	P	2x4	EY	G48	550/550	10/1/10	Pass	
PR-263	DP-74	1-Oct-10	P22/PR-98	P	2x5	EY	G48	550/550	10/1/10	Pass	
PR-264	DP-75	1-Oct-10	P3/PR-05	P	2x5	EY	G48	550/550	10/1/10	Pass	
PR-265	DP-74A	7-Oct-10	PR-98/P22A	P	2x5	EY	G48	550/550	10/7/10	Pass	
			DP-74 was accidentally thrown away, DP-74A was cut to replace DP-74								

F.3.4

PRIMARY GEOMEMBRANE SEAM DESTRUCTIVE SAMPLE LOG

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P1/P2	PR-007	6/6/10	LH	155	SE-1	130	SE-1	Pass	178	BRK	Pass
				139	SE-1	119	SE-1	Pass	175	BRK	Pass
Sample Number:		**DP-01**		150	SE-1	130	SE-1	Pass	179	BRK	Pass
Comments:				145	SE-1	124	SE-1	Pass	178	BRK	Pass
				149	SE-1	128	SE-1	Pass	179	BRK	Pass
P2/P3	PR-008	7/6/10	LH	167	SE-1	127	SE-1	Pass	193	BRK	Pass
				154	SE-1	128	SE-1	Pass	190	BRK	Pass
Sample Number:		**DP-02**		158	SE-1	130	SE-1	Pass	189	BRK	Pass
Comments:				153	SE-1	124	SE-1	Pass	190	BRK	Pass
				155	SE-1	127	SE-1	Pass	192	BRK	Pass
P3/P4	PR-017	7/6/10	LH	125	SE-1	138	SE-1	Pass	193	BRK	Pass
				150	SE-1	134	SE-1	Pass	188	BRK	Pass
Sample Number:		**DP-03**		166	SE-1	150	AD-BRK 10%	Pass	193	BRK	Pass
Comments:				149	SE-1	125	SE-1	Pass	191	BRK	Pass
				156	AD-BRK 10%	119	SE-1	Pass	194	BRK	Pass
P4/P5	PR-018	7/6/10	LH	156	SE-1	136	SE-1	Pass	187	BRK	Pass
				134	SE-1	120	SE-1	Pass	185	BRK	Pass
Sample Number:		**DP-04**		167	SE-1	135	SE-1	Pass	187	BRK	Pass
Comments:				125	SE-1	122	SE-1	Pass	184	BRK	Pass
				136	SE-1	123	SE-1	Pass	188	BRK	Pass
P5/P6	PR-019	7/6/10	LH	139	SE-1	135	SE-1	Pass	190	BRK	Pass
				141	SE-1	135	SE-1	Pass	185	BRK	Pass
Sample Number:		**DP-05**		139	SE-1	140	SE-1	Pass	185	BRK	Pass
Comments:				124	SE-1	142	SE-1	Pass	185	BRK	Pass
				131	SE-1	130	SE-1	Pass	184	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P6/P7	PR-020	7/6/10	LH	152	SE-1	146	SE-1	Pass	176	BRK	Pass
				138	SE-1	133	SE-1	Pass	173	BRK	Pass
Sample Number:		**DP-06**		133	SE-1	123	SE-1	Pass	176	BRK	Pass
Comments:				154	SE-1	141	SE-1	Pass	173	BRK	Pass
				134	SE-1	142	SE-1	Pass	175	BRK	Pass
P7/P8	PR-027	7/6/10	LH	155	SE-1	139	SE-1	Pass	187	BRK	Pass
				125	SE-1	123	SE-1	Pass	187	BRK	Pass
Sample Number:		**DP-07**		153	SE-1	137	SE-1	Pass	190	BRK	Pass
Comments:				132	SE-1	147	SE-1	Pass	187	BRK	Pass
				137	SE-1	128	SE-1	Pass	188	BRK	Pass
P8/P9	PR-028	7/6/10	LH	134	SE-1	141	SE-1	Pass	179	BRK	Pass
				135	SE-1	124	SE-1	Pass	177	BRK	Pass
Sample Number:		**DP-08**		137	SE-1	143	SE-1	Pass	179	BRK	Pass
Comments:				129	SE-1	128	SE-1	Pass	175	BRK	Pass
				132	SE-1	126	SE-1	Pass	178	BRK	Pass
P9/P10	PR-029	7/6/10	LH	127	SE-1	130	SE-1	Pass	186	BRK	Pass
				134	SE-1	128	SE-1	Pass	185	BRK	Pass
Sample Number:		**DP-09**		143	SE-1	125	SE-1	Pass	188	BRK	Pass
Comments:				130	SE-1	121	SE-1	Pass	185	BRK	Pass
				135	SE-1	128	SE-1	Pass	186	BRK	Pass
P10/P11	PR-030	7/6/10	LH	134	AD-BRK 10%	132	SE-1	Pass	186	BRK	Pass
				147	AD-BRK 10%	139	SE-1	Pass	182	BRK	Pass
Sample Number:		**DP-10**		139	SE-1	130	SE-1	Pass	183	BRK	Pass
Comments:				143	SE-1	130	SE-1	Pass	183	BRK	Pass
				136	SE-1	119	SE-1	Pass	184	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P11/P12	PR-036	7/6/10	LH	137	SE-1	130	SE-1	Pass	179	BRK	Pass
				140	SE-1	130	SE-1	Pass	177	BRK	Pass
Sample Number:		**DP-11**		137	SE-1	135	SE-1	Pass	180	BRK	Pass
Comments:				145	SE-1	128	SE-1	Pass	175	BRK	Pass
				135	SE-1	126	SE-1	Pass	179	BRK	Pass
P12/P13	PR-037	7/6/10	LH	142	SE-1	148	SE-1	Pass	188	BRK	Pass
				165	SE-1	130	SE-1	Pass	185	BRK	Pass
Sample Number:		**DP-12**		159	SE-1	139	SE-1	Pass	187	BRK	Pass
Comments:				146	SE-1	144	SE-1	Pass	184	BRK	Pass
				148	SE-1	140	SE-1	Pass	184	BRK	Pass
P9/PR-029	PR-038	7/6/10	LH	136	SE-3			Pass	137	BRK	Pass
				137	SE-3			Pass	183	BRK	Pass
Sample Number:		**DP-13**		151	SE-3			Pass	140	BRK	Pass
Comments:	Extrusion weld			122	SE-3			Pass	180	BRK	Pass
				138	SE-3			Pass	174	BRK	Pass
P13/P14	PR-048	7/13/10	LH	161	SE-1	153	SE-1	Pass	183	BRK	Pass
				145	SE-1	153	SE-1	Pass	179	BRK	Pass
Sample Number:		**DP-14**		139	SE-1	140	SE-1	Pass	183	BRK	Pass
Comments:				160	SE-1	151	SE-1	Pass	181	BRK	Pass
				146	SE-1	136	SE-1	Pass	183	BRK	Pass
P14/P15	PR-049	7/13/10	LH	151	SE-1	151	SE-1	Pass	183	BRK	Pass
				149	SE-1	135	SE-1	Pass	171	BRK	Pass
Sample Number:		**DP-15**		149	SE-1	138	SE-1	Pass	184	BRK	Pass
Comments:				143	SE-1	140	SE-1	Pass	181	BRK	Pass
				138	SE-1	127	SE-1	Pass	182	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P15/P16	PR-050	7/13/10	LH	129	SE-1	130	SE-1	Pass	178	BRK	Pass
				113	SE-1	142	SE-1	Pass	175	BRK	Pass
Sample Number:		**DP-16**		125	SE-1	141	SE-1	Pass	178	BRK	Pass
Comments:				117	SE-1	157	SE-1	Pass	176	BRK	Pass
				125	SE-1	134	SE-1	Pass	177	BRK	Pass
P16/P17	PR-051	7/13/10	LH	144	SE-1	143	SE-1	Pass	175	BRK	Pass
				144	SE-1	140	SE-1	Pass	173	BRK	Pass
Sample Number:		**DP-17**		138	SE-1	149	SE-1	Pass	176	BRK	Pass
Comments:				126	SE-1	141	SE-1	Pass	173	BRK	Pass
				139	SE-1	140	SE-1	Pass	174	BRK	Pass
P17/P18	PR-091	7/30/10	RS	164	SE-1	149	BRK	Pass	186	BRK	Pass
				154	SE-1	145	SE-1	Pass	190	BRK	Pass
Sample Number:		**DP-18**		162	BRK	140	SE-1	Pass	195	BRK	Pass
Comments:				158	BRK	151	SE-1	Pass	189	BRK	Pass
				155	BRK	150	SE-1	Pass	195	BRK	Pass
P18/P19	PR-092	8/2/10	RS	119	SE-1	125	SE-1	Pass	172	BRK	Pass
				119	SE-1	125	SE-1	Pass	178	BRK	Pass
Sample Number:		**DP-19**		127	SE-1	122	SE-1	Pass	173	BRK	Pass
Comments:				113	SE-1	122	SE-1	Pass	175	BRK	Pass
				125	BRK	140	SE-1	Pass	177	BRK	Pass
P19/P20	PR-093	8/2/10	RS	128	SE-1	131	SE-1	Pass	177	BRK	Pass
				133	SE-1	127	SE-1	Pass	179	BRK	Pass
Sample Number:		**DP-20**		132	SE-1	131	SE-1	Pass	179	BRK	Pass
Comments:				121	SE-1	135	SE-1	Pass	182	BRK	Pass
				131	SE-1	135	SE-1	Pass	176	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P20/P21	PR-094	8/4/10	TW	125	SE-1	129	SE-1	Pass	185	BRK	Pass
				136	SE-1	120	SE-1	Pass	183	BRK	Pass
Sample Number:		**DP-21**		126	SE-1	125	SE-1	Pass	187	BRK	Pass
Comments:				130	SE-1	120	SE-1	Pass	187	BRK	Pass
				155	SE-1	127	SE-1	Pass	177	BRK	Pass
P21/P22	PR-095	8/3/10	RS	134	SE-1	121	SE-1	Pass	190	BRK	Pass
				125	SE-1	120	SE-1	Pass	191	BRK	Pass
Sample Number:		**DP-22**		132	SE-1	127	SE-1	Pass	188	BRK	Pass
Comments:				124	SE-1	124	SE-1	Pass	185	BRK	Pass
				124	SE-1	121	SE-1	Pass	182	BRK	Pass
P22/Tie-in	PR-096	8/4/10	RS	173	SE-1	152	SE-1	Pass	177	BRK	Pass
				159	SE-1	137	SE-1	Pass	183	BRK	Pass
Sample Number:		**DP-23**		164	SE-1	129	SE-1	Pass	157	BRK	Pass
Comments:				138	SE-1	137	SE-1	Pass	180	BRK	Pass
				140	SE-1	161	SE-1	Pass	177	BRK	Pass
P22/P22A	PR-097	8/4/10	RS	125	SE-1	121	SE-1	Pass	179	BRK	Pass
				141	SE-1	124	SE-1	Pass	174	BRK	Pass
Sample Number:		**DP-24**		126	SE-1	119	SE-1	Pass	176	BRK	Pass
Comments:				126	SE-1	126	SE-1	Pass	152	BRK	Pass
				127	SE-1	138	SE-1	Pass	176	BRK	Pass
P20/P23	PR-112	7/30/10	LH	124	SE-1	141	SE-1	Pass	187	BRK	Pass
				128	SE-1	132	SE-1	Pass	187	BRK	Pass
Sample Number:		**DP-25**		124	AD-BRK 10%	152	SE-1	Pass	189	BRK	Pass
Comments:				131	SE-1	136	SE-1	Pass	189	BRK	Pass
				124	SE-1	134	SE-1	Pass	189	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P23/P24	PR-113	7/24/10	TW	118	SE-1	123	SE-1	Pass	173	BRK	Pass
				128	SE-1		AD	Fail	173	BRK	Pass
Sample Number:		**DP-26**		123	SE-1		AD	Fail	176	BRK	Pass
Comments:	Destructive Test Failed				AD	128	SE-1	Fail	176	BRK	Pass
				124	SE-1	139	SE-1	Pass	166	BRK	Pass
P23/P24	PR-146	7/30/10	TW	124	SE-1	118	SE-1	Pass	181	BRK	Pass
				116	SE-1	118	SE-1	Pass	181	BRK	Pass
Sample Number:		**DP-26A**		113	SE-1	124	SE-1	Pass	181	BRK	Pass
Comments:	15-ft East of DP-26			124	SE-1	118	SE-1	Pass	182	BRK	Pass
				112	SE-1	118	SE-1	Pass	181	BRK	Pass
P23/P24	PR-147	7/30/10	TW	141	SE-1	143	AD-BRK 10%	Pass	181	BRK	Pass
				128	SE-1	128	SE-1	Pass	177	BRK	Pass
Sample Number:		**DP-26B**		134	SE-1	135	SE-1	Pass	178	BRK	Pass
Comments:	15-ft West of DP-26			138	SE-1	130	SE-1	Pass	176	BRK	Pass
				131	SE-1	131	SE-1	Pass	180	BRK	Pass
P24/P25	PR-114	7/27/10	LH	156	SE-1	173	SE-1	Pass	197	BRK	Pass
				147	SE-1	161	SE-1	Pass	197	BRK	Pass
Sample Number:		**DP-27**		157	SE-1	172	SE-1	Pass	197	BRK	Pass
Comments:				168	SE-1	164	SE-1	Pass	197	BRK	Pass
				151	SE-1	150	SE-1	Pass	195	BRK	Pass
P25/P26	PR-115	7/30/10	TW	141	SE-1	130	SE-1	Pass	181	BRK	Pass
				119	SE-1	124	SE-1	Pass	177	BRK	Pass
Sample Number:		**DP-28**		125	SE-1	129	SE-1	Pass	178	BRK	Pass
Comments:				126	SE-1	124	SE-1	Pass	176	BRK	Pass
				118	SE-1	129	SE-1	Pass	180	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P26/P27	PR-116	7/30/10	TW	121	SE-1	126	SE-1	Pass	177	BRK	Pass
				118	SE-1	115	SE-1	Pass	175	BRK	Pass
Sample Number:		**DP-29**		124	SE-1	121	SE-1	Pass	178	BRK	Pass
Comments:				118	SE-1	152	SE-1	Pass	175	BRK	Pass
				124	SE-1	120	SE-1	Pass	175	BRK	Pass
P27/P28	PR-117	8/2/10	RS	132	SE-1	120	SE-1	Pass	182	BRK	Pass
				126	SE-1	127	SE-1	Pass	179	BRK	Pass
Sample Number:		**DP-30**		123	SE-1	119	SE-1	Pass	168	BRK	Pass
Comments:				123	SE-1	121	SE-1	Pass	181	BRK	Pass
				124	SE-1	128	SE-1	Pass	184	BRK	Pass
P28/P29	PR-118	8/2/10	RS	128	SE-1	126	SE-1	Pass	165	BRK	Pass
				136	SE-1	160	SE-1	Pass	186	BRK	Pass
Sample Number:		**DP-31**		150	SE-1	143	SE-1	Pass	185	BRK	Pass
Comments:				123	SE-1	129	SE-1	Pass	185	BRK	Pass
				133	SE-1	152	SE-1	Pass	188	BRK	Pass
P29/P30	PR-119	7/30/10	TW	146	SE-1	125	SE-1	Pass	185	BRK	Pass
				151	SE-1	127	SE-1	Pass	178	BRK	Pass
Sample Number:		**DP-32**		142	SE-1	130	SE-1	Pass	181	BRK	Pass
Comments:				128	SE-1	128	SE-1	Pass	185	BRK	Pass
				147	SE-1	134	SE-1	Pass	183	BRK	Pass
P30/P31	PR-120	7/30/10	TW	154	SE-1	135	SE-1	Pass	184	BRK	Pass
				145	SE-1	120	SE-1	Pass	179	BRK	Pass
Sample Number:		**DP-33**		149	SE-1	130	SE-1	Pass	180	BRK	Pass
Comments:				121	SE-1	119	SE-1	Pass	179	BRK	Pass
				121	SE-1	129	SE-1	Pass	182	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P31/P32	PR-123	8/2/10	RS	131	SE-1	118	SE-1	Pass	179	BRK	Pass
				130	SE-1	128	SE-1	Pass	176	BRK	Pass
Sample Number:		**DP-34**		133	SE-1	128	SE-1	Pass	180	BRK	Pass
Comments:				127	SE-1	133	SE-1	Pass	178	BRK	Pass
				125	SE-1	125	SE-1	Pass	176	BRK	Pass
P32/P33	PR-124	7/30/10	TW	120	SE-1	113	SE-1	Pass	173	BRK	Pass
				117	SE-1	129	SE-1	Pass	169	BRK	Pass
Sample Number:		**DP-35**		147	SE-1	130	SE-1	Pass	174	BRK	Pass
Comments:				150	SE-1	110	SE-1	Pass	178	BRK	Pass
				149	BRK	112	SE-1	Pass	177	BRK	Pass
P33/P34	PR-125	8/4/10	RS	118	SE-1	123	SE-1	Pass	182	BRK	Pass
				127	SE-1	126	SE-1	Pass	181	BRK	Pass
Sample Number:		**DP-36**		125	SE-1	123	SE-1	Pass	183	BRK	Pass
Comments:				139	SE-1	129	SE-1	Pass	175	BRK	Pass
				119	SE-1	115	SE-1	Pass	181	BRK	Pass
P34/P35	PR-126	8/4/10	RS	127	SE-1	132	SE-1	Pass	174	BRK	Pass
				129	SE-1	125	SE-1	Pass	176	BRK	Pass
Sample Number:		**DP-37**		131	SE-1	127	SE-1	Pass	159	BRK	Pass
Comments:				125	SE-1	128	SE-1	Pass	178	BRK	Pass
				148	SE-1	128	SE-1	Pass	176	BRK	Pass
P35/P36	PR-128	8/4/10	RS	127	SE-1	126	SE-1	Pass	186	BRK	Pass
				129	SE-1	118	SE-1	Pass	183	BRK	Pass
Sample Number:		**DP-38**		128	SE-1	126	SE-1	Pass	184	BRK	Pass
Comments:				133	SE-1	127	SE-1	Pass	185	BRK	Pass
				123	SE-1	122	SE-1	Pass	180	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P36/P37	PR-129	8/4/10	RS	138	SE-1	121	SE-1	Pass	174	BRK	Pass
				144	SE-1	157	SE-1	Pass	170	BRK	Pass
Sample Number:		**DP-39**		133	SE-1	120	SE-1	Pass	174	BRK	Pass
Comments:				126	SE-1	115	AD-BRK 10%	Pass	171	BRK	Pass
				125	SE-1	114	AD-BRK 10%	Pass	176	BRK	Pass
PR-112/P23	PR-145	7/27/10	LH	143	SE-3			Pass	187	BRK	Pass
				124	SE-3			Pass	189	BRK	Pass
Sample Number:		**DP-40**		119	SE-3			Pass	190	BRK	Pass
Comments:	Extrusion Weld			127	SE-3			Pass	188	BRK	Pass
				140	SE-3			Pass	190	BRK	Pass
P37/P38	PR-148	8/4/10	RS	121	SE-1	117	SE-1	Pass	173	BRK	Pass
				125	SE-1	115	SE-1	Pass	173	BRK	Pass
Sample Number:		**DP-41**		128	SE-1	118	SE-1	Pass	171	BRK	Pass
Comments:				127	SE-1	116	SE-1	Pass	170	BRK	Pass
				120	SE-1	1113	SE-1	Pass	172	BRK	Pass
P38/P39	PR-149	8/4/10	RS	128	SE-1	123	SE-1	Pass	176	BRK	Pass
				128	SE-1	129	SE-1	Pass	141	BRK	Pass
Sample Number:		**DP-42**		155	SE-1	150	SE-1	Pass	128	BRK	Pass
Comments:				141	SE-1	122	SE-1	Pass	176	BRK	Pass
				128	SE-1	129	SE-1	Pass	174	BRK	Pass
P39/P40	PR-150	8/4/10	RS	131	SE-1	119	SE-1	Pass	162	BRK	Pass
				123	SE-1	118	SE-1	Pass	175	BRK	Pass
Sample Number:		**DP-43**		139	SE-1	109	SE-1	Pass	174	BRK	Pass
Comments:				122	SE-1	119	SE-1	Pass	172	BRK	Pass
				113	SE-1	130	SE-1	Pass	174	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P40/P41	PR-151	8/5/10	TW	133	SE-1	131	SE-1	Pass	174	BRK	Pass
				126	SE-1	134	SE-1	Pass	173	BRK	Pass
Sample Number:		**DP-44**		125	SE-1	123	SE-1	Pass	175	BRK	Pass
Comments:				118	SE-1	126	SE-1	Pass	175	BRK	Pass
				116	SE-1	138	SE-1	Pass	173	BRK	Pass
P41/P42	PR-152	8/27/10	LH	148	SE-1	145	SE-1	Pass	180	BRK	Pass
				139	SE-1	138	SE-1	Pass	178	BRK	Pass
Sample Number:		**DP-45**		141	SE-1	125	SE-1	Pass	183	BRK	Pass
Comments:				127	SE-1	123	SE-1	Pass	181	BRK	Pass
				123	SE-1	142	SE-1	Pass	180	BRK	Pass
P44/P45	PR-171	8/27/10	LH	144	SE-1	158	SE-1	Pass	177	BRK	Pass
				131	SE-1	128	SE-1	Pass	178	BRK	Pass
Sample Number:		**DP-46**		127	SE-1	135	SE-1	Pass	175	BRK	Pass
Comments:				123	SE-1	135	SE-1	Pass	177	BRK	Pass
				135	SE-1	135	SE-1	Pass	179	BRK	Pass
P43/P44	PR-173	8/27/10	LH	144	SE-1	150	SE-1	Pass	177	BRK	Pass
				138	SE-1	132	SE-1	Pass	174	BRK	Pass
Sample Number:		**DP-47**		148	SE-1	139	SE-1	Pass	177	BRK	Pass
Comments:				136	SE-1	101	SE-1	Pass	177	BRK	Pass
				136	SE-1	120	SE-1	Pass	177	BRK	Pass
P46/P47	PR-174	8/27/10	LH	139	SE-1	145	SE-1	Pass	176	BRK	Pass
				139	SE-1	128	SE-1	Pass	174	BRK	Pass
Sample Number:		**DP-48**		139	SE-1	144	SE-1	Pass	177	BRK	Pass
Comments:				147	SE-1	129	SE-1	Pass	176	BRK	Pass
				140	SE-1	126	SE-1	Pass	176	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)
SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project:	Hanford ERDF Cells 9	Installer:	GSI
Project ID:	01-0032	Material:	60 mil HDPE (Textured)
Project No.:	S013213A00	Fusion Peel: 91	Fusion Shear: 120 ppi
		Extrusion Peel: 78	Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P48/P49	PR-175	8/27/10	LH	132	SE-1	124	SE-1	Pass	176	BRK	Pass
				134	SE-1	126	SE-1	Pass	180	BRK	Pass
Sample Number:		**DP-49**		150	SE-1	154	SE-1	Pass	179	BRK	Pass
Comments:				136	SE-1	120	SE-1	Pass	177	BRK	Pass
				132	SE-1	143	SE-1	Pass	178	BRK	Pass
P45/P46	PR-176	8/27/10	LH	144	SE-1	132	SE-1	Pass	175	BRK	Pass
				128	SE-1	129	SE-1	Pass	172	BRK	Pass
Sample Number:		**DP-50**		136	SE-1	127	SE-1	Pass	176	BRK	Pass
Comments:				143	SE-1	127	SE-1	Pass	173	BRK	Pass
				136	SE-1	146	SE-1	Pass	175	BRK	Pass
P47/P48	PR-177	8/27/10	LH	143	SE-1	127	SE-1	Pass	168	BRK	Pass
				133	SE-1	127	SE-1	Pass	172	BRK	Pass
Sample Number:		**DP-51**		145	SE-1	134	SE-1	Pass	176	BRK	Pass
Comments:				131	SE-1	134	SE-1	Pass	173	BRK	Pass
				140	SE-1	123	SE-1	Pass	176	BRK	Pass
P49/P50	PR-178	8/27/10	LH	130	SE-1	137	SE-1	Pass	172	BRK	Pass
				135	SE-1	128	SE-1	Pass	174	BRK	Pass
Sample Number:		**DP-52**		129	SE-1	129	SE-1	Pass	170	BRK	Pass
Comments:				143	SE-1	139	SE-1	Pass	172	BRK	Pass
				124	SE-1	131	SE-1	Pass	175	BRK	Pass
P43/Tie-in	PR-185	8/27/10	LH	137	SE-1	144	SE-1	Pass	179	BRK	Pass
				141	SE-1	133	SE-1	Pass	176	BRK	Pass
Sample Number:		**DP-53**		156	SE-1	128	SE-1	Pass	178	BRK	Pass
Comments:				155	SE-1	126	SE-1	Pass	176	BRK	Pass
				127	SE-1	130	SE-1	Pass	177	BRK	Pass

