

# Boring Log

Project Number: 2027.01

Boring No.: RSAQ5

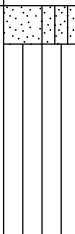

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/09/09


Date Completed: 09/09/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAQ5-41B, -41BMS, -41BMDS 13:24			SP-SM	Qal	Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. Trace fine sub-angular gravel to 5/8", 30% fine sub-angular sand, 70% non to moderate-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings. Much caliche as grain coatings and nodules 39.0' - 40.0'.	▽	14.4	0.0	
37				ML	UMCf (MCF)					
38										
39										
40	Total depth 41.0' @ 13:26, 9-9-09									
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DRB-ENVIRO BORING\_2027.01.GPJ 1/13/10

# Boring Log

Project Number: 2027.01		Boring No.: <b>RSAQ6</b>	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/11/09	Date Completed: 09/11/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 38.0	Depth to Water (ft bgs): 32.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 38.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAQ6-0.5B 09:26			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose - loose, dry. 5% fine sub-angular gravel to 1/2", 75% fine to medium sub-angular sand, 20% non-plastic fines. No odor or staining.		38.9	0.0	
2										
3										
4										
5										
6	RSAQ6-10B 09:40			SP	Poorly Graded Sand (SP): Pale yellowish brown 10 YR (6/2), very loose - loose, dry. 5% fine sub-angular gravel to 1/2", 90% fine to medium sub-angular sand, 5% non-plastic fines. No odor or staining. Gravel lens 6.5' - 8.0'		45.1	0.0		
7										
8										
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14										
15										
16	RSAQ6-25B 10:05			SM	Silty Sand (SM): Light yellowish brown 10 YR (6/4), loose, dry. 5% coarse sub-angular gravel to 2", 65% fine to medium sub-angular sand, 30% non-plastic fines. No odor or staining.		23.1	0.0		
17										
18										
19										
20										
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25										
26				ML	UMCf (MCf)		12.9	0.0		
27										
28							▽	16.9	0.0	
29										
30										
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# Boring Log

Project Number: 2027.01

Boring No.: RSAQ6


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/11/09

Date Completed: 09/11/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAQ6-38B, RSAQ6009-38B 10:40			ML	UMCf (MCf)	Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. Trace fine sub-angular gravel to 5/8", 30% fine sub-angular sand, 70% non to moderate-plastic fines. No odor or staining. Some caliche as nodules and grain coatings.		19.7	0.0	
37								8.3	0.0	
38	Total depth 38.0' @ 10:40, 9-11-09									
39										
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# Boring Log

Project Number: 2027.01		Boring No.: RSAR5	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 10/06/09	Date Completed: 10/06/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 40.0	Depth to Water (ft bgs): 34.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 40.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAR5-0.5B 08:24			SM	Qal	Silty Sand (SM): Light yellowish brown 10 YR (6/4), loose, dry. 3% fine sub-angular gravel to 5/8", 67% fine to medium sub-angular sand, 30% non-plastic fines. No odor or staining.				
2										
3								9.3	0.0	
4										
5								12.9	0.1	
6										
7										
8										
9										
10	RSAR5-10B 08:37			SM	Qal	Up to 5% gravel to 1/2" @ 10.0'				
11										
12								27.3	0.1	
13								9.2	0.0	
14										
15										
16						Gravel lens @ 15.0'		13.5	0.0	
17								7.1	0.0	
18										
19								10.3	0.0	
20								8.6	0.0	
21										
22								10.3	0.0	
23										
24								13.4	0.0	
25	RSAR5-25B 09:05			ML	UMCf (MCF)	Up to 10% fine sub-angular gravel to 1" @ 25.0'				
26										
27								14.7	0.0	
28										
29								19.6	0.0	
30						Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. Trace fine sub-angular gravel to 5/8", 30% fine sub-angular sand, 70% non to moderate-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings.		5.6	0.0	
31										
32						32.0' - 33.0': 10% fine sub-angular gravel to 1/2"		41.3	0.1	
33										
34						First water @ 34.0'	▽	19.4	0.0	

