

**ARCADIS**

**Appendix B**

**Extraction Well Construction  
Details**

<b>Date Start/Finish:</b> 8/30/2005 <b>Drilling Company:</b> NA <b>Drilling Method:</b> NA	<b>Northing:</b> 1116077.50 <b>Easting:</b> 479833.16 <b>Casing Elevation:</b> 30.31 feet amsl  <b>Borehole Depth:</b> NA <b>Surface Elevation:</b> 31.98 feet amsl  <b>Geologist:</b> NA	<b>Well/Boring ID:</b> EW-101 (EXU-1)  <b>Client:</b> Lockheed Martin Group  <b>Location:</b> Tallevast St. Sarasota, FL
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DEPTH	ELEVATION	Sample Run Number	Sample/In/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
0							Flushmount protective cover
30		NA	NA	NA		Geologic data not available	Concrete pad (approx. 0-1 ft. bls)
5							6-inch diameter PVC riser (0-15 ft. bls)
25							Cement bentonite grout (approx. 0-13 ft bls)
10							Sand (approx. 13-30 ft. bls)
20							6-inch diameter, 0.020-inch slot PVC well screen (15-30 ft. bls)
15							

**Remarks:** Wells installed by Tetra Tech. Well logs constructed from available notes.



<b>Date Start/Finish:</b> 8/30/2005 <b>Drilling Company:</b> NA <b>Drilling Method:</b> NA	<b>Northing:</b> 1116077.50 <b>Easting:</b> 479833.16 <b>Casing Elevation:</b> 30.31 feet amsl  <b>Borehole Depth:</b> NA <b>Surface Elevation:</b> 31.98 feet amsl  <b>Geologist:</b> NA	<b>Well/Boring ID:</b> EW-101 (EXU-1)  <b>Client:</b> Lockheed Martin Group  <b>Location:</b> Tallevast St. Sarasota, FL
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
15						Geologic data not available	<p>6-inch diameter, 0.020-inch slot PVC well screen (15-30 ft. bls)</p> <p>Sand (approx. 13-30 ft. bls)</p>
20							
10							
25							
5							
30						End of boring unknown	

 <i>Infrastructure, environment, facilities</i>	<b>Remarks:</b> Wells installed by Tetra Tech. Well logs constructed from available notes.
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<b>Date Start/Finish:</b> 10/26/07 <b>Drilling Company:</b> Preferred Drilling Solutions <b>Drilling Method:</b> Hollow Stem Auger 8.25"	<b>Northing:</b> 1116241.71 <b>Easting:</b> 479608.78 <b>Casing Elevation:</b> 30.52 ft amsl  <b>Borehole Depth:</b> 41 ft bls <b>Surface Elevation:</b> NA  <b>Geologist:</b> S. Klimek	<b>Boring ID:</b> EW-102  <b>Client:</b> Lockheed Martin Corp.  <b>Location:</b> Tallevast St. Sarasota, FL
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
0	0						Flushmount protective cover
		NA	0-5	NA		Brown fine SAND, grass top 0.3' bgs, loose, dry.	Concrete pad (0-0.5' bls)
						Brown and gray fine SAND, some very fine Sand, loose, dry.	
5	-5	1	5-6	1.0		Dark brown very fine to fine SAND, moderately loose, wet.	
		2	6-8	1.5		Dark brown fine SAND, trace Shells, loose, wet.	
		3	8-10	1.7		Brown gray fine SAND, loose, non-plastic, wet.	
						Dark brown fine SAND, trace Roots, loose, non-plastic, wet.	
10	-10	4	10-12	1.7		Very dark brown and black very fine to fine SAND, moderately loose, non-plastic, wet.	Schedule 40 PVC riser (0-31' bls)
		5	12-14	1.6			
15	-15	6	14-16	1.5		Dark brown fine SAND, loose, non-plastic, wet.	Cement bentonite grout (0-29' bls)

**Remarks:** feet bls = feet below land surface; ft amsl = feet above mean sea level; NA = not applicable/available  
Stratigraphic descriptions taken from Pilot LSAS.