Codes

AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
PR-179/P42	PR-192	8/30/10	LH	116	SE-3			Pass	183	BRK	Pass
				105	SE-3			Pass	179	BRK	Pass
Sample Number:		**DP-54**		132	SE-3			Pass	184	BRK	Pass
Comments:	Extrusion Weld			118	SE-3			Pass	179	BRK	Pass
				95	SE-3			Pass	177	BRK	Pass
P51/P52	PR-202	9/14/10	RS	120	SE-1	120	SE-1	Pass	173	BRK	Pass
				127	SE-1	135	SE-1	Pass	174	BRK	Pass
Sample Number:		**DP-55**		118	SE-1	111	AD-BRK 10%	Pass	168	BRK	Pass
Comments:				123	SE-1	116	SE-1	Pass	162	BRK	Pass
				121	SE-1	121	SE-1	Pass	168	BRK	Pass
P52/P53	PR-210	9/14/10	RS	127	SE-1	122	SE-1	Pass	169	BRK	Pass
				121	SE-1	118	SE-1	Pass	171	BRK	Pass
Sample Number:		**DP-56**		125	SE-1	112	SE-1	Pass	155	BRK	Pass
Comments:				128	SE-1	124	SE-1	Pass	169	BRK	Pass
				123	SE-1	123	SE-1	Pass	152	BRK	Pass
P53/P54	PR-211	9/14/10	RS	134	SE-1	151	SE-1	Pass	170	BRK	Pass
				138	SE-1	141	SE-1	Pass	180	BRK	Pass
Sample Number:		**DP-57**		140	SE-1	137	SE-1	Pass	180	BRK	Pass
Comments:				140	SE-1	138	SE-1	Pass	181	BRK	Pass
				135	SE-1	150	SE-1	Pass	173	BRK	Pass
P54/P55	PR-212	9/14/10	RS	140	SE-1	140	SE-1	Pass	184	BRK	Pass
				132	SE-1	150	SE-1	Pass	174	BRK	Pass
Sample Number:		**DP-58**		128	SE-1	135	SE-1	Pass	174	BRK	Pass
Comments:				145	SE-1	132	SE-1	Pass	172	BRK	Pass
				141	SE-1	127	SE-1	Pass	167	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P55/P56	PR-213	9/14/10	RS	139	SE-1	143	SE-1	Pass	185	BRK	Pass
				137	SE-1	128	SE-1	Pass	183	BRK	Pass
Sample Number:		**DP-59**		139	SE-1	128	SE-1	Pass	189	BRK	Pass
Comments:				143	SE-1	127	SE-1	Pass	187	BRK	Pass
				140	SE-1	122	SE-1	Pass	170	BRK	Pass
P51/P57	PR-214	9/14/10	RS	117	SE-1	117	SE-1	Pass	167	BRK	Pass
				139	SE-1	122	SE-1	Pass	173	BRK	Pass
Sample Number:		**DP-60**		118	SE-1	122	SE-1	Pass	182	BRK	Pass
Comments:				116	SE-1	127	SE-1	Pass	176	BRK	Pass
				115	SE-1	115	SE-1	Pass	172	BRK	Pass
P57/P58	PR-215	9/14/10	RS	115	SE-1	109	SE-1	AD-BRK 10%	181	BRK	Pass
				119	AD-BRK 10%	133	SE-1	Pass	179	BRK	Pass
Sample Number:		**DP-61**		134	SE-1	126	SE-1	Pass	178	BRK	Pass
Comments:				122	SE-1	117	SE-1	Pass	180	BRK	Pass
				148	SE-1	114	SE-1	Pass	177	BRK	Pass
P56/P59	PR-216	9/14/10	RS	132	SE-1	130	SE-1	Pass	175	BRK	Pass
				130	SE-1	127	SE-1	Pass	168	BRK	Pass
Sample Number:		**DP-62**		143	SE-1	120	SE-1	Pass	171	BRK	Pass
Comments:				148	SE-1	127	SE-1	Pass	162	BRK	Pass
				143	SE-1	112	SE-1	Pass	166	BRK	Pass
P59/P60	PR-226	9/14/10	RS	134	SE-1	127	SE-1	Pass	170	BRK	Pass
				131	SE-1	125	SE-1	Pass	170	BRK	Pass
Sample Number:		**DP-63**		132	SE-1	130	SE-1	Pass	174	BRK	Pass
Comments:				124	SE-1	123	SE-1	Pass	175	BRK	Pass
				136	SE-1	126	SE-1	Pass	166	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC.