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# Boring Log

Project Number: 2027.01

Boring No.: RSAR5


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 10/06/09

Date Completed: 10/06/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAR5-40B, -40BMS, -40BMSD 09:46			ML	UMCf (MCF)	Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. Trace fine sub-angular gravel to 5/8", 30% fine sub-angular sand, 70% non to moderate-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings.	7.0	0.0		
37						9.5	0.0			
38						11.3	0.0			
39						Much caliche as grain coatings and nodules 39.0' - 40.0'.				
40						Total depth 40.0' @ 09:50, 10-6-09				
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# Boring Log

Project Number: 2027.01		Boring No.: <b>RSAR6</b>	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/14/09	Date Completed: 09/14/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 37.0	Depth to Water (ft bgs): 33.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 37.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAR6-0.5B 11:52			SP	Qal	Poorly Graded Sand (SP): Pale yellowish brown 10 YR (6/2), very loose - loose, dry. 5% fine sub-angular gravel to 1/2"-, 90% fine to medium sub-angular sand, 5% non-plastic fines. No odor or staining.				
2										
3										
4										
5								1.7	0.1	
6								8.9	0.1	
7										
8										
9	RSAR6-9B 12:04			SP	Qal	Gravel lens @ 9.0'				
10										
11										
12										
13						Gravel lens @ 13.0'				
14								18.1	0.1	
15								14.7	0.0	
16										
17										
18								0.9	0.0	
19										
20						Massive caliche 20.0' - 21.5'		0.1	0.0	
21										
22	RSAR6-25B 12:27			SM	Qal	Silty Sand (SM): Light yellowish brown 10 YR (6/4), loose, dry. 8% fine sub-angular gravel to 5/8", 62% fine to medium sub-angular sand, 30% non-plastic fines. No odor or staining.				
23										
24										
25										
26										
27										
28										
29								0.0	0.1	
30								7.4	0.0	
31								2.3	0.0	
32										
33				ML	UMCf (MCF)	Sandy Silt (ML): Light brown 5 YR (5/6), soft to medium-stiff, moist to wet. Trace fine sub-angular gravel to 5/8", 25% fine sub-angular sand, 75% non to moderate-plastic fines. No odor or staining.		0.9	0.0	
34						First water @ 33.0'	▽	3.1	0.1	
								0.7	0.0	

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# Boring Log

Project Number: 2027.01

Boring No.: RSAR6

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/14/09

Date Completed: 09/14/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAR6-37B, -37BMS, -37BMSD 12:49			ML	UMCf (MCl)	Total depth 37.0' @ 12:50, 9-14-09		2.7	0.1	
37								0.9	0.0	
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# Boring Log

Project Number: 2027.01		Boring No.: RSAS3	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/26/09	Date Completed: 08/26/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 44.0	Depth to Water (ft bgs): 28.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 44.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAS3-0.5B, RSAS3009-0.5B 06:56			SP	Qal	Poorly Graded Sand (SP): Pale yellowish brown 10 YR (6/2), loose to very loose, dry to damp. 8% fine sub-angular gravel to 1/2", 86% fine to coarse sub-angular to sub-rounded sand, 6% non-plastic fines. No odor or staining.		303	2.5	
2								1240	2.0	
3	RSAS3-10B 08:23			SP	Qal	Gravel lens 8.0' - 9'. Some caliche coatings on gravel clasts.		288	1.7	
4								8.7	1.0	
5								112	1.1	
6								1494	1.9	
7								3540	1.9	
8								2833	2.1	
9								2901	2.1	
10								2186	2.3	
11								122	2.1	
12								968	1.8	
13	RSAS3-25B 08:59			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), very loose, damp to moist. 5% fine sub-angular gravel to 3/4"+, 85% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.		1675	1.9	
14								115	2.1	
15								892	2.0	
16								491	1.8	
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# Boring Log