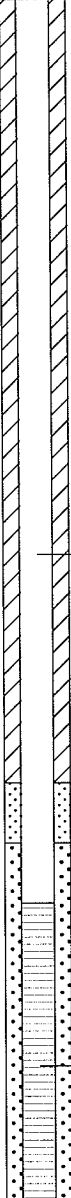

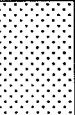








**Client:**  
Lockheed Martin Corp.

**Boring ID:** EW-102

**Site Location:**  
Tallevast St.  
Sarasota, FL

**Borehole Depth:** 41 ft bls

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
20-20		7	16-18	2.0		Dark brown fine SAND, loose, non-plastic, wet.	 <p>Cement bentonite grout (0-29' bls)</p> <p>Schedule 40 PVC riser (0-31' bls)</p> <p>30/65 Sand (29-30' bls)</p> <p>6/20 Sand (30-41' bls)</p> <p>Schedule 40 PVC 0.020 slot well screen (31-36' bls)</p>
						Brown fine to very fine SAND, little Silt, moderately dense, non-plastic, wet.	
		8	18-20	1.5		Light brown fine SAND, loose, wet.	
		9	20-22	2.0		Moderately loose below below 20' bgs.	
	10	22-24	2.0		Moderately dense below below 22' bgs.		
25-25		11	24-26	0.4		Gray Clayey SAND, some angular fine to medium Gravel (cemented Silt)	
		12	26-28	0.3			
30-30		13	28-30	NA		No Recovery.	
		14	30-32	0.5		Gray Clayey SAND, some angular fine to medium Gravel (cemented Silt)	
		15	32-34	0.0		No Recovery.	
		16	34-36	0.5		Gray brown Clayey SILT, little angular fine Gravel, trace fine to coarse Sand, plastic, wet.	
35-35						No recovery.	

**Remarks:** feet bls = feet below land surface; ft amsl = feet above mean sea level; NA = not applicable/available  
Stratigraphic descriptions taken from Pilot LSAS.



**Client:**  
Lockheed Martin Corp.

**Boring ID:** EW-102

**Site Location:**  
Tallevast St.  
Sarasota, FL

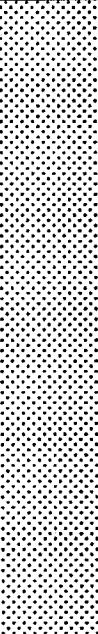
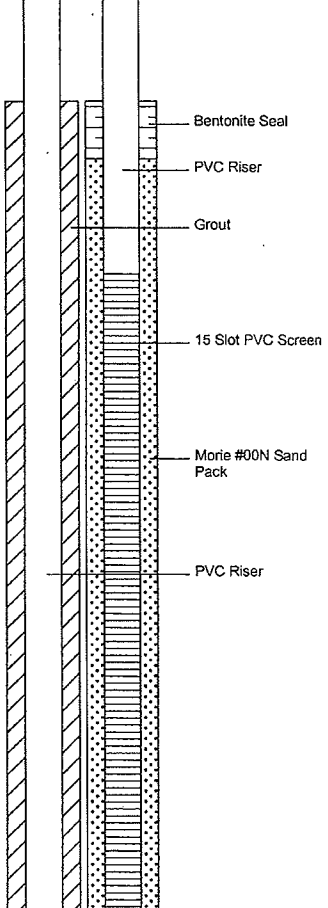
**Borehole Depth:** 41 ft bls


DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
40-40		NA	36-41'	NA		No soil samples collected; blind drilled to 41' bls.	<p>Schedule 40 PVC sump (36-41')</p> <p>6/20 Sand (30-41' bls)</p>
45-45							
50-50							
55-55							

**Remarks:** feet bls = feet below land surface; ft amsl = feet above mean sea level; NA = not applicable/available  
Stratigraphic descriptions taken from Pilot LSAS.



<b>Date Start/Finish:</b> 5/31/06 <b>Drilling Company:</b> Prosonic <b>Drilling Method:</b> Rotasonic	<b>Northing:</b> NA <b>Easting:</b> NA <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 35' bgs <b>Surface Elevation:</b> NA  <b>Geologist:</b> S. Klimek	<b>Well/Boring ID:</b> Recovery Well A  <b>Client:</b> Lockheed Martin  <b>Location:</b> Tallevast St. Sarasota, FL
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DEPTH	ELEVATION	Geologic Column	Stratigraphic Description	Well/Boring Construction	
				EW-104 LSAS	EW-103 USAS
0	0		Hand augered to 5' bgs.		
5	-5		Brown to dark brown black fine SAND, trace Silt, trace Roots bottom three feet, non-plastic, moderately loose, wet.		
10	-10				
15	-15				