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P60/P61	PR-227	9/14/10	RS	108	SE-1	139	SE-1	Pass	174	BRK	Pass
				130	SE-1	118	SE-1	Pass	177	BRK	Pass
Sample Number:		**DP-64**		128	SE-1	112	SE-1	Pass	175	BRK	Pass
Comments:				129	SE-1	131	SE-1	Pass	174	BRK	Pass
				131	SE-1	101	SE-1	Pass	174	BRK	Pass
P50/P62	PR-228	9/14/10	RS	131	SE-1	139	SE-1	Pass	176	BRK	Pass
				131	SE-1	132	SE-1	Pass	174	BRK	Pass
Sample Number:		**DP-65**		130	SE-1	135	SE-1	Pass	173	BRK	Pass
Comments:				136	SE-1	139	SE-1	Pass	174	BRK	Pass
				128	SE-1	148	SE-1	Pass	172	BRK	Pass
P62/P63	PR-219	9/14/10	RS	143	SE-1	133	SE-1	Pass	163	BRK	Pass
				130	SE-1	138	SE-1	Pass	160	BRK	Pass
Sample Number:		**DP-66**		148	SE-1	122	SE-1	Pass	171	BRK	Pass
Comments:				141	SE-1	127	SE-1	Pass	167	BRK	Pass
				129	SE-1	114	SE-1	Pass	163	BRK	Pass
P63/P64	PR-229	9/14/10	JV	141	SE-1	161	SE-1	Pass	194	BRK	Pass
				157	SE-1	155	SE-1	Pass	200	BRK	Pass
Sample Number:		**DP-67**		140	SE-1	146	SE-1	Pass	176	BRK	Pass
Comments:				147	SE-1	162	SE-1	Pass	187	BRK	Pass
				151	SE-1	152	SE-1	Pass	190	BRK	Pass
P64/P65	PR-230	9/14/10	JV	126	SE-1	128	SE-1	Pass	188	BRK	Pass
				127	SE-1	128	SE-1	Pass	182	BRK	Pass
Sample Number:		**DP-68**		119	SE-1	132	SE-1	Pass	177	BRK	Pass
Comments:				119	SE-1	126	SE-1	Pass	176	BRK	Pass
				116	SE-1	128	SE-1	Pass	180	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Code	Out	Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
P65/P67	PR-231	9/14/10	RS	146	SE-1	135	SE-1	Pass	164	BRK	Pass
				143	SE-1	127	SE-1	Pass	164	BRK	Pass
Sample Number:		**DP-69**		136	SE-1	133	SE-1	Pass	173	BRK	Pass
Comments:				134	SE-1	138	SE-1	Pass	170	BRK	Pass
				141	SE-1	124	SE-1	Pass	168	BRK	Pass
P58/P66	PR-232	9/14/10	JS	141	SE-1	139	SE-1	Pass	175	BRK	Pass
				132	SE-1	153	SE-1	Pass	185	BRK	Pass
Sample Number:		**DP-70**		143	SE-1	150	SE-1	Pass	177	BRK	Pass
Comments:				131	SE-1	130	SE-1	Pass	187	BRK	Pass
				139	SE-1	141	SE-1	Pass	173	BRK	Pass
P42/P66	PR-233	9/14/10	RS	140	SE-1	124	SE-1	Pass	176	BRK	Pass
				119	SE-1	116	SE-1	Pass	177	BRK	Pass
Sample Number:		**DP-71**		137	SE-1	129	SE-1	Pass	175	BRK	Pass
Comments:				127	SE-1	119	SE-1	Pass	173	BRK	Pass
				125	SE-1	117	SE-1	Pass	172	BRK	Pass
PR-233/P42	PR-236	9/14/10	JS	119	SE-3			Pass	170	BRK	Pass
				109	SE-3			Pass	168	BRK	Pass
Sample Number:		**DP-72**		147	SE-3			Pass	171	BRK	Pass
Comments:	Extrusion Weld			128	SE-3			Pass	169	BRK	Pass
				121	SE-3			Pass	169	BRK	Pass
PR-1/P1	PR-262	10/4/10	LH	127	SE-3			Pass	182	BRK	Pass
				142	SE-3			Pass	174	BRK	Pass
Sample Number:		**DP-73**		139	SE-3			Pass	173	BRK	Pass
Comments:	Extrusion Weld			155	SE-3			Pass	170	BRK	Pass
				151	SE-3			Pass	171	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

Primary Geomembrane Seam Destructive Sample Log

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 5-25-3

Project Information

Project: Hanford ERDF Cells 9
Project ID: 01-0032
Project No.: S013213A00

Installer: GSI
Material: 60 mil HDPE (Textured)
Fusion Peel: 91 Fusion Shear: 120 ppi
Extrusion Peel: 78 Ext Shear: 120 ppi

Seam Number	Repair Number	Date Tested	Tech	Peel (ppi) In	Peel (ppi) Code	Peel (ppi) Out	Peel (ppi) Code	Pass/ Fail	Shear (ppi)	Failure Code	Pass/ Fail
PR-90/Tie-In	PR-265	10/7/10	TW	138	SE-3			Pass	183	BRK	Pass
				150	SE-3			Pass	183	BRK	Pass
Sample Number:	**DP-74A**			114	SE-3			Pass	180	BRK	Pass
Comments:	DP-74 Was accidentally thrown away by ESI Laborer			127	SE-3			Pass	180	BRK	Pass
				133	SE-3			Pass	190	BRK	Pass
PR-05/P3	PR-264	10/1/10	TW	111	SE-3			Pass	189	BRK	Pass
				140	SE-3			Pass	187	BRK	Pass
Sample Number:	**DP-75**			110	SE-3			Pass	182	BRK	Pass
Comments:	Extrusion Weld			128	SE-3			Pass	184	BRK	Pass
				104	SE-3			Pass	181	BRK	Pass

Codes
AD: Adhesion failure (100% peel)
BRK: Break in sheeting away from Seam edge
SE: Break in sheeting at seam edge
AD-BRK: Break in sheeting (Partial Peel)

SIP: Sep. plane of the sheet
FTB: Film tearing bond
NFTB: 100% peel

F.4

TRIAL WELDS

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/10/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Temp (F°): High: 87 Low: 64
Report No: 5-16- 086

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-001	9:10	W43	JA	860		157	146	176	ADT	043/05	Pass
				4.0		152	146	167	AD	043/05	Pass
Temperature:						148	144	177	AD	043/05	Pass
Comments:											
TS-002	9:12	W44	CN	860		153	152	159	AD	043/05	Pass
				4.0		148	143	182	AD	043/05	Pass
Temperature:						141	145	179	AD	043/05	Pass
Comments:											
TS-003	12:40	W43	JA	860		141	137	163	AD	043/05	Pass
				4.0		148	136	148	AD	043/05	Pass
Temperature:						137	144	150	AD	043/05	Pass
Comments:											
TS-004	12:42	W44	CN	860		138	141	165	AD	043/05	Pass
				4.0		130	146	150	AD	043/05	Pass
Temperature:						140	142	158	AD	043/05	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/11/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 087

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-005	7:15	W44	CN	860		145	138	191	SE/SE	T-043	Pass
				4.0		120	139	179	SE/SE	T-043	Pass
Temperature:						145	143	186	SE/SE	T-043	Pass
Comments:											
TS-006	7:20	W26	JA	860		134	130	177	SE/SE	T-043	Pass
				4.0		142	126	171	SE/SE	T-043	Pass
Temperature:						141	130	180	SE/SE	T-043	Pass
Comments:											
TS-007	10:07	G48	EY		550		128	157	TX/TX	T-043	Pass
			CI		500		137	153	TX/TX	T-043	Pass
Temperature:							116	154	TX/TX	T-043	Pass
Comments:											
TS-008	13:03	G48	EY		550		167	190	TX/TX	T-043	Pass
			CI		500		187	191	TX/TX	T-043	Pass
Temperature:							159	206	TX/TX	T-043	Pass
Comments:											
TS-009	13:25	W44	DA	850		151	133	149	SE/SE	T-043	Pass
				4		125	141	158	SE/SE	T-043	Pass
Temperature:						128	133	155	SE/SE	T-043	Pass
Comments:											
TS-010	12:23	W26	JA	860		128	129	168	SE/SE	T-043	Pass
				3.5		144	142	157	SE/SE	T-043	Pass
Temperature:						135	146	169	SE/SE	T-043	Pass
Comments:											
TS-011	12:18	W44	CN	860		136	132	156	SE/SE	T-043	Pass
				4		136	132	149	SE/SE	T-043	Pass
Temperature:						126	134	150	SE/SE	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/14/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 088

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-012	11:30	W26	JA	867		128	132	155	SE/SE	T-043	Pass
				4.5		125	120	152	SE/SE	T-043	Pass
Temperature:						128	133	150	SE/SE	T-043	Pass
Comments:											
TS-013	11:40	W44	CN	868		129	127	163	SE/SE	T-043	Pass
				4.0		125	126	156	SE/SE	T-043	Pass
Temperature:						116	127	166	SE/SE	T-043	Pass
Comments:											
TS-014	12:45	G48	EY		550		146	160	TX/TX	T-043	Pass
					500		147	155	TX/TX	T-043	Pass
Temperature:							140	161	TX/TX	T-043	Pass
Comments:											
TS-015	13:00	W44	CN	860		125	127	156	SE/SE	T-043	Pass
				4.0		122	138	147	SE/SE	T-043	Pass
Temperature:						127	132	143	SE/SE	T-043	Pass
Comments:											
TS-016	13:00	W26	JA	860		125	130	151	SE/SE	T-043	Pass
				4		120	120	131	SE/SE	T-043	Pass
Temperature:						115	120	142	SE/SE	T-043	Pass
Comments:											
TS-017	13:10	W24	DA	850		135	122	153	SE/SE	T-043	Pass
				4		125	125	140	SE/SE	T-043	Pass
Temperature:						122	124	149	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/15/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 089

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-018	7:50	W26	JA	860		134	120	181	SE/SE	T-043	Pass
				4.0		129	117	172	SE/SE	T-043	Pass
Temperature:						128	121	167	SE/SE	T-043	Pass
Comments:											
TS-019	8:00	W44	CN	860		140	138	179	SE/SE	T-043	Pass
				4.0		140	133	168	SE/SE	T-043	Pass
Temperature:						131	135	184	SE/SE	T-043	Pass
Comments:											
TS-020	10:40	W24	DA	850		128	128	170	SE/SE	T-043	Pass
				4.0		112	128	165	SE/SE	T-043	Pass
Temperature:						110	122	165	SE/SE	T-043	Pass
Comments:											
TS-021	12:45	W26	JA	860		119	127	151	SE/SE	T-043	Pass
				4.0		124	132	145	SE/SE	T-043	Pass
Temperature:						118	129	148	SE/SE	T-043	Pass
Comments:											
TS-022	12:27	W44	CN	860		125	123	170	SE/SE	T-043	Pass
				4		126	127	164	SE/SE	T-043	Pass
Temperature:						125	128	162	SE/SE	T-043	Pass
Comments:											
TS-023	13:20	G48	EY		550		127	160	TX/TX	T-043	Pass
			CI		500		130	152	TX/TX	T-043	Pass
Temperature:							122	162	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/16/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 090

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-024	7:30	G48	EY		550		143	207	TX/TX	T-043	Pass
			CI		500		146	212	TX/TX	T-043	Pass
Temperature:							147	221	TX/TX	T-043	Pass
Comments:											
TS-025	7:56	W26	JA	860		132	160	187	SE/SE	T-043	Pass
				4.0		135	137	185	SE/SE	T-043	Pass
Temperature:						136	151	189	SE/SE	T-043	Pass
Comments:											
TS-026	8:30	W44	CN	860		144	154	194	SE/SE	T-043	Pass
				3.0		135	141	178	SE/SE	T-043	Pass
Temperature:						130	139	194	SE/SE	T-043	Pass
Comments:											
TS-027	12:20	W44	CN	860		156	150	168	SE/SE	T-043	Pass
				3.0		149	158	169	SE/SE	T-043	Pass
Temperature:						150	144	193	SE/SE	T-043	Pass
Comments:											
TS-028	12:27	W48	EY		550		176	187	TX/TX	T-043	Pass
					500		169	183	TX/TX	T-043	Pass
Temperature:							178	185	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
omments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/17/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 091

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-029	7:20	W44	CN	860		151	139	209	TX/SE	T-043	Pass
				3.0		144	155	205	TX/SE	T-043	Pass
Temperature:						146	134	199	TX/SE	T-043	Pass
Comments:											
TS-030	7:25	W44	CN	860		152	152	198	TX/SE	T-043	Pass
				3.0		148	148	194	TX/SE	T-043	Pass
Temperature:						147	141	190	TX/SE	T-043	Pass
Comments:											
TS-031	7:35	W48	EY		550		169	191	TX/TX	T-043	Pass
			CI		500		167	179	TX/TX	T-043	Pass
Temperature:							180	192	TX/TX	T-043	Pass
Comments:											
TS-032	8:19	W26	JA	860		138	154	196	SE/SE	T-043	Pass
				4.0		136	142	189	SE/SE	T-043	Pass
Temperature:						140	153	187	SE/SE	T-043	Pass
Comments:											
TS-033	11:55	G48	EY		550		164	179	TX/TX	T-043	Pass
			CI		500		171	176	TX/TX	T-043	Pass
Temperature:							173	181	TX/TX	T-043	Pass
Comments:											
TS-034	14:30	W26	JA	860		143	147	178	SE/SE	T-043	Pass
				4		144	145	165	SE/SE	T-043	Pass
Temperature:						143	142	164	SE/SE	T-043	Pass
Comments:											
TS-035	14:32	W44	CN	860		138	137	181	SE/SE	T-043	Pass
				3.5		133	132	170	SE/SE	T-043	Pass
Temperature:						130	138	177	SE/SE	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/17/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 091 -2