Project Number: 2027.01

Boring No.: RSAS3

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/26/09

Date Completed: 08/26/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill		
36	RSAS3-44B 09:45			SM	Qal	Silty Sand (SM): Light yellowish brown 10 YR (6/4), medium-dense to loose, damp to moist. 10% fine sub-angular to sub-rounded gravel to 3/4", 65% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining. @ 37.0'; Color change to light yellowish brown 10 YR (6/4)	55.1	1.0				
37												
38												
39												
40												
41							ML	UMCf (MCf)		Sandy Silt (ML): Light yellowish brown 10 YR (6/4), medium-dense, wet. 5% fine sub-angular gravel to 3/8"+, 65% fine to medium sand, 30% non-plastic fines. No odor or staining. Much caliche as grain coatings, and veinlets.	79.2	1.2
42												
43							ML	UMCf (MCf)		Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium-dense, wet. Trace fine sub-angular gravel to 5/8", 20% fine to medium sub-angular sand, 80% non to moderate-plastic fines. No odor or staining. Much caliche as grain coatings.	25.4	0.9
44										Total depth 44.0' @ 09:51, 8-26-09		
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# Boring Log

Project Number: 2027.01		Boring No.: RSAS4	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/21/09	Date Completed: 08/21/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 45.0	Depth to Water (ft bgs): 32.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 45.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAS4-0.5B 06:12			SM	Qal	Silty Sand with Gravel (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 15% fine sub-angular gravel to 3/4"+, 60% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining. Probable fill material.		2.9	1.1	
2										
3										
4										
5										
6										
7	RSAS4-10B 06:37			SM	Qal	Gravel lens @ 6.0' ; 10% - 12% fine sub-angular gravel to 1"-, 70% fine to medium sand, 18% non-plastic fines. Some caliche coatings on gravel clasts.		1.7	1.0	
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16										
17										
18										
19	RSAS4-30B 07:30			SM	Qal	Gravel @ 18.0'; 10/70/20.		2.5	1.0	
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31										
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# Boring Log

Project Number: 2027.01

Boring No.: RSAS4


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/21/09

Date Completed: 08/21/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36				ML	UMCf (MCF)	Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. 30% fine sub-angular sand, 70% moderate to non-plastic fines. No odor or staining.		31.3	0.4	
37								19.7	0.5	
38										
39										
40										
41							29.1	0.3		
42										
43										
44								19.3	0.7	
45	RSAS4-45B 08:00 RSAS4009-45B 08:00					Total depth 45.0' @ 08:00, 8-21-09				
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# Boring Log

Project Number: 2027.01		Boring No.: RSAS5	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 10/06/09	Date Completed: 10/06/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 36.0	Depth to Water (ft bgs): 32.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 36.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAS5-0.5B 11:07			SM	Qal	Silty Sand with Gravel (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 15% fine sub-angular gravel to 3/4"+, 60% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining. Probable fill material.				
2										
3										
4										
5										
6										
7	RSAS5-10B 11:17			SM	Qal	Gravel lens @ 6.0' ; 10% - 12% fine sub-angular gravel to 1"-, 70% fine to medium sand, 18% non-plastic fines. Some caliche coatings on gravel clasts..				
8										
9										
10										
11										
12										
13	RSAS5-25B 11:52			SM	Qal	Silty Sand (SM): Grayish orange 10 YR (7/4), loose, dry. Trace fine gravel to 3/4", 75% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining.				
14										
15										
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19				SM	Qal	Gravel @ 18.0'; 10/70/20.				
20										
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24										
25				ML	UMCf (MCf1)	Sandy Silt (ML): Moderate yellowish brown 10 YR (5/4), medium-stiff, damp to dry. Trace fine sub-angular gravel to 3/4"-, 40% fine sand, 60% non-plastic fines. No odor or staining.				
26										
27										
28										
29										
30										
31				ML	UMCf (MCf1)	Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. 30% fine sub-angular sand, 70% moderate to non-plastic fines. No odor or staining.				
32										
33										
34										