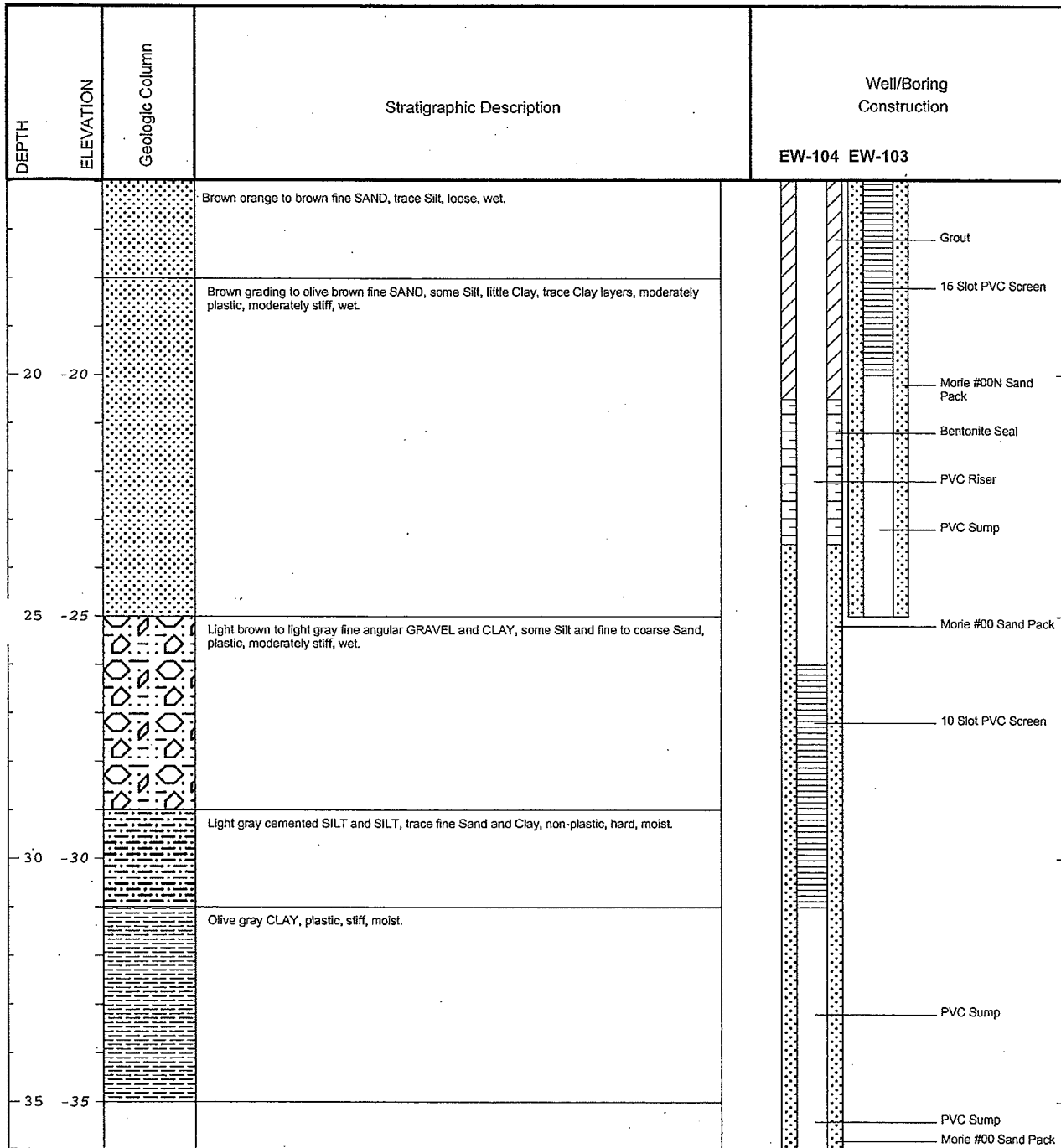
 <b>BLASLAND, BOUCK &amp; LEE, INC.</b> <i>engineers, scientists, economists</i>	<b>Remarks:</b> bgs = below ground surface; NA = not applicable/available
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**Client:**  
Lockheed Martin

**Site Location:**  
Tallevast St.  
Sarasota, FL

**Well/Boring ID:** Recovery Well A

**Borehole Depth:** 35' bgs




**Remarks:**  
bgs = below ground surface;  
NA = not applicable/available

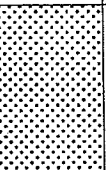
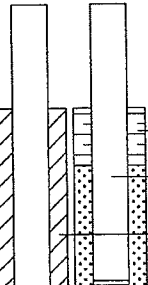
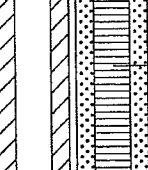
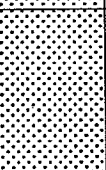
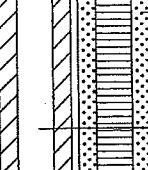
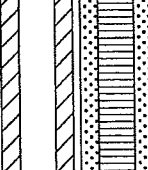
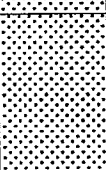
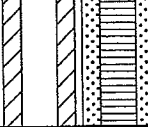