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-036	14:34	W44	CN	860		145	145	174	SE/SE	T-043	Pass
				3.0		150	149	174	SE/SE	T-043	Pass
Temperature:						139	145	166	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/18/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 092

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-037	7:00	W44	CN	860		155	154	197	SE/SE	T-043	Pass
				4.0		155	143	199	SE/SE	T-043	Pass
Temperature:						140	136	192	SE/SE	T-043	Pass
Comments:											
TS-038	7:06	W26	JA	860			13		SE/SE	T-043	O.Peel Fail
				4.0			149		SE/SE	T-043	Shear Fail
Temperature:									SE/SE	T-043	
Comments: Failed Weld											
TS-039	7:10	W26	JA	860		139	124	190	SE/SE	T-043	Pass
				4.0		121	129	187	SE/SE	T-043	Pass
Temperature:						119	139	185	SE/SE	T-043	Pass
Comments: Adjustments made to wheel pressure											
TS-040	8:10	W24	DA	850		140	129	186	TX/TX	T-043	Pass
				3.5		142	125	180	TX/TX	T-043	Pass
Temperature:						139	132	182	TX/TX	T-043	Pass
Comments:											
TS-041	8:10	G48	EY		550		179	182	TX/TX	T-043	Pass
			CI		500		170	182	TX/TX	T-043	Pass
Temperature:							176	187	TX/TX	T-043	Pass
Comments:											
TS-042	8:10	W24	DA	850		156	143	181	SE/SE	T-043	Pass
				4		143	133	179	SE/SE	T-043	Pass
Temperature:						132	122	178	SE/SE	T-043	Pass
Comments:											
TS-043	12:10	W44	CN	860		139	127	154	SE/SE	T-043	Pass
				4		134	129	141	SE/SE	T-043	Pass
Temperature:						139	125	140	SE/SE	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/18/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 092 -2

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-044	12:11	G48	EY		550		146	158	TX/TX	T-043	Pass
			CI		500		142	152	TX/TX	T-043	Pass
Temperature:							151	162	TX/TX	T-043	Pass
Comments:											
TS-045	12:44	W26	JA	860		134	135	166	SE/SE	T-043	Pass
				4.0		147	141	157	SE/SE	T-043	Pass
Temperature:						130	137	167	SE/SE	T-043	Pass
Comments:											
TS-046	13:00	W24	DA	850		137	149	170	TX/TX	T-043	Pass
				3.5		138	139	163	TX/TX	T-043	Pass
Temperature:						139	140	161	TX/TX	T-043	Pass
Comments: Tie-in											
TS-047	15:45	W44	CN	860		129	142	153	TX/TX	T-043	Pass
				3.0		127	121	148	TX/TX	T-043	Pass
Temperature:						127	132	156	TX/TX	T-043	Pass
Comments: Tie-in											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/21/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 093

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-048	12:33	G48	EY		550		170	193	TX/TX	T-043	Pass
			CI		500		148	180	TX/TX	T-043	Pass
Temperature:							158	191	TX/TX	T-043	Pass
Comments:											
TS-049	13:00	G15	DA		550		148	187	TX/TX	T-043	Pass
			JA		500		138	168	TX/TX	T-043	Pass
Temperature:							132	170	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/22/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 094

Sample Number	Time	Machine Number	Tech Wtd/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-050	7:05	G48	EY		550		153	194	TX/TX	T-043	Pass
			CI		500		170	190	TX/TX	T-043	Pass
Temperature:							153	199	TX/TX	T-043	Pass
Comments:											
TS-051	7:35	W26	JA	860		128	142	189	SE/SE	T-043	Pass
				4.0		146	139	190	SE/SE	T-043	Pass
Temperature:						144	138	184	SE/SE	T-043	Pass
Comments:											
TS-052	8:00	W44	CN	860		150	142	188	SE/SE	T-043	Pass
				4.0		129	129	192	SE/SE	T-043	Pass
Temperature:						126	130	189	SE/SE	T-043	Pass
Comments:											
TS-053	12:09	W26	JA	860		124	120	158	SE/SE	T-043	Pass
				4.0		131	122	151	SE/SE	T-043	Pass
Temperature:						126	121	151	SE/SE	T-043	Pass
Comments:											
TS-054	12:25	W44	CN	860		117	146	165	SE/SE	T-043	Pass
				4		148	133	145	SE/SE	T-043	Pass
Temperature:						129	117	151	SE/SE	T-043	Pass
Comments:											
TS-055	12:30	G48	EY		550		145	161	TX/TX	T-043	Pass
			CI		500		140	154	TX/TX	T-043	Pass
Temperature:							152	160	TX/TX	T-043	Pass
Comments:											
TS-056	14:25	W44	CN	860		120	141	151	TX/TX	T-043	Pass
				3		119	124	144	TX/TX	T-043	Pass
Temperature:						141	115	146	TX/TX	T-043	Pass
Comments:	Tie-in										

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/23/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 095

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-057	7:40	G48	EY		550		150	190	TX/TX	T-043	Pass
			CI		500		158	185	TX/TX	T-043	Pass
Temperature:							164	196	TX/TX	T-043	Pass
Comments:											
TS-058	11:50	G48	EY		550		140	150	TX/TX	T-043	Pass
			CI		500		144	153	TX/TX	T-043	Pass
Temperature:							145	148	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/24/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 096

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-059	7:20	G48	EY		550		169	176	TX/TX	T-043	Pass
			CI		500		157	180	TX/TX	T-043	Pass
Temperature:							173	178	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/28/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 098

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-060	9:00	G48	EY		550		160	161	TX/TX	T-043	Pass
			CI		500		153	165	TX/TX	T-043	Pass
Temperature:							149	149	TX/TX	T-043	Pass
Comments:											
TS-061	9:12	W44	CN	860		150	140	166	SE/SE	T-043	Pass
				3.0		156	157	168	SE/SE	T-043	Pass
Temperature:						154	146	162	SE/SE	T-043	Pass
Comments:											
TS-062	12:18	G48	EY		550		130	133	TX/TX	T-043	Pass
			CI		500		122	126	TX/TX	T-043	Pass
Temperature:							128	138	TX/TX	T-043	Pass
Comments:											
TS-063	13:18	W44	CN	860		117	116	147	SE/SE	T-043	Pass
				4.0		114	114	133	SE/SE	T-043	Pass
Temperature:						116	118	132	SE/SE	T-043	Pass
Comments:											
TS-064	13:30	W26	JA	860		126	121	142	SE/SE	T-043	Pass
				4		122	120	150	SE/SE	T-043	Pass
Temperature:						124	120	149	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/29/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 099

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-065	7:15	W26	JA	860		129	120	193	SE/SE	T-043	Pass
				4.0		126	136	187	SE/SE	T-043	Pass
Temperature:						120	140	167	SE/SE	T-043	Pass
Comments:											
TS-066	7:17	W44	CN	860		145	138	193	SE/SE	T-043	Pass
				4.0		142	150	191	SE/SE	T-043	Pass
Temperature:						155	156	188	SE/SE	T-043	Pass
Comments:											
TS-067	12:18	W26	JA	860		120	121	151	SE/SE	T-043	Pass
				4.0		119	119	149	SE/SE	T-043	Pass
Temperature:						117	118	156	SE/SE	T-043	Pass
Comments:											
TS-068	12:30	G48	EY		550		150	161	TX/TX	T-043	Pass
			CI		500		153	154	TX/TX	T-043	Pass
Temperature:							154	167	TX/TX	T-043	Pass
Comments:											
TS-069	12:58	W44	CN	860		131	135	154	SE/SE	T-043	Pass
				4		125	137	149	SE/SE	T-043	Pass
Temperature:						126	134	154	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 6/30/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 100

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-070	6:50	G48	EY		550		185	203	TX/TX	T-043	Pass
			CI		500		167	190	TX/TX	T-043	Pass
Temperature:							187	200	TX/TX	T-043	Pass
Comments:											
TS-071	10:00	W26	JA	860		118	117	157	SE/SE	T-043	Pass
				4.0		122	119	149	SE/SE	T-043	Pass
Temperature:						131	112	139	SE/SE	T-043	Pass
Comments:											
TS-072	10:00	W44	CN	860		127	124	155	SE/SE	T-043	Pass
				4.0		108	127	146	SE/SE	T-043	Pass
Temperature:						111	128	167	SE/SE	T-043	Pass
Comments:											
TS-073	12:53	W26	JA	860		118	124	161	SE/SE	T-043	Pass
				4.0		112	131	153	SE/SE	T-043	Pass
Temperature:						117	106	149	SE/SE	T-043	Pass
Comments:											
TS-074	12:58	W44	CN	860		147	134	170	SE/SE	T-043	Pass
				4		144	129	174	SE/SE	T-043	Pass
Temperature:						147	143	181	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/1/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 101

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-075	9:52	W44	CN	860		137	125	177	SE/SE	T-043	Pass
				4.0		143	143	176	SE/SE	T-043	Pass
Temperature:		80				140	122	164	SE/SE	T-043	Pass
Comments:											
TS-076	10:14	W26	JA	860		136	123	176	SE/SE	T-043	Pass
				4.0		140	141	167	SE/SE	T-043	Pass
Temperature:		80				129	139	172	SE/SE	T-043	Pass
Comments:											
TS-077	11:50	G48	EY		500		132	149	TX/TX	T-043	Pass
			CI		500		139	145	TX/TX	T-043	Pass
Temperature:		80					139	148	TX/TX	T-043	Pass
Comments:											
TS-078	12:00	W43	JA	860		126	130	159	SE/SE	T-043	Pass
				3.5		118	121	154	SE/SE	T-043	Pass
Temperature:		80				127	128	153	SE/SE	T-043	Pass
Comments:											
TS-079	13:10	W26	JA	860		159	138	173	SE/SE	T-043	Pass
				4		144	134	161	SE/SE	T-043	Pass
Temperature:		80				141	125	163	SE/SE	T-043	Pass
Comments:											
TS-080	13:37	W44	CN	860		134	126	160	SE/SE	T-043	Pass
				4		120	128	155	SE/SE	T-043	Pass
Temperature:		80				121	126	154	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/2/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 102

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-081	7:19	W26	JA	860		152	144	192	SE/SE	T-043	Pass
				3.5		158	143	176	SE/SE	T-043	Pass
Temperature:						144	144	177	SE/SE	T-043	Pass
Comments:											
TS-082	7:17	G48	EY		550		165	188	SE/SE	T-043	Pass
			CI		500		162	177	SE/SE	T-043	Pass
Temperature:							176	194	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/6/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 103

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-083	6:55	G48	EY		550		159	182	SE/SE	T-043	Pass
			CI		500		160	185	SE/SE	T-043	Pass
Temperature:							168	182	SE/SE	T-043	Pass
Comments:											
TS-084	10:30	W43	JA	860		114	104	133	SE/SE	T-043	Pass
				4.0		111	120	130	SE/SE	T-043	Pass
Temperature:						96	109	140	SE/SE	T-043	Pass
Comments: No Seams Welded											
TS-085	11:37	W44	CN	860		114	116	152	SE/SE	T-043	Pass
				4.0		123	131	146	SE/SE	T-043	Pass
Temperature:		85				131	123	150	SE/SE	T-043	Pass
Comments:											
TS-086	11:36	W43	JA	860		132	123	137	SE/SE	T-043	Pass
				4.0		137	142	148	SE/SE	T-043	Pass
Temperature:		85				127	119	129	SE/SE	T-043	Pass
Comments:											
TS-087	13:35	G48	EY		550		155	150	SE/SE	T-043	Pass
			CI		500		125	148	SE/SE	T-043	Pass
Temperature:		89					131	147	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/7/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 104

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-088	6:50	G48	EY		550		157	174	TX/TX	T-043	Pass
			CI		500		164	180	TX/TX	T-043	Pass
Temperature:							156	176	TX/TX	T-043	Pass
Comments:											
TS-089	11:40	G48	EY		550		153	156	TX/TX	T-043	Pass
			CI		500		141	153	TX/TX	T-043	Pass
Temperature:							144	156	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/9/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 106

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-090	7:27	W43	JA	860		134	132	174	SE/SE	T-043	Pass
				4.0		138	129	170	SE/SE	T-043	Pass
Temperature:		85				133	120	169	SE/SE	T-043	Pass
Comments:											
TS-091	7:28	W44	CN	860		116	128	166	SE/SE	T-043	Pass
				4.0		111	122	160	SE/SE	T-043	Pass
Temperature:		85				121	122	171	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/12/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 107

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-091A	11:50	G48	EY		550		150	153	TX/TX	T-043	Pass
			CI		500		144	155	TX/TX	T-043	Pass
Temperature:							144	156	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/13/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 108

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-092	7:30	W43	JA	860		149	140	175	SE/SE	T-043	Pass
				3.5		141	152	171	SE/SE	T-043	Pass
Temperature:		70				128	147	162	SE/SE	T-043	Pass
Comments:											
TS-093	7:40	W26	CN	860		115	114	166	SE/SE	T-043	Pass
				4.0		96	104	164	SE/SE	T-043	Pass
Temperature:		70				99	127	169	(10% Peel)	T-043	Pass
Comments:						98	139				Pass
TS-094	13:00	W43	JA	860		135	126	160	SE/SE	T-043	Pass
				4.0		122	120	153	SE/SE	T-043	Pass
Temperature:						129	132	161	SE/SE	T-043	Pass
Comments:											
TS-095	13:00	W26	CN	860		103	107	167	SE/SE	T-043	Pass
				4.0		117	123	159	SE/SE	T-043	Pass
Temperature:						100	119	159	SE/SE	T-043	Pass
Comments:											
TS-096	16:30	W26	CN	860		113	132	156	SE/SE	T-043	Pass
				4		108	126	152	SE/SE	T-043	Pass
Temperature:						120	140	154	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/14/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 109