DRB-ENVIRO BORING 2027.01.GPJ 1/13/10

# Boring Log

Project Number: 2027.01

Boring No.: RSAS5

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 10/06/09

Date Completed: 10/06/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAS5-36B, RSAS5009-36B 12:08			ML		Total depth 36.0' @12:10, 10-06-09				
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# Boring Log

Project Number: 2027.01		Boring No.: RSAS6	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/01/09	Date Completed: 09/01/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 39.0	Depth to Water (ft bgs): 32.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 39.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAS6-0.5B 06:51			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), very loose - loose, dry. 10% fine sub-angular gravel to 1/2", 80% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.		11.7	0.2	
2										
3										
4										
5										
6										
7	RSAS6-10B 07:07			SM	Qal	Gravel lens @ 6.0' ; 15% fine sub-angular gravel to 1"-, 75% fine to medium sand, 10% non-plastic fines.	39.4	0.1		
8						Silty Sand (SM): Light yellowish brown 10 YR (6/4), loose, dry. 8% fine sub-angular gravel to 5/8", 62% fine to medium sub-angular sand, 30% non-plastic fines. No odor or staining.	17.1	0.1		
9										
10										
11										
12										
13										
14						Gravel 10.75' - 11.5'	0.9	0.0		
15										
16										
17										
18										
19										
20	Gravel lens @ 17.0', 8" thick.	2.9	0.1							
21										
22										
23										
24										
25										
26	RSAS6-25B 07:45			ML	UMCf (MCf)	Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. Trace fine sub-angular gravel to 5/8", 30% fine sub-angular sand, 70% non to moderate-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings.	▽	0.9	0.0	
27										
28										
29										
30										
31										
32	7.3	0.1								
33										
34										

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# Boring Log

Project Number: 2027.01

Boring No.: RSAS6


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/01/09

Date Completed: 09/01/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAS6-39B 08:14			ML	UMCf (MCf)	Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. Trace fine sub-angular gravel to 5/8", 30% fine sub-angular sand, 70% non to moderate-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings.		11.4	0.1	
37								0.9	0.0	
38										
39										
40						Total depth 39.0' @ 08:43, 9-1-09		3.7	0.1	
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
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61										
62										
63										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: RSAS7	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/21/09	Date Completed: 08/21/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 42.0	Depth to Water (ft bgs): 31.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 42.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAS7-0.5B, RSAS7009-0.5B 09:24			SP	Qal	Poorly Graded Sand (SP): Very pale orange 10 YR (8/2), very loose to loose, dry. 2% fine sub-angular gravel to 3/8"+, 90% fine sand, 8% non-plastic fines. No odor or staining. Locally with Poorly Graded Sand with Silt (SP-SM) interbeds to 6", and also intervals of coarser sands (fine to medium) with up to 5% fine gravel.		204	1.4	
2										
3										
4										
5										
6										
7										
8										
9										
10										
11	RSAS7-10B 09:40			SP	Qal	Gravelly lens 12.0' - 12.5'.		81.3	0.4	
12										
13										
14										
15										
16										
17										
18										
19										
20										
21	RSAS7-250B 10:05			SP	Qal	Gravelly lens 20.0' - 21.0'		107	1.1	
22										
23										
24										
25										
26										
27										
28										
29										
30										
31				SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Very pale orange 10YR (8/2), loose, dry to damp. Trace fine sub-angular gravel to 1/2", 90% fine to medium sub-angular sand, 10% non-plastic fines. No odor. Massive caliche 23.5' - 25.0'.		124	0.9	
32										
33										
34										
				ML	UMCf (MCF)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), stiff to medium stiff, wet. 10% fine sub-angular sand, 90% non-plastic fines. No odor or staining.		137	1.1	

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# Boring Log

Project Number: 2027.01

**Boring No.: RSAS7