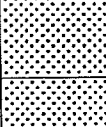




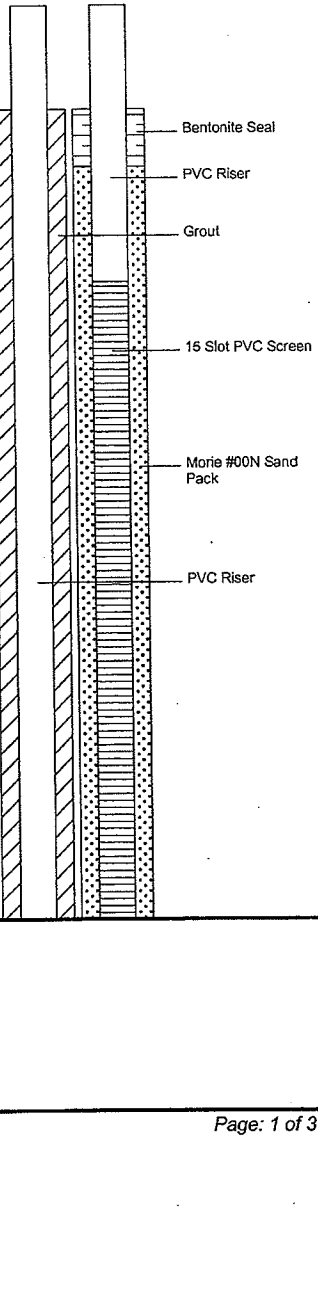
<b>Client:</b> Lockheed Martin  <b>Site Location:</b> Tallevast St. Sarasota, FL	<b>Well/Boring ID:</b> Recovery Well A  <b>Borehole Depth:</b> 35' bgs
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DEPTH	ELEVATION	Geologic Column	Stratigraphic Description	Well/Boring Construction
				EW-104 EW-103
40	-40			
45	-45			
50	-50			

 <p><b>BLASLAND, BOUCK &amp; LEE, INC.</b>  <i>engineers, scientists, economists</i></p>	<b>Remarks:</b> bgs = below ground surface; NA = not applicable/available
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<b>Date Start/Finish:</b> 5/3/06 <b>Drilling Company:</b> Prosonic <b>Drilling Method:</b> Rotasonic	<b>Northing:</b> NA <b>Easting:</b> NA <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 35' bgs <b>Surface Elevation:</b> NA  <b>Geologist:</b> S. Klimek	<b>Well/Boring ID:</b> Recovery Well B  <b>Client:</b> Lockheed Martin  <b>Location:</b> Tallevast St. Sarasota, FL
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DEPTH	ELEVATION	Geologic Column	Stratigraphic Description	Well/Boring Construction	
				EW-106 LSAS	EW-105 USAS
0	0		Hand augered to 5' bgs.		
5	-5		Dark brown grading to brown tan grading to brown fine SAND, loose, wet.		
10	-10		Very dark brown fine SAND, trace Roots, loose, wet.		
15	-15		Dark brown orange fine SAND, trace Clay and Silt below 14' bgs, moderately dense, wet.		
			Brown orange to brown fine SAND, trace Silt, loose, wet.		