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-097	7:06	W43	JA	860		137	134	190	SE/SE	T-043	Pass
				4.0		126	131	174	SE/SE	T-043	Pass
Temperature:		78				133	137	194	SE/SE	T-043	Pass
Comments:											
TS-098	7:32	W26	CN	860		126	140		SE/SE	T-043	Pass
				4.0		108	121		SE/SE	T-043	Pass
Temperature:		78				135	122		SE/SE	T-043	O. Peel Fail
Comments:		Weld Failed									
TS-099	7:54	W26	CN	860		130	118	186	SE/SE	T-043	Pass
				3.5		129	119	182	SE/SE	T-043	Pass
Temperature:		78				127	126	181	SE/SE	T-043	Pass
Comments:											
TS-100	13:00	W43	JA	860		130	131	153	SE/SE	T-043	Pass
				4.0		133	132	147	SE/SE	T-043	Pass
Temperature:		85				117	116	147	SE/SE	T-043	Pass
Comments:											
TS-101	13:15	W26	CN	860		120	124	146	SE/SE	T-043	Pass
				4		128	120	139	SE/SE	T-043	Pass
Temperature:		85				112	135	144	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/19/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 112

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-102	13:22	W43	JA	860		115	122	134	SE/SE	T-043	Pass
				4.0		112	123	128	SE/SE	T-043	Pass
Temperature:		93				111	114	129	SE/SE	T-043	Pass
Comments:											
TS-103	13:24	W26	CN	860		125	119	138	SE/SE	T-043	Pass
				4.0		120	124	139	SE/SE	T-043	Pass
Temperature:		93				116	116	132	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/20/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 113

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-104	7:30	W43	JA	860		121	123	164	SE/SE	T-043	Pass
				4.0		120	127	166	SE/SE	T-043	Pass
Temperature:						114	117	158	SE/SE	T-043	Pass
Comments:											
TS-105	7:35	W26	DA	850		135	125		SE/SE	T-043	Pass
				4.0		131	122		SE/SE	T-043	Pass
Temperature:						135	105		Peel Failed	T-043	O. Peel Fail
Comments: Test Weld Failed						138	123		Peel Failed	T-043	O. Peel Fail
TS-106	8:30	W24	DA	850		105	138	169	SE/SE	T-043	Pass
				4.0		102	129	165	SE/SE	T-043	Pass
Temperature:						112	137	145	SE/SE	T-043	Pass
Comments:						103	133	153	SE/SE	T-043	Pass
TS-107	10:00	W24	DA	850		111	127	147	SE/SE	T-043	Pass
				4.0		127	131	150	SE/SE	T-043	Pass
Temperature:						122	131	149	SE/SE	T-043	Pass
Comments:											
TS-108	11:52	W43	JA	860		122	120	136	SE/TX	T-043	Pass
				4		116	117	139	SE/TX	T-043	Pass
Temperature:						121	123	137	SE/TX	T-043	Pass
Comments:											
TS-109	12:19	W24	DA	850		134	125	165	SE/SE	T-043	Pass
				4		142	135	148	SE/SE	T-043	Pass
Temperature:						131	130	159	SE/SE	T-043	Pass
Comments:											
TS-110	13:50	G48	EY		500		144	147	TX/TX	T-043	Pass
			CI		450		141	141	TX/TX	T-043	Pass
Temperature:		95					145	148	TX/TX	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/21/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 114

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-111	7:33	G48	EY		500		121	182	TX/TX	T-043	Pass
			CI		500		136	174	TX/TX	T-043	Pass
Temperature:							106	184	TX/TX	T-043	Pass
Comments:											
TS-112	12:09	W43	JA	860		114	117	139	SE/SE	T-043	Pass
				4.0		109	122	137	SE/SE	T-043	Pass
Temperature:						110	110	131	SE/SE	T-043	Pass
Comments:											
TS-113	14:30	G48	EY		500		138	146	TX/TX	T-043	Pass
			CI		500		128	144	TX/TX	T-043	Pass
Temperature:							131	143	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/22/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 115

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-114	7:07	G48	EY		550		147	198	TX/TX	T-043	Pass
			CI		500		129	185	TX/TX	T-043	Pass
Temperature:							131	202	TX/TX	T-043	Pass
Comments: Primary Tie-in											
TS-115	7:45	W43	JA	860		162	169	180	SE/TX	T-043	Pass
				4.0		151	154	179	SE-/TX	T-043	Pass
Temperature:						152	148	163	SE/TX	T-043	Pass
Comments:											
TS-116	12:00	G48	EY		550		144	156	TX/TX	T-043	Pass
			CI		500		140	166	TX/TX	T-043	Pass
Temperature:							137	140	TX/TX	T-043	Pass
Comments:											
TS-117	12:17	W43	JA	860		134	133	163	SE/SE	T-043	Pass
				4.0		134	144	156	SE/SE	T-043	Pass
Temperature:						129	126	149	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/23/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 116

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-118	7:07	G48	EY		550		154	188	TX/TX	T-043	Pass
			CI		500		149	187	TX/TX	T-043	Pass
Temperature:							150	193	TX/TX	T-043	Pass
Comments:											
TS-119	7:30	W24	JA	860		165	151	182	SE/SE	T-043	Pass
				3.5		155	150	184	SE/SE	T-043	Pass
Temperature:						152	152	185	SE/SE	T-043	Pass
Comments:											
TS-120	9:20	W26	CN	860		118	120	170	SE/SE	T-043	Pass
				4.0		128	123	165	SE/SE	T-043	Pass
Temperature:						122	122	166	SE/SE	T-043	Pass
Comments:											
TS-121	12:25	W26	CN	860		117	112	160	SE/SE	T-043	Pass
				4.0		123	108	158	SE/SE	T-043	Pass
Temperature:						120	116	149	SE/SE	T-043	Pass
Comments:											
TS-122	12:32	W24	JA	860		112	124	134	SE/SE	T-043	Pass
				4.0		107	114	130	SE/SE	T-043	Pass
Temperature:						109	108	127	SE/SE	T-043	Pass
Comments:											
TS-123	12:35	G48	EY		500		155	158	SE/SE	T-043	Pass
			CI		450		143	152	SE/SE	T-043	Pass
Temperature:							154	159	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/26/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 118

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-124	7:10	G48	EY		550		123	178	TX/TX	T-043	Pass
			CI		500		130	173	TX/TX	T-043	Pass
Temperature:							157	184	TX/TX	T-043	Pass
Comments:											
TS-125	12:00	G48	EY		550		135	146	TX/TX	T-043	Pass
			CI		500		140	149	TX/TX	T-043	Pass
Temperature:							144	153	TX/TX	T-043	Pass
Comments:											
TS-126	12:24	W26	CN	860		125	127	140	SE/SE	T-043	Pass
				4.0		124	120	139	SE/SE	T-043	Pass
Temperature:						133	122	143	SE/SE	T-043	Pass
Comments:											
TS-127	12:40	W24	JA	860		126	141	144	SE/SE	T-043	Pass
				4.0		124	130	142	SE/SE	T-043	Pass
Temperature:						128	126	141	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/27/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 119

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-128	6:00	G48	EY		550		115	178	TX/TX	T-043	Pass
			CI		500		132	171	TX/TX	T-043	Pass
Temperature:							128	184	TX/TX	T-043	Pass
Comments:											
TS-129	6:40	W26	CN	860		121	136	177	TX/SE	T-043	Pass
				4.0		114	124	177	TX/SE	T-043	Pass
Temperature:		75				116	129	160	TX/SE	T-043	Pass
Comments:											
TS-130	6:45	W26	CN	860		141	160		TX/TX	T-043	O. Peel Fail
				3.3		140	148		TX/TX	T-043	O. Peel Fail
Temperature:		75									
Comments:		Weld Failed									
TS-131	7:17	W26	CN	860		148	141	186	TX/TX	T-043	Pass
				3.0		147	147	174	TX/TX	T-043	Pass
Temperature:		75				145	156	177	TX/TX	T-043	Pass
Comments:		Re-weld of TS-122									
TS-132	8:16	W24	JA	860		121	121	159	SE/SE	T-043	Pass
				4		134	133	153	SE/SE	T-043	Pass
Temperature:						134	126	149	SE/SE	T-043	Pass
Comments:											
TS-133	11:50	G48	EY		550		154	160	TX/TX	T-043	Pass
			CI		500		150	160	TX/TX	T-043	Pass
Temperature:							159	164	TX/TX	T-043	Pass
Comments:											
TS-134	12:35	W26	CN	860		113	121	139	TX/TX	T-043	Pass
				3.0		120	122	140	TX/TX	T-043	Pass
Temperature:						119	120	137	TX/TX	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/27/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 119 -2

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-135	12:46	W24	JA	860		122	125	139	SE/SE	T-043	Pass
				4.5		127	126	138	SE/SE	T-043	Pass
Temperature:						122	125	128	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/28/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 120

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-136	5:53	W24	JA	860		132	129	174	SE/SE	T-043	Pass
				4.0		131	127	173	SE/SE	T-043	Pass
Temperature:						134	129	173	SE/SE	T-043	Pass
Comments:											
TS-137	6:00	G48	EI		550		133	172	TX/TX	T-043	Pass
			CI		500		145	185	TX/TX	T-043	Pass
Temperature:							164	188	TX/TX	T-043	Pass
Comments:											
TS-138	11:53	G48	EI		550		119	158	TX/TX	T-043	Pass
			CI		500		127	155	TX/TX	T-043	Pass
Temperature:							127	159	TX/TX	T-043	Pass
Comments:											
TS-139	12:43	W43	JA	860		118	120	137	SE/SE	T-043	Pass
				4.0		114	119	134	SE/SE	T-043	Pass
Temperature:						112	119	129	SE/SE	T-043	Pass
Comments:											
TS-140	12:50	W26	CN	860		114	117	140	SE/SE	T-043	Pass
				4		110	109	131	SE/SE	T-043	Pass
Temperature:						109	115	136	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/29/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 121

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-141	8:00	G48	EY		550		168	185	TX/TX	T-043	Pass
			CI		500		159	182	TX/TX	T-043	Pass
Temperature:							172	173	TX/TX	T-043	Pass
Comments:											
TS-142	11:55	G48	EY		500		145	151	TX/TX	T-043	Pass
			CI		500		141	151	TX/TX	T-043	Pass
Temperature:							146	157	TX/TX	T-043	Pass
Comments:											
TS-143	12:01	W43	JA	860		110	112	144	SE/SE	T-043	Pass
				4.0		112	108	137	SE/SE	T-043	Pass
Temperature:						107	102	133	SE/SE	T-043	Pass
Comments:											
TS-144	12:12	W26	CN	860		111	100	130	SE/SE	T-043	Pass
				4.0		105	105	132	SE/SE	T-043	Pass
Temperature:						109	107	139	SE/SE	T-043	Pass
Comments:											
TS-145	13:18	W24	DA	850		96	137	148	SE/SE	T-043	Pass
				4.0		97	122	140	SE/SE	T-043	Pass
Temperature:		99				126	106	139	SE/SE	T-043	Pass
Comments:		Welded reajusted machine and rewelded									
TS-146	14:20	W24	DA	850		102	128	148	SE/SE	T-043	Pass
				4.0		120	122	140	SE/SE	T-043	Pass
Temperature:		103				122	117	139	SE/SE	T-043	Pass
Comments:											
TS-147	15:00	W43	JA	860		112	119	135	SE/SE	T-043	Pass
				4.5		109	107	119	SE/SE	T-043	Shear Fail
Temperature:		101				115	117	115	SE/SE	T-043	Shear Fail
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 7/30/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 122

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-148	12:02	W24	DA	860		107	118	143	SE/SE	T-043	Pass
				4.5		117	123	130	SE/SE	T-043	Pass
Temperature:						114	125	139	SE/SE	T-043	Pass
Comments:											
TS-149	12:15	W26	CN	860		122	112	136	SE/SE	T-043	Pass
				4.0		121	113	139	SE/SE	T-043	Pass
Temperature:						110	111	133	SE/SE	T-043	Pass
Comments:											
TS-150	12:25	W43	JA	860		135	134	147	SE/SE	T-043	Pass
				4.0		136	133	144	SE/SE	T-043	Pass
Temperature:						130	129	146	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
omments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/2/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 123

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-151	7:05	G48	EY		550		145	185	TX/TX	T-043	Pass
			CI		500		139	183	TX/TX	T-043	Pass
Temperature:							154	189	TX/TX	T-043	Pass
Comments:											
TS-152	7:15	W24	DA	850		139	138	183	TX/TX	T-043	Pass
				3.5		146	141	180	TX/TX	T-043	Pass
Temperature:						142	145	183	TX/TX	T-043	Pass
Comments:											
TS-153	7:54	W43	JA	860		122	119	179	SE/SE	T-043	Pass
				4.0		115	119	168	SE/SE	T-043	Pass
Temperature:						120	120	164	SE/SE	T-043	Pass
Comments:											
TS-154	8:14	W26	CN	860		123	128	166	SE/SE	T-043	Pass
				4.0		125	119	156	SE/SE	T-043	Pass
Temperature:						127	118	154	SE/SE	T-043	Pass
Comments:											
TS-155	11:45	G48	EY		500		120	152	SE/SE	T-043	Pass
			CI		500		125	150	SE/SE	T-043	Pass
Temperature:							129	161	SE/SE	T-043	Pass
Comments:											
TS-156	12:12	W43	JA	860		124	122	155	SE/SE	T-043	Pass
				4.0		127	120	154	SE/SE	T-043	Pass
Temperature:						121	121	150	SE/SE	T-043	Pass
Comments:											
TS-157	12:29	W24	DA	850		120	128	160	SE/SE	T-043	Pass
				4.0		110	117	154	SE/SE	T-043	Pass
Temperature:						113	109	150	SE/SE	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/2/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 123 -2

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-158	12:40	W26	CN	860	550	118	125	151	SE/SE	T-043	Pass
				4.0	500	119	127	157	SE/SE	T-043	Pass
Temperature:						115	123	148	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/3/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 124