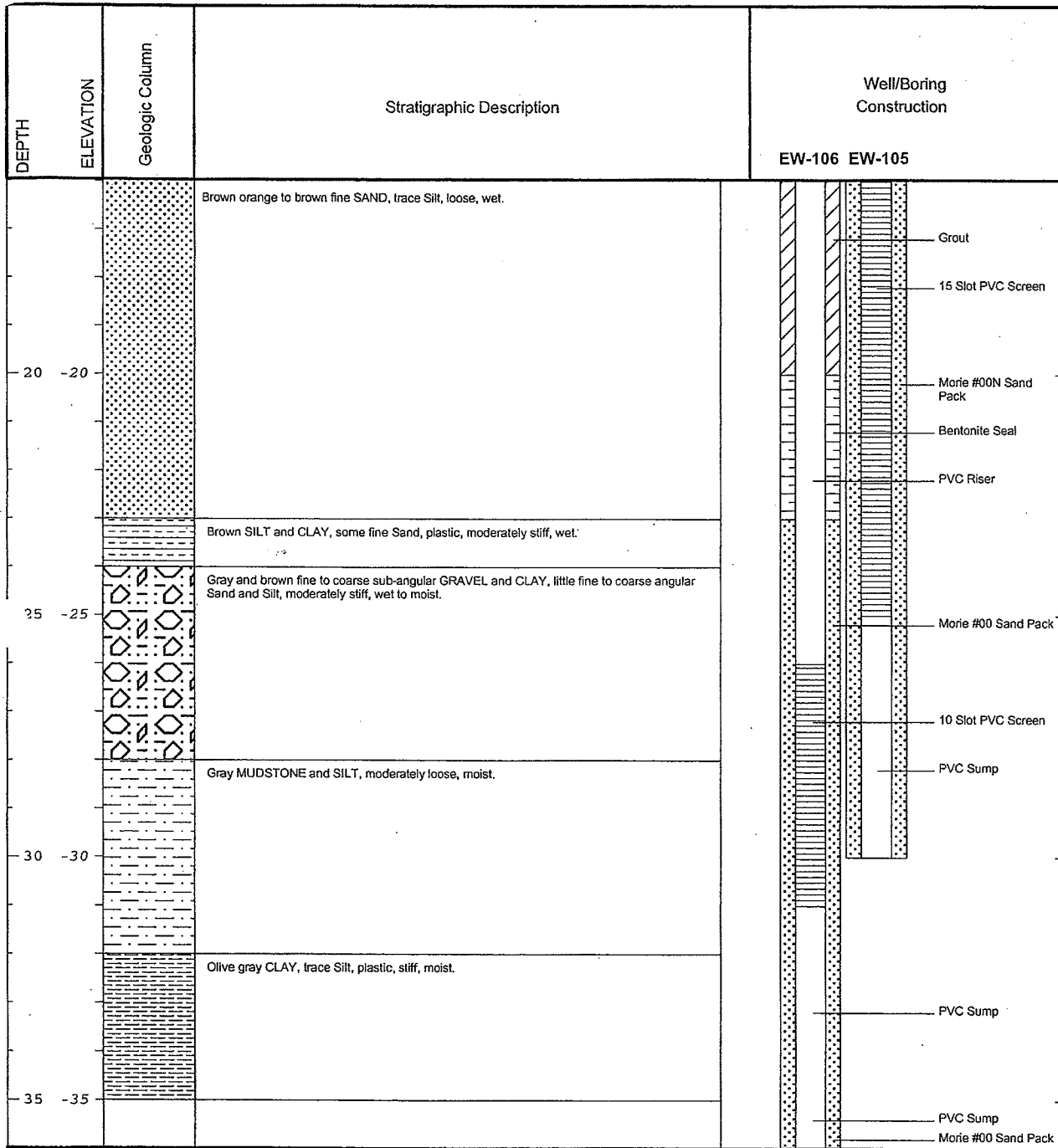


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**BLASLAND, BOUCK & LEE, INC.**  
*engineers, scientists, economists*

**Remarks:**  
 bgs = below ground surface;  
 NA = not applicable/available

**Client:**  
 Lockheed Martin  
**Site Location:**  
 Tallevast St.  
 Sarasota, FL


**Well/Boring ID:** Recovery Well B  
**Borehole Depth:** 35' bgs



**Remarks:**  
 bgs = below ground surface;  
 NA = not applicable/available

<b>Client:</b> Lockheed Martin  <b>Site Location:</b> Tallevast St. Sarasota, FL	<b>Well/Boring ID:</b> Recovery Well B  <b>Borehole Depth:</b> 35' bgs
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DEPTH	ELEVATION	Geologic Column	Stratigraphic Description	Well/Boring Construction
				EW-106 EW-105
40	-40			
45	-45			
50	-50			