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-159	6:05	W26	CN	860		136	142	192	SE/SE	T-043	Pass
				4.0		146	138	193	SE/SE	T-043	Pass
Temperature:						142	151	198	SE/SE	T-043	Pass
Comments:											
TS-160	6:14	W43	JA	860		133	137	178	SE/SE	T-043	Pass
				4.0		134	134	167	SE/SE	T-043	Pass
Temperature:						130	129	171	SE/SE	T-043	Pass
Comments:											
TS-161	6:40	W24	DA	850		125	140	183	SE/SE	T-043	Pass
				4.0		127	138	178	SE/SE	T-043	Pass
Temperature:						128	134	176	SE/SE	T-043	Pass
Comments:											
TS-162	11:50	W24	DA	850		134	138	176	SE/SE	T-043	Pass
				4.0		129	135	149	SE/SE	T-043	Pass
Temperature:						133	134	156	SE/SE	T-043	Pass
Comments:											
TS-163	12:50	W26	CN	860		123	118	148	SE/SE	T-043	Pass
				4		125	114	139	SE/SE	T-043	Pass
Temperature:						125	117	141	SE/SE	T-043	Pass
Comments:											
TS-164	12:54	W43	JA	860		135	127	156	SE/SE	T-043	Pass
				4		136	126	149	SE/SE	T-043	Pass
Temperature:						120	124	144	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/4/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 125

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-165	6:07	G48	EY		550		171	179	TX/TX	T-043	Pass
			CI		500		146	178	TX/TX	T-043	Pass
Temperature:							171	187	TX/TX	T-043	Pass
Comments:											
TS-166	8:00	W43	JA	860		132	160	176	TX/TX	T-043	Pass
				3.5		141	149	169	TX/TX	T-043	Pass
Temperature:						134	150	163	TX/TX	T-043	Pass
Comments:											
TS-167	11:53	G48	EY		500		152	160	TX/TX	T-043	Pass
			CI		500		153	147	TX/TX	T-043	Pass
Temperature:							150	155	TX/TX	T-043	Pass
Comments:											
TS-168	13:50	W43	JA	860		126	115	138	SE/SE	T-043	Pass
				4.0		124	115	129	SE/SE	T-043	Pass
Temperature:						111	111	131	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/5/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 126

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-169	6:56	G48	EY		550		177	184	TX/TX	T-043	Pass
			CI		500		168	174	TX/TX	T-043	Pass
Temperature:							174	180	TX/TX	T-043	Pass
Comments:											
TS-170	12:15	W26	CN	860		130	121	149	SE/SE	T-043	Pass
				4.0		121	116	148	SE/SE	T-043	Pass
Temperature:		103				120	106	148	SE/SE	T-043	Pass
Comments:											
TS-171	12:16	G48	EY		500		139	161	TX/TX	T-043	Pass
			CI		450		136	155	TX/TX	T-043	Pass
Temperature:		103					138	155	TX/TX	T-043	Pass
Comments:											
TS-172	12:20	W26	CN	860		134	140	148	TX/TX	T-043	Pass
				3.0		142	142	145	TX/TX	T-043	Pass
Temperature:		103				137	144	141	TX/TX	T-043	Pass
Comments:											
TS-173	12:23	W43	JA	860		147	150	149	TX/TX	T-043	Pass
				4.0		134	141	139	TX/TX	T-043	Pass
Temperature:		103				130	137	149	TX/TX	T-043	Pass
Comments:											
TS-174	13:50	W26	CN	860		144	113	142	SE/TX	T-043	Pass
				3.5		150	138	152	SE/TX	T-043	Pass
Temperature:		103				152	113	148	SE/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/6/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 127

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-175	5:45	G15	EY		550		144	188	TX/TX	T-043	Pass
			CI		500		111	166	TX/TX	T-043	Pass
Temperature:		70					139	185	TX/TX	T-043	Pass
Comments:											
TS-176	5:54	W43	JA	860		130	134	185	SE/SE	T-043	Pass
				4.0		133	125	169	SE/SE	T-043	Pass
Temperature:		70				139	116	169	SE/SE	T-043	Pass
Comments:											
TS-177	5:57	W26	CN	860		135	122	182	SE/SE	T-043	Pass
				4.0		128	115	183	SE/SE	T-043	Pass
Temperature:		70				132	116	184	SE/SE	T-043	Pass
Comments:											
TS-178	5:59	W26	CN	860		150	AD		SE/TX	T-043	O. Peel Fail
				3.0		135	164		SE/TX	T-043	Pass
Temperature:		70				157	AD		SE/TX	T-043	O. Peel Fail
Comments:		Weld Failed on Peel									
TS-179	6:30	W26	CN	860		167	155	169	SE/TX	T-043	Pass
				3.0		152	156	189	SE/TX	T-043	Pass
Temperature:						162	155	172	SE/TX	T-043	Pass
Comments:											
TS-180	11:49	G48	EY		550		139	156	TX/TX	T-043	Pass
			CI		500		132	150	TX/TX	T-043	Pass
Temperature:							145	156	TX/TX	T-043	Pass
Comments:											
TS-181	12:00	W26	CN	860		110	122	153	SE/SE	T-043	Pass
				4.0		114	113	150	SE/SE	T-043	Pass
Temperature:						113	118	156	SE/SE	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/6/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 127 -2

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-182	12:10	W43	JA	860		142	135	159	SE/SE	T-043	Pass
				4.0		130	132	145	SE/SE	T-043	Pass
Temperature:						125	128	137	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/7/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 128

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-183	7:22	G48	EY		550		147	170	TX/TX	T-043	Pass
			CI		500		140	169	TX/TX	T-043	Pass
Temperature:		80					160	172	TX/TX	T-043	Pass
Comments:											
TS-184	7:26	W43	JA	860		153	156	170	SE/SE	T-043	Pass
				3.5		150	140	162	SE/SE	T-043	Pass
Temperature:		80				145	136	161	SE/SE	T-043	Pass
Comments:											
TS-185	7:35	W26	CN	860		151	AD	171	SE/SE	T-043	O. Peel Fail
				3.0		158	AD	169	SE/SE	T-043	O. Peel Fail
Temperature:		80				154	AD		SE/SE	T-043	O. Peel Fail
Comments:											
TS-186	9:37	W24	CN	860		153	149	169	SE/SE	T-043	Pass
				3.5		149	158	167	SE/SE	T-043	Pass
Temperature:		85				141	165	164	SE/SE	T-043	Pass
Comments:											
TS-187	12:00	G48	EY		500		141	147	TX/TX	T-043	Pass
			CI		500		140	134	TX/TX	T-043	Pass
Temperature:		90					129	143	TX/TX	T-043	Pass
Comments:											
TS-188	12:00	W24	CN	860		138	129	153	SE/SE	T-043	Pass
				3.5		124	128	149	SE/SE	T-043	Pass
Temperature:		90				136	123	155	SE/SE	T-043	Pass
Comments:											
TS-189	12:02	W43	JA	860		126	130	143	SE/SE	T-043	Pass
				3.5		113	115	140	SE/SE	T-043	Pass
Temperature:		90				112	116	139	SE/SE	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/9/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 129

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-190	5:54	G49	EY		550		162	200	TX/TX	T-043	Pass
			CI		550		153	193	TX/TX	T-043	Pass
Temperature:							174	194	TX/TX	T-043	Pass
Comments:											
TS-191	12:00	G49	EY		550		155	161	SE/SE	T-043	Pass
			CI		550		146	160	SE/SE	T-043	Pass
Temperature:							161	170	SE/SE	T-043	Pass
Comments:											
TS-192	12:07	W43	JA	860		130	140	163	SE/SE	T-043	Pass
				4.0		128	131	157	SE/SE	T-043	Pass
Temperature:						132	124	154	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/10/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 130

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-193	7:32	W43	JA	860		144	142	185	SE/SE	T-043	Pass
						139	156	186	SE/SE	T-043	Pass
Temperature:		75				145	127	178	SE/SE	T-043	Pass
Comments:											
TS-194	7:33	G49	EY		550		144	191	TX/TX	T-043	Pass
			CI		550		143	191	TX/TX	T-043	Pass
Temperature:		75					149	192	TX/TX	T-043	Pass
Comments:											
TS-195	7:55	W24	CN	860		140	159	162	SE/SE	T-043	Pass
						144	163	157	SE/SE	T-043	Pass
Temperature:		75				141	152	168	SE/SE	T-043	Pass
Comments:											
TS-196	11:55	G49	EY		550		141	168	TX/TX	T-043	Pass
			CI		550		138	144	TX/TX	T-043	Pass
Temperature:		80					129	163	TX/TX	T-043	Pass
Comments:											
TS-197	11:55	W43	JA	860		140	147	169	SE/SE	T-043	Pass
						145	144	169	SE/SE	T-043	Pass
Temperature:		80				136	136	164	SE/SE	T-043	Pass
Comments:											
TS-198	12:00	W24	CN	860		126	126	169	SE/SE	T-043	Pass
						122	127	167	SE/SE	T-043	Pass
Temperature:		80				130	134	162	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/11/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 131

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-199	6:50	G49	EY		550		157	200	TX/TX	T-043	Pass
			CI		550		144	197	TX/TX	T-043	Pass
Temperature:		70					153	203	TX/TX	T-043	Pass
Comments:											
TS-200	7:00	W43	JA	860		158	156	196	SE/SE	T-043	Pass
				4.0		166	157	177	SE/SE	T-043	Pass
Temperature:		70				150	155	182	SE/SE	T-043	Pass
Comments:											
TS-201	7:15	W26	CN	860		149	131	192	TX/TX	T-043	Pass
				2.5		149	138	203	TX/TX	T-043	Pass
Temperature:		70				155	150	187	TX/TX	T-043	Pass
Comments:											
TS-202	7:20	W26	CN	860		149	153	195	SE/SE	T-043	Pass
				4.0		149	157	182	SE/SE	T-043	Pass
Temperature:		70				166	160	178	SE/SE	T-043	Pass
Comments:											
TS-203	11:43	G49	EY		550		137	174	TX/TX	T-043	Pass
			CI		550		151	161	TX/TX	T-043	Pass
Temperature:		85					170	180	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
omments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/12/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 132

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-204	7:00	G49	EY		550		105	172	TX/TX	T-043	Pass
			CI		550		114	128	TX/TX	T-043	Pass
Temperature:							127	133	TX/TX	T-043	Pass
Comments:											
TS-205	11:52	G49	EY		550		133	163	TX/TX	T-043	Pass
			CI		550		132	154	TX/TX	T-043	Pass
Temperature:		93					131	169	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/13/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 133

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-206	7:43	G49	EY		550		121	188	TX/TX	T-043	Pass
			CI		550		138	161	TX/TX	T-043	Pass
Temperature:		75					140	180	TX/TX	T-043	Pass
Comments:											
TS-207	11:51	G49	EY		550		144	154	TX/TX	T-043	Pass
			CI		550		136	156	TX/TX	T-043	Pass
Temperature:		89					153	160	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/16/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 134

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-208	6:57	G49	EY		550		155	189	TX/TX	T-043	Pass
			CI		550		135	182	TX/TX	T-043	Pass
Temperature:		76					171	185	TX/TX	T-043	Pass
Comments:											
TS-209	6:55	W26	CN	860		136			SE/SE	T-043	O. Peel Fail
				4.0		134			SE/SE	T-043	O. Peel Fail
Temperature:		76				139			SE/SE	T-043	O. Peel Fail
Comments:											
TS-210	6:49	W43	JA	860		144			SE/SE	T-043	O. Peel Fail
				4.0		140			SE/SE	T-043	O. Peel Fail
Temperature:		80				142			SE/SE	T-043	O. Peel Fail
Comments:											
TS-211	8:14	W24	DA	850		141			SE/SE	T-043	O. Peel Fail
				4.0		132			SE/SE	T-043	O. Peel Fail
Temperature:		96				127			SE/SE	T-043	O. Peel Fail
Comments:											
TS-212	11:55	G49	EY		500		140		TX/TX	T-043	Shear Fail
			CI		500		120		TX/TX	T-043	Shear Fail
Temperature:		96					140		TX/TX	T-043	Shear Fail
Comments:											
TS-213	11:55	W26	CN	860		125	98	130	SE/SE	T-043	Pass
				4.0		116	111	129	SE/SE	T-043	Pass
Temperature:		96				111	117	119	SE/SE	T-043	Shear Fail
Comments:											
TS-214	12:00	W43	JA	860		AD					I. Peel Fail
				4.0		AD					I. Peel Fail
Temperature:		96				AD					I. Peel Fail
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/16/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 134 -2

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-215	12:24	W43	JA	860		113	119	138	SE/SE	T-043	Pass
				4.0		119	118	129	SE/SE	T-043	Pass
Temperature:		96				116	110	130	SE/SE	T-043	Pass
Comments:											
TS-216	13:00	W24	DA	850		129	126	139	SE/SE	T-043	Pass
				4.0		124	120	138	SE/SE	T-043	Pass
Temperature:		96				122	119	130	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/17/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 135

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-217	5:50	W26	CN	860		187	123	180	SE/SE	T-043	Pass
				4.0		128	147	191	SE/SE	T-043	Pass
Temperature:		68				142	130	186	SE/SE	T-043	Pass
Comments:											
TS-218	6:00	W43	JA	860		136	141		SE/SE	T-043	I. Peel Fail
				4.0		130	143		SE/SE	T-043	I. Peel Fail
Temperature:		69				AD	105		SE/SE	T-043	I. Peel Fail
Comments:											
TS-219	6:36	W43	JA	860			126		SE/SE	T-043	O.Peel Fail
				4.0			AD		SE/SE	T-043	O.Peel Fail
Temperature:		69							SE/SE	T-043	
Comments:		Adjusted tension									
TS-220	6:50	W43	JA	860		126		187	SE/SE	T-043	O. Peel Fail
				4.0		116		183	SE/SE	T-043	O. Peel Fail
Temperature:		71				129		176	SE/SE	T-043	O. Peel Fail
Comments:											
TS-221	7:00	W24	DA	850		127		196	SE/SE	T-043	O. Peel Fail
				4.0		139		190	SE/SE	T-043	O. Peel Fail
Temperature:		71				139		181	SE/SE	T-043	O. Peel Fail
Comments:											
TS-222	7:42	G49	EY		550	143		190	TX/TX	T-043	O. Peel Fail
			CI		550	156		186	TX/TX	T-043	O. Peel Fail
Temperature:		77				155		186	TX/TX	T-043	O. Peel Fail
Comments:											
TS-223	11:48	G49	EY		500	140		134	TX/TX	T-043	O. Peel Fail
			CI		450	129		134	TX/TX	T-043	O. Peel Fail
Temperature:		95				137		141	TX/TX	T-043	O. Peel Fail
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/18/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 136

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-224	6:25	G49	EY		550		169	182	TX/TX	T-043	Pass
			CI		550		153	183	TX/TX	T-043	Pass
Temperature:		79					135	186	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/19/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 137

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-224A	12:00	G49	EY		550		120	166	TX/TX	T-043	Pass
			CI		550		125	176	TX/TX	T-043	Pass
Temperature:							130	160	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/20/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 138

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-225	6:40	W43	JA	860		130	144	193	SE/SE	T-043	Pass
				4.0		134	146	193	SE/SE	T-043	Pass
Temperature:		88				146	149	182	SE/SE	T-043	Pass
Comments:											
TS-226	6:45	W26	CN	860		136	135	207	SE/SE	T-043	Pass
				3.8		117	141	205	SE/SE	T-043	Pass
Temperature:		88				128	152	218	SE/SE	T-043	Pass
Comments:											
TS-227	7:50	W24	DA	850		138	141	190	SE/SE	T-043	Pass
				4.0		136	137	190	SE/SE	T-043	Pass
Temperature:		88				145	138	186	SE/SE	T-043	Pass
Comments:											
TS-228	11:45	W26	CN	860		119	128	164	SE/SE	T-043	Pass
				4.0		134	125	151	SE/SE	T-043	Pass
Temperature:		88				122	128	160	SE/SE	T-043	Pass
Comments:											
TS-229	11:50	W43	JA	860		137	142	164	SE/SE	T-043	Pass
				4.0		139	148	158	SE/SE	T-043	Pass
Temperature:		88				125	132	164	SE/SE	T-043	Pass
Comments:											
TS-230	11:52	G49	EY		500		141	167	TX/TX	T-043	Pass
			CI		500		135	166	TX/TX	T-043	Pass
Temperature:		88					145	159	TX/TX	T-043	Pass
Comments:											
TS-231	13:20	W85	DA	850		125	130	159	SE/SE	T-043	Pass
				4.0		124	131	159	SE/SE	T-043	Pass
Temperature:		88				133	138	162	SE/SE	T-043	Pass
Comments:		New Wedge									

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/23/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 139

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-232	5:58	G49	EY		550		122	203	TX/TX	T-043	Pass
			CI		550		120	200	TX/TX	T-043	Pass
Temperature:		55					137	218	TX/TX	T-043	Pass
Comments:											
TS-233	11:56	G49	EY		550		154	162	TX/TX	T-043	Pass
			CI		550		148	163	TX/TX	T-043	Pass
Temperature:		83					162	170	TX/TX	T-043	Pass
Comments:											
TS-234	15:24	W43	JA	860		129	141	175	SE/SE	T-043	Pass
				4.0		146	133	158	SE/SE	T-043	Pass
Temperature:		83				125	131	153	SE/SE	T-043	Pass
Comments:											
TS-235	15:23	W26	CN	860		140	136	152	SE/SE	T-043	Pass
				4.0		136	127	144	SE/SE	T-043	Pass
Temperature:		83				139	126	151	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/24/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 140

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-236	6:00	G49	EY		550		137	221	TX/TX	T-043	Pass
			CI		550		132	216	TX/TX	T-043	Pass
Temperature:		65					142	221	TX/TX	T-043	Pass
Comments:											
TS-237	8:45	W26	CN	860		134	129	176	SE/SE	T-043	Pass
				4.0		131	128	176	SE/SE	T-043	Pass
Temperature:		75				134	119	188	SE/SE	T-043	Pass
Comments:											
TS-238	9:00	W43	JA	860		131	124	174	SE/SE	T-043	Pass
				4.0		134	128	169	SE/SE	T-043	Pass
Temperature:		75				129	127	167	SE/SE	T-043	Pass
Comments:											
TS-239	9:00	W85	DA	850		125	123	174	SE/SE	T-043	Pass
				4.0		121	131	170	SE/SE	T-043	Pass
Temperature:		75				129	126	169	SE/SE	T-043	Pass
Comments:											
TS-240	11:43	W26	CN	860		126	123	151	SE/SE	T-043	Pass
				4.0		118	126	148	SE/SE	T-043	Pass
Temperature:		90				126	118	142	SE/SE	T-043	Pass
Comments:											
TS-241	12:40	W85	DA	850		125	132	160	SE/SE	T-043	Pass
				4.0		131	126	153	SE/SE	T-043	Pass
Temperature:		90				134	131	157	SE/SE	T-043	Pass
Comments:											
TS-242	12:49	W43	JA	860		125	135	142	SE/SE	T-043	Pass
				4.0		127	132	150	SE/SE	T-043	Pass
Temperature:		90				119	118	149	SE/SE	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/25/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 141

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-242A	6:30	W85	DA	850		168	155	204	TX/TX	T-043	Pass
				3.5		158	157	197	TX/TX	T-043	Pass
Temperature:						168	162	193	TX/TX	T-043	Pass
Comments:											
TS-242B	12:20	G49	EY		550		145	145	TX/TX	T-043	Pass
			CI		500		137	151	TX/TX	T-043	Pass
Temperature:							140	150	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:		90									
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/26/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 142

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-243	6:26	W43	JA	860		126	129	193	SE/SE	T-043	Pass
				3.5		140	139	184	SE/SE	T-043	Pass
Temperature:		60				133	141	182	SE/SE	T-043	Pass
Comments:											
TS-244	6:30	G49	EY		550		179	193	TX/TX	T-043	Pass
			CI		550		182	200	TX/TX	T-043	Pass
Temperature:		60					186	220	TX/TX	T-043	Pass
Comments:											
TS-245	11:58	G49	EY		550		139	151	SE/SE	T-043	Pass
			CI		550		131	149	SE/SE	T-043	Pass
Temperature:		96					140	150	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/27/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 143

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) 159	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-246	6:30	W85	DA	850		159	138	194	SE/SE	T-043	Pass
				4.0		155	151	195	SE/SE	T-043	Pass
Temperature:		58				126	136	192	SE/SE	T-043	Pass
Comments:											
TS-247	6:40	W26	TV	860		139	112	193	SE/SE	T-043	Pass
				4.0		139	119	190	SE/SE	T-043	Pass
Temperature:		58				135	133	194	SE/SE	T-043	Pass
Comments:											
TS-248	7:00	W43	JA	860		144	143	189	SE/SE	T-043	Pass
				4.0		138	139	195	SE/SE	T-043	Pass
Temperature:		58				142	145	179	SE/SE	T-043	Pass
Comments:											
TS-249	12:00	W43	JA	860		118	128	152	SE/SE	T-043	Pass
				4.0		121	125	144	SE/SE	T-043	Pass
Temperature:		79				115	121	169	SE/SE	T-043	Pass
Comments:											
TS-250	12:00	W85	DA	850		126	134	165	SE/SE	T-043	Pass
				4.0		125	130	159	SE/SE	T-043	Pass
Temperature:		79				120	134	162	SE/SE	T-043	Pass
Comments:											
TS-251	12:10	W26	TV	850		116	115	151	SE/SE	T-043	Pass
				4.0		114	116	157	SE/SE	T-043	Pass
Temperature:		79				119	120	135	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 8/30/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 144

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-252	7:00	G49	EY		550		145	192	TX/TX	T-043	Pass
			CI		550		140	192	TX/TX	T-043	Pass
Temperature:							147	196	TX/TX	T-043	Pass
Comments:											
TS-253	7:09	W43	JA	860		139	136	192	SE/SE	T-043	Pass
				4.0		142	144	190	SE/SE	T-043	Pass
Temperature:						132	146	194	SE/SE	T-043	Pass
Comments:											
TS-254	12:17	W43	JA	860		122	126	159	SE/SE	T-043	Pass
				4.0		130	129	149	SE/SE	T-043	Pass
Temperature:		73				127	128	160	SE/SE	T-043	Pass
Comments:											
TS-255	13:30	G49	EY		550		137	174	TX/TX	T-043	Pass
			CI		550		151	184	TX/TX	T-043	Pass
Temperature:		73					139	186	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
:omments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/1/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 146

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-256	12:05	G49	EY		550		125	169	TX/TX	T-043	Pass
			CI		550		128	165	TX/TX	T-043	Pass
Temperature:							139	160	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/2/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 147

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-257	7:42	G49	EY		550		161	220	TX/TX	T-043	Pass
			CI		550		186	219	TX/TX	T-043	Pass
Temperature:							172	226	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/3/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 148

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-258	8:05	W85	DA	850		148	142	184	TX/TX	T-043	Pass
				3.5		155	156	183	TX/TX	T-043	Pass
Temperature:		70				147	158	185	TX/TX	T-043	Pass
Comments:											
TS-259	8:10	W85	DA	850		125	128	176	SE/SE	T-043	Pass
				4.0		137	142	174	SE/SE	T-043	Pass
Temperature:		70				136	125	173	SE/SE	T-043	Pass
Comments:											
TS-260	12:30	W85	DA	850		140	141	158	TX/TX	T-043	Pass
				3.5		144	142	157	TX/TX	T-043	Pass
Temperature:		93				143	141	153	TX/TX	T-043	Pass
Comments:											
TS-261	12:34	W26	CN	860		134	125	125	SE/SE	T-043	Pass
				4.0		126	125	128	SE/SE	T-043	Pass
Temperature:		93				125	120	125	SE/SE	T-043	Pass
Comments:											
TS-262	12:35	W43	JA	860		117	128	158	SE/SE	T-043	Pass
				4.0		119	122	143	SE/SE	T-043	Pass
Temperature:		93				123	121	142	SE/SE	T-043	Pass
Comments:											
TS-263	12:50	G49	EY		500		144	155	TX/TX	T-043	Pass
			CI		500		136	151	TX/TX	T-043	Pass
Temperature:		93					136	162	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/8/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 150

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-264	13:10	W43	JA	860	550				SE/SE	T-043	
				4.0	550				SE/SE	T-043	
Temperature:		75							SE/SE	T-043	
Comments:											
TS-265	13:30	W85	DA	850		128	125	163	SE/SE	T-043	Pass
				4.0		127	139	161	SE/SE	T-043	Pass
Temperature:		75				131	131	155	SE/SE	T-043	Pass
Comments:											
TS-266	13:35	G49	EY		550		178	193	TX/TX	T-043	Pass
			CI		550		170	188	TX/TX	T-043	Pass
Temperature:		75					177	192	TX/TX	T-043	Pass
Comments:											
TS-267	13:50	W26	CN	860		125	126	190	SE/SE	T-043	Pass
				4.0		136	141	182	SE/SE	T-043	Pass
Temperature:		75				137	144	163	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/9/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 151

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-268	12:00	G49	EY		550		176	184	TX/TX	T-043	Pass
			CI		550		143	188	TX/TX	T-043	Pass
Temperature:		71					166	182	TX/TX	T-043	Pass
Comments:											
TS-269	12:30	W85	DA	850		126	125	159	SE/SE	T-043	Pass
				4.0		123	124	152	SE/SE	T-043	Pass
Temperature:		73				127	122	150	SE/SE	T-043	Pass
Comments:											
TS-270	12:32	W43	JA	860		135	132	157	SE/SE	T-043	Pass
				4.0		132	132	132	SE/SE	T-043	Pass
Temperature:		73				120	131	139	SE/SE	T-043	Pass
Comments:											
TS-271	13:20	W26	CN	8604		122	132	172	SE/SE	T-043	Pass
						122	134	160	SE/SE	T-043	Pass
Temperature:		73				130	140	177	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/10/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 152

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-272	6:50	G49	EY		550		120	220	TX/TX	T-043	Pass
			CI		550		122	209	TX/TX	T-043	Pass
Temperature:		60					119	225	TX/TX	T-043	Pass
Comments:											
TS-273	7:15	W26	CN	860		147	154	202	SE/SE	T-043	Pass
				4.0		139	144	211	SE/SE	T-043	Pass
Temperature:		60				155	138	200	SE/SE	T-043	Pass
Comments:											
TS-274	7:17	W43	JA	860		135	145	201	SE/SE	T-043	Pass
				4.0		128	150	174	SE/SE	T-043	Pass
Temperature:		60				134	132	174	SE/SE	T-043	Pass
Comments:											
TS-275	7:30	W85	DA	850		133	144	192	SE/SE	T-043	Pass
				4.0		131	144	160	SE/SE	T-043	Pass
Temperature:		60				147	135	185	SE/SE	T-043	Pass
Comments:											
TS-276	12:10	W26	CN	860		127	134	165	SE/SE	T-043	Pass
				4.0		126	137	155	SE/SE	T-043	Pass
Temperature:		70				125	121	144	SE/SE	T-043	Pass
Comments:											
TS-277	12:12	W43	JA	860		121	124	163	SE/SE	T-043	Pass
				4.0		134	121	163	SE/SE	T-043	Pass
Temperature:		70				125	119	160	SE/SE	T-043	Pass
Comments:											
TS-278	13:50	W85	DA	850		138	137	172	SE/SE	T-043	Pass
				4.0		143	125	169	SE/SE	T-043	Pass
Temperature:		70				139	137	162	SE/SE	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC.