 <b>BLASLAND, BOUCK &amp; LEE, INC.</b> <i>engineers, scientists, economists</i>	<b>Remarks:</b> bgs = below ground surface; NA = not applicable/available
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<b>Date Start/Finish:</b> 10/24/07 <b>Drilling Company:</b> Preferred Drilling Solutions <b>Drilling Method:</b> Hollow Stem Auger 8.25"	<b>Northing:</b> 1115916.94 <b>Easting:</b> 479918.26 <b>Casing Elevation:</b> 29.64 ft amsl  <b>Borehole Depth:</b> 34' bls <b>Surface Elevation:</b> NA  <b>Geologist:</b> A. Brey	<b>Boring ID:</b> EW-107  <b>Client:</b> Lockheed Martin Corp.  <b>Location:</b> Tallevast St. Sarasota, FL
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
0	0					ASPHALT.	Flushmount protective cover
		NA	0-5	NA		Fine SAND and fine GRAVEL, loose, non-plastic. Gray brown and dark brown layered fine SAND, trace medium Sand, loose, non-plastic, dry.	Concrete pad (0-1' bls)
						Light brown tan fine to medium SAND, no odor, loose, non-plastic, wet.	Cement bentonite grout (1-3.5' bls)
5	-5	1	5-6	0.7		Brown and light brown fine to medium SAND, no odor, loose, non-plastic, wet.	30/65 Sand (3.5-5' bls)
		2	6-8	1.8		Dark brown fine SAND, no odor, moderately loose, non-plastic, wet.	5" Schedule 40 PVC riser (0-7' bls)
		3	8-10	1.1		White SHELLS.	6/20 Sand (5-27.5' bls)
10	-10	4	10-12	1.9		Brown and dark brown fine to medium SAND, no odor, moderately loose, non-plastic, wet.	5" Schedule 40 PVC 0.020 slot well screen (7-27' bls)
		5	12-14	1.2		Brown and light brown Clayey SAND, no odor, hard, slightly plastic, wet.	
15	-15	6	14-16	2.0			

**Remarks:** ft bls = feet below land surface; ft amsl = feet above mean sea level; NA = not applicable/available  
Stratigraphic descriptions taken from Pilot USAS boring.



**Client:**  
Lockheed Martin Corp.

**Boring ID:** EW-107

**Site Location:**  
Tallevast St.  
Sarasota, FL

**Borehole Depth:** 34' bls

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
20-20		7	16-18	1.7		Brown fine SAND, trace Silt and Shells, no odor, moderately loose, non-plastic, wet.	<p>5" Schedule 40 PVC 0.020 slot well screen (7-27' bls)</p> <p>6/20 Sand (5-27.5' bls)</p> <p>5" Schedule 40 PVC sump (27-32')</p> <p>Bentonite chip (27.5-32.25' bls)</p>
						No Shells below 18' bgs.	
		8	18-20	1.3		Brown and gray brown Sandy CLAY, no odor, stiff, plastic, wet.	
		9	20-22	1.3		Gray brown fine SAND, some medium Sand, trace Silt, trace Shells from 20' - 20.4' bgs, no odor, loose, non-plastic, wet.	
25-25		10	22-24	1.5		Gray brown fine to medium SAND, trace Shells, trace very fine Sand, no odor, moderately loose, wet.	
		11	24-26	1.8		Brown fine to medium SAND, trace very fine Sand, no odor, moderately loose, wet.	
						Gray CLAY, moderately stiff, plastic, wet.	
		12	26-28	1.7		Gray brown fine SAND, some medium Sand, trace Silt, no odor, moderately loose, non-plastic, wet.	
30-30						Gray Silty CLAY, trace cemented Silt, moderately stiff, wet.	
		13	28-30	0.0		No Recovery.	
		14	30-32	0.5		Dark gray angular fine GRAVEL, trace very fine to coarse Sand, no odor, loose, wet.	
		15	32-34	0.0		No Recovery.	
35-35							

**Remarks:** ft bls = feet below land surface; ft amsl = feet above mean sea level; NA = not applicable/available  
Stratigraphic descriptions taken from Pilot USAS boring.



**Client:**  
Lockheed Martin Corp.

**Boring ID:** EW-107

**Site Location:**  
Tallevast St.  
Sarasota, FL

**Borehole Depth:** 34' bls

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
40-40						Drilled through without sampling.	
45-45							
50-50							
55-55							



**Remarks:** ft bls = feet below land surface; ft amsl = feet above mean sea level; NA = not applicable/available  
Stratigraphic descriptions taken from Pilot USAS boring.

<b>Date Start/Finish:</b> 8/31/2005 <b>Drilling Company:</b> NA <b>Drilling Method:</b> NA	<b>Northing:</b> 1116041.67 <b>Easting:</b> 479786.71 <b>Casing Elevation:</b> 30.09 feet amsl  <b>Borehole Depth:</b> NA <b>Surface Elevation:</b> 31.84 feet amsl  <b>Geologist:</b> NA	<b>Well/Boring ID:</b> EW-108 (EXL-1) <b>Client:</b> Lockheed Martin Group  <b>Location:</b> Tallevast St. Sarasota, FL
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
0							
30		NA	NA	NA		Geologic data not available	
5							
25							
10							
20							
15							

	<b>Remarks:</b> Wells installed by Tetra Tech. Well logs constructed from available notes.
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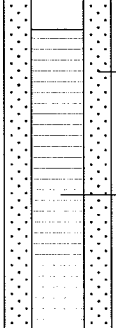



<b>Date Start/Finish:</b> 8/31/2005 <b>Drilling Company:</b> NA <b>Drilling Method:</b> NA	<b>Northing:</b> 1116041.67 <b>Easting:</b> 479786.71 <b>Casing Elevation:</b> 30.09 feet amsl  <b>Borehole Depth:</b> NA <b>Surface Elevation:</b> 31.84 feet amsl  <b>Geologist:</b> NA	<b>Well/Boring ID:</b> EW-108 (EXL-1) <b>Client:</b> Lockheed Martin Group  <b>Location:</b> Tallevast St. Sarasota, FL
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
15						Geologic data not available	<p>Cement bentonite grout (approx. 0-33.5 ft bls)</p> <p>6-inch diameter PVC riser (0-35.5 ft. bls)</p> <p>Sand (approx. 33.5-40.5 ft. bls)</p>
20							
10							
25							
5							
30							
0							

	<b>Remarks:</b> Wells installed by Tetra Tech. Well logs constructed from available notes.
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<b>Date Start/Finish:</b> 8/31/2005 <b>Drilling Company:</b> NA <b>Drilling Method:</b> NA	<b>Northing:</b> 1116041.67 <b>Easting:</b> 479786.71 <b>Casing Elevation:</b> 30.09 feet amsl  <b>Borehole Depth:</b> NA <b>Surface Elevation:</b> 31.84 feet amsl  <b>Geologist:</b> NA	<b>Well/Boring ID:</b> EW-108 (EXL-1) <b>Client:</b> Lockheed Martin Group  <b>Location:</b> Tallevast St. Sarasota, FL
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Geologic Column	Stratigraphic Description	Boring Construction
0						Geologic data not available	
-5							 <p>Sand (approx. 33.5-40.5 ft. bls)</p> <p>6-inch diameter, 0.020-inch slot PVC well screen (35.5-40.5 ft. bls)</p>
40						End of boring unknown	