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/13/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 153

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-279	7:20	G48	EY		550		169	203	TX/TX	T-043	Pass
			CI		550		177	207	TX/TX	T-043	Pass
Temperature:		67					178	216	TX/TX	T-043	Pass
Comments:											
TS-280	11:48	G49	EY		500		150	161	TX/TX	T-043	Pass
			CI		500		152	147	TX/TX	T-043	Pass
Temperature:		87					144	159	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/14/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 154

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-281	7:17	W26	CN	860		128	134	198	SE/SE	T-043	Pass
				4.0		130	135	167	SE/SE	T-043	Pass
Temperature:		66				120	117	173	SE/SE	T-043	Pass
Comments:											
TS-282	7:20	W43	JA	860		127	141	207	SE/SE	T-043	Pass
				4.0		124	145	189	SE/SE	T-043	Pass
Temperature:		66				132	130	190	SE/SE	T-043	Pass
Comments:											
TS-283	7:30	W85	DA	850		131	135	180	SE/SE	T-043	Pass
				4.0		128	142	178	SE/SE	T-043	Pass
Temperature:		66				125	144	175	SE/SE	T-043	Pass
Comments:											
TS-284	7:50	G49	EY		550		142	199	TX/TX	T-043	Pass
			CI		550		158	198	TX/TX	T-043	Pass
Temperature:		66					174	210	TX/TX	T-043	Pass
Comments:											
TS-285	11:45	W26	CN	860		122	120	165	SE/SE	T-043	Pass
				4.0		129	126	160	SE/SE	T-043	Pass
Temperature:		87				120	124	166	SE/SE	T-043	Pass
Comments:											
TS-286	12:20	W85	DA	850		120	130	158	SE/SE	T-043	Pass
				4.0		133	132	149	SE/SE	T-043	Pass
Temperature:		87				142	136	161	SE/SE	T-043	Pass
Comments:											
TS-287	12:34	G49	EY		500		156	166	TX/TX	T-043	Pass
			CI		500		149	151	TX/TX	T-043	Pass
Temperature:		88					143	153	TX/TX	T-043	Pass
omments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC.

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/14/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 154 -2

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-288	13:24	W43	JA	860		132	132	154	SE/SE	T-043	Pass
				4.0		130	133	155	SE/SE	T-043	Pass
Temperature:		88				122	122	160	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
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Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/15/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 155

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-289	7:00	G49	EY		550		140	196	TX/TX	T-043	Pass
			CI		550		135	194	TX/TX	T-043	Pass
Temperature:		68					150	203	TX/TX	T-043	Pass
Comments:											
TS-290	7:00	W26	CN	860		130	144	192	SE/SE	T-043	Pass
				4.0		126	136	180	SE/SE	T-043	Pass
Temperature:		68				126	145	197	SE/SE	T-043	Pass
Comments:											
TS-291	7:04	W43	JA	860		131	144	190	SE/SE	T-043	Pass
				4.0		132	146	180	SE/SE	T-043	Pass
Temperature:		68				135	134	188	SE/SE	T-043	Pass
Comments:											
TS-292	7:30	W85	DA	850		136	141	166	SE/SE	T-043	Pass
				4.0		138	144	184	SE/SE	T-043	Pass
Temperature:		68				140	139	190	SE/SE	T-043	Pass
Comments:											
TS-293	12:23	W43	JA	860		138	131	170	SE/SE	T-043	Pass
				4.0		136	132	170	SE/SE	T-043	Pass
Temperature:		81				130	130	164	SE/SE	T-043	Pass
Comments:											
TS-294	12:29	W26	CN	860		137	123	170	SE/SE	T-043	Pass
				4.0		135	128	160	SE/SE	T-043	Pass
Temperature:		81				126	128	175	SE/SE	T-043	Pass
Comments:											
TS-295	12:30	W85	DA	850		133	147	160	SE/SE	T-043	Pass
				4.0		134	139	176	SE/SE	T-043	Pass
Temperature:		81				139	140	180	SE/SE	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/15/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 155 -2

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-296	13:00	G49	EY		500		150	168	SE/SE	T-043	Pass
			CI		500		149	167	SE/SE	T-043	Pass
Temperature:		83					152	164	SE/SE	T-043	Pass
Comments:											
									SE/SE	T-043	
									SE/SE	T-043	
Temperature:									SE/SE	T-043	
Comments:											
									SE/SE	T-043	
									SE/SE	T-043	
Temperature:									SE/SE	T-043	
Comments:											
									TX/TX	T-043	
									TX/TX	T-043	
Temperature:									TX/TX	T-043	
Comments:											
									SE/SE	T-043	
									SE/SE	T-043	
Temperature:									SE/SE	T-043	
Comments:											
									SE/SE	T-043	
									SE/SE	T-043	
Temperature:									SE/SE	T-043	
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/16/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 156

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-297	9:30	W26	CN	860		133	122	183	SE/SE	T-043	Pass
				4.0		125	135	179	SE/SE	T-043	Pass
Temperature:		67				140	140	182	SE/SE	T-043	Pass
Comments:											
TS-298	9:35	W85	DA	850		131	144	179	SE/SE	T-043	Pass
		67		4.0		132	137	183	SE/SE	T-043	Pass
Temperature:						144	132	183	SE/SE	T-043	Pass
Comments:											
TS-299	12:20	G49	EY		550		146	165	TX/TX	T-043	Pass
			CI		550		150	159	TX/TX	T-043	Pass
Temperature:		75					159	172	TX/TX	T-043	Pass
Comments:											
TS-300	12:20	W26	CN	860		121	121	164	SE/SE	T-043	Pass
				4.0		118	126	164	SE/SE	T-043	Pass
Temperature:		75				132	128	161	SE/SE	T-043	Pass
Comments:											
TS-301	12:30	W85	DA	850		126	139	164	SE/SE	T-043	Pass
		67		4.0		126	129	175	SE/SE	T-043	Pass
Temperature:		75				129	137	181	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/17/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 157

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-302	8:45	G48	EY		550		123	214	TX/TX	T-043	Pass
			CI		550		129	177	TX/TX	T-043	Pass
Temperature:		61					114	193	TX/TX	T-043	Pass
Comments:											
TS-303	12:26	G48	EY		550		160	177	TX/TX	T-043	Pass
			CI		500		143	165	TX/TX	T-043	Pass
Temperature:		78					173	174	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/20/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 158

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-304	7:27	G48	EY		550		171	194	TX/TX	T-043	Pass
			CI		550		150	191	TX/TX	T-043	Pass
Temperature:		61					170	202	TX/TX	T-043	Pass
Comments:											
TS-305	8:30	G15	DA		550		120	187	TX/TX	T-043	Pass
			TV		550		130	187	TX/TX	T-043	Pass
Temperature:		62					110	179	TX/TX	T-043	Pass
Comments:											
TS-306	11:53	G48	EY		550		159	181	TX/TX	T-043	Pass
			CI		550		159	184	TX/TX	T-043	Pass
Temperature:		70					163	173	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/21/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 159

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-307	7:00	G48	EY		550		126	200	TX/TX	T-043	Pass
			CI		5550		125	183	TX/TX	T-043	Pass
Temperature:		55					127	202	TX/TX	T-043	Pass
Comments:											
TS-308	7:40	G15	DA		550		97	185	TX/TX	T-043	Pass
			TV		550		98	172	TX/TX	T-043	Pass
Temperature:		55					99	212	TX/TX	T-043	Pass
Comments:											
TS-309	11:45	G48	EY		550		135	164	TX/TX	T-043	Pass
			CI		550		147	168	TX/TX	T-043	Pass
Temperature:		76					146	170	TX/TX	T-043	Pass
Comments:											
TS-310	12:00	G15	DA		550		114	169	TX/TX	T-043	Pass
			TV		550		100	159	TX/TX	T-043	Pass
Temperature:		76					139	157	TX/TX	T-043	Pass
Comments:											
TS-311	12:15	W26	CN	860		138	128	173	SE/SE	T-043	Pass
				4.0		141	119	170	SE/SE	T-043	Pass
Temperature:		76				134	131	174	SE/SE	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/22/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 160

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-312	7:07	G48	EY		550		141		TX/TX	T-043	Shear Fail
			CI		550		145		TX/TX	T-043	Shear Fail
Temperature:							145		TX/TX	T-043	Shear Fail
Comments:											
TS-313	7:30	G15	DA		550		116		TX/TX	T-043	Shear Fail
			TV		550		136		TX/TX	T-043	Shear Fail
Temperature:							133		TX/TX	T-043	Shear Fail
Comments:											
TS-314	12:00	G15	EY		550		139		TX/TX	T-043	Shear Fail
			CI		550		142		TX/TX	T-043	Shear Fail
Temperature:							147		TX/TX	T-043	Shear Fail
Comments:											
TS-315	12:00	G48	DA		550		166		TX/TX	T-043	Shear Fail
			TV		550		164		TX/TX	T-043	Shear Fail
Temperature:							169		TX/TX	T-043	Shear Fail
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
omments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/23/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 161

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-316	7:00	G48	EY		550		144	185	TX/TX	T-043	Pass
			CI		550		147	170	TX/TX	T-043	Pass
Temperature:		60					134	198	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/24/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 162

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-317	7:30	G15	DA		550		99	195	TX/TX	T-043	Pass
			TV		550		104	198	TX/TX	T-043	Pass
Temperature:		60					98	198	TX/TX	T-043	Pass
Comments:											
TS-318	11:40	G48	EY		550		144	170	TX/TX	T-043	Pass
			CI		550		128	160	TX/TX	T-043	Pass
Temperature:		80					120	164	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/27/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 163

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-319	7:30	G15	DA		550		98	182	TX/TX	T-043	Pass
			TV		550		107	183	TX/TX	T-043	Pass
Temperature:		70					96	189	TX/TX	T-043	Pass
Comments:											
TS-320	11:52	G48	EY		550		118	164	TX/TX	T-043	Pass
			CI		550		120	163	TX/TX	T-043	Pass
Temperature:		83					110	171	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/28/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 164

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-321	7:22	G48	EY		550		134	178	TX/TX	T-043	Pass
			CI		550		140	188	TX/TX	T-043	Pass
Temperature:		72					140	190	TX/TX	T-043	Pass
Comments:											
TS-322	8:00	G15	DA		550		93	175	TX/TX	T-043	Pass
			TV		550		91	170	TX/TX	T-043	Pass
Temperature:		72					97	179	TX/TX	T-043	Pass
Comments:											
TS-323	11:44	G48	EY		550		150	156	TX/TX	T-043	Pass
			CI		550		147	158	TX/TX	T-043	Pass
Temperature:		90					144	154	TX/TX	T-043	Pass
Comments:											
TS-324	11:45	G15.	DA		550		114	170	TX/TX	T-043	Pass
			TV		550		127	176	TX/TX	T-043	Pass
Temperature:		90					130	169	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 9/29/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 165

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-325	7:30	G48	EY				149	195	TX/TX	T-043	Pass
			CI				148	198	TX/TX	T-043	Pass
Temperature:							150	208	TX/TX	T-043	Pass
Comments:											
TS-326	7:00	G15	DA				147	193	TX/TX	T-043	Pass
			TV				143	187	TX/TX	T-043	Pass
Temperature:							140	179	TX/TX	T-043	Pass
Comments:											
TS-327	11:45	G48	EY		550		130	177	TX/TX	T-043	Pass
			CI		550		133	176	TX/TX	T-043	Pass
Temperature:		86					119	183	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 10/1/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 167

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-328	7:45	W85	DA	850		141	134	200	SM/SM	T-043	Pass
				4.0		137	143	188	SM/SM	T-043	Pass
Temperature:		71				135	140	192	SM/SM	T-043	Pass
Comments:											
TS-329	7:55	W26	CN	860		135	164	207	SM/SM	T-043	Pass
				4.0		158	162	189	SM/SM	T-043	Pass
Temperature:		71				141	147	202	SM/SM	T-043	Pass
Comments:											
TS-330	8:11	W24	JA	860		130	124	187	SM/SM	T-043	Pass
				4.0		131	136	187	SM/SM	T-043	Pass
Temperature:		71				146	129	181	SM/SM	T-043	Pass
Comments:											
TS-331	8:15	G48	EY		550		163	170	TX/TX	T-043	Pass
			CI		550		164	180	TX/TX	T-043	Pass
Temperature:		73					164	170	TX/TX	T-043	Pass
Comments:											
TS-332	11:48	G48	EY		550		143	172	TX/TX	T-043	Pass
			CI		550		147	164	TX/TX	T-043	Pass
Temperature:		83					150	172	TX/TX	T-043	Pass
Comments:											
TS-333	12:00	W85	DA	850		158	139	172	SM/SM	T-043	Pass
				4.0		156	145	176	SM/SM	T-043	Pass
Temperature:		83				144	151	182	SM/SM	T-043	Pass
Comments:											
TS-334	12:28	W24	JA	860		118	116	175	SM/SM	T-043	Pass
				4.0		124	121	156	SM/SM	T-043	Pass
Temperature:		83				129	127	168	SM/SM	T-043	Pass
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 10/1/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 167 -2

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-335	12:45	W26	CN	860		128	130	161	SM/SM	T-043	Pass
				4.0		126	123	155	SM/SM	T-043	Pass
Temperature:		84				121	120	169	SM/SM	T-043	Pass
Comments:											
Temperature:											
Comments:											
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Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 10/2/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 168

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-336	7:40	G48	EY		550		154	183	TX/TX	T-043	Pass
			CI		550		150	178	TX/TX	T-043	Pass
Temperature:							154	190	TX/TX	T-043	Pass
Comments:											
TS-337	11:30	G48	EY		550		128	152	TX/TX	T-043	Pass
			CI		550		140	144	TX/TX	T-043	Pass
Temperature:							120	147	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 10/4/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 169

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-338	7:00	G48	EY		550		128	194	TX/TX	T-043	Pass
			CI		550		104	177	TX/TX	T-043	Pass
Temperature:		64					117	175	TX/TX	T-043	Pass
Comments:											
TS-339	11:46	G48	EY		550		161	183	TX/TX	T-043	Pass
			CI		550		180	180	TX/TX	T-043	Pass
Temperature:		75					158	184	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											
Temperature:											
Comments:											

Geomembrane Trial Seam Log

Secondary Geomembrane

ENVIROTECH
ENGINEERING & CONSULTING, INC

Submittal 05-025

Project Information

Project: Hanford ERDF Cells 9-10
Project ID: 01-0032
Project No. S013213S00
Installer: ESI
Date: 10/7/2010

Material: 60 mil HDPE (Textured)
Location: Hanford
Peel (min): 91 ppi Shear (min): 120 ppi
Peel (min): Ext. 78 Shear (min): 120 ppi
Report No: 5-16- 172

Sample Number	Time	Machine Number	Tech Wld/Grd	Fusion Welder °F / Speed	Extrusion Welder °F / Preheat	Peel (ppi) In	Peel (ppi) Out	Shear (ppi)	Seam Type	Tensi-ometer	Pass / Fail
TS-340	7:21	G48	EY		550		167	199	TX/TX	T-043	Pass
			CI		550		155	180	TX/TX	T-043	Pass
Temperature:							120	204	TX/TX	T-043	Pass
Comments:											
Temperature:											
Comments:											
Temperature:											
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