 <i>infrastructure, environment, facilities</i>	<b>Remarks:</b> Wells installed by Tetra Tech. Well logs constructed from available notes.
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<b>Date Start/Finish:</b> 5/2/06 <b>Drilling Company:</b> Prosonic <b>Drilling Method:</b> Rotosonic	<b>Northing:</b> NA <b>Easting:</b> NA <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 35' bgs <b>Surface Elevation:</b> NA  <b>Geologist:</b> S. Klimek	<b>Well/Boring ID:</b> Recovery Well E  <b>Client:</b> Lockheed Martin  <b>Location:</b> Tallevast St. Sarasota, FL
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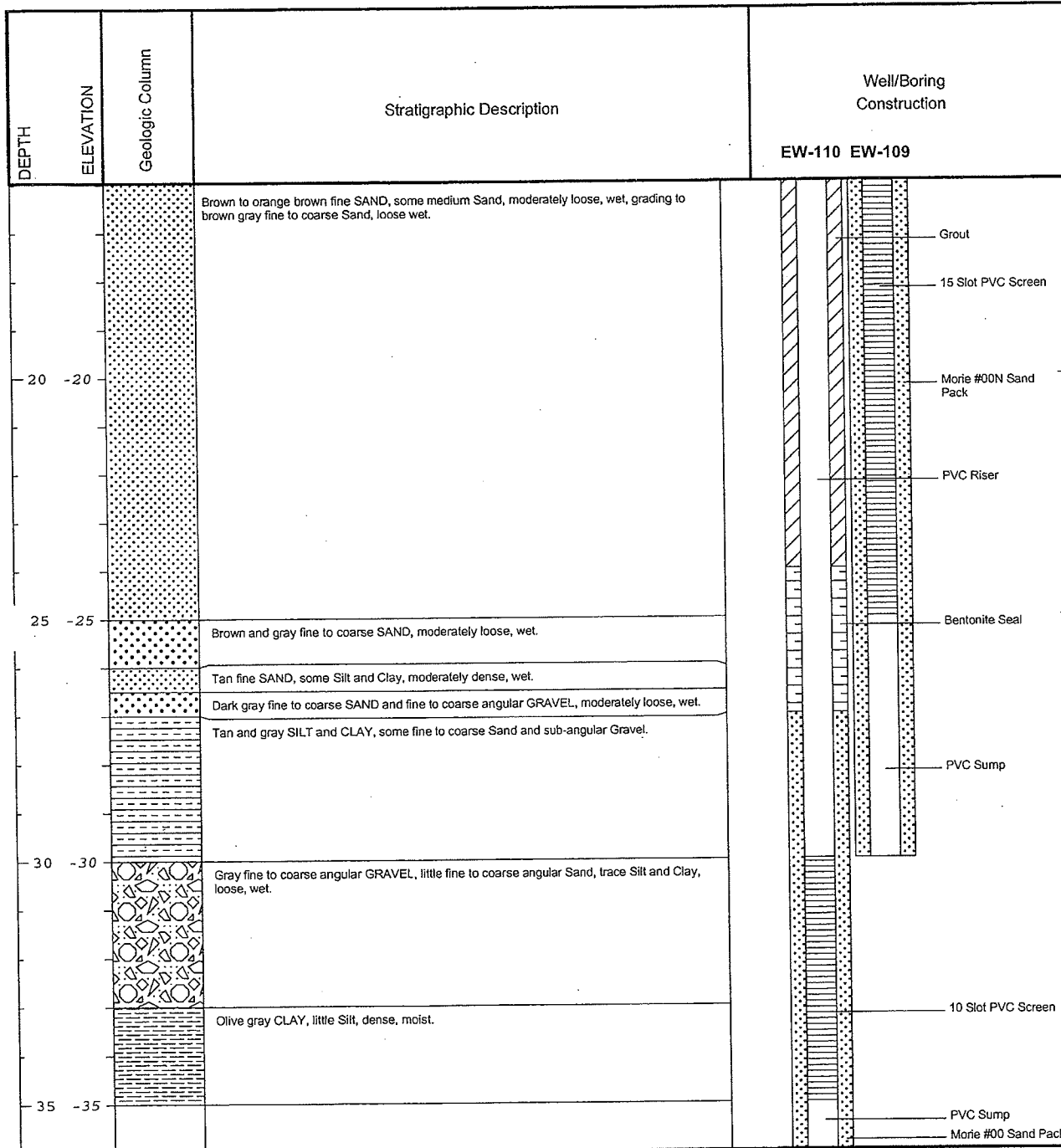
DEPTH	ELEVATION	Geologic Column	Stratigraphic Description	Well/Boring Construction
				EW-110 LSAS    EW-109 USAS
0	0		Hand augered to 5' bgs.	
5	-5		Dark brown fine to medium SAND, trace Roots, non-plastic, loose, wet.	<p>Labels in diagram:            Bentonite Seal            PVC Riser            Grout            15 Slot PVC Screen            Morie #00N Sand Pack            PVC Riser</p>
			Light gray fine SAND, loose, dry.	
			Light tan fine to medium SAND grading to very dark brown, moderately loose, wet.	
10	-10		Dark brown fine to medium SAND grading to light gray tan, moderately loose, wet.	
			Brown to orange brown fine SAND, little Silt and Clay, moderately dense, wet.	
15	-15		Brown to orange brown fine SAND, some medium Sand, moderately loose, wet, grading to brown gray fine to coarse Sand, loose wet.	

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 engineers, scientists, economists

**Remarks:**  
 bgs = below ground surface;  
 NA = not applicable/available

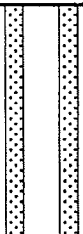
Client:  
Lockheed Martin  
Site Location:  
Tallevast St.  
Sarasota, FL


Well/Boring ID: Recovery Well E  
Borehole Depth: 35' bgs



Remarks:  
bgs = below ground surface;  
NA = not applicable/available

<b>Client:</b> Lockheed Martin  <b>Site Location:</b> Tallevast St. Sarasota, FL	<b>Well/Boring ID:</b> Recovery Well E  <b>Borehole Depth:</b> 35' bgs
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DEPTH	ELEVATION	Geologic Column	Stratigraphic Description	Well/Boring Construction
				EW-110 EW-109
40	-40			
45	-45			
50	-50			

 <b>BLASLAND, BOUCK &amp; LEE, INC.</b> <i>engineers, scientists, economists</i>	<b>Remarks:</b> bgs = below ground surface; NA = not applicable/available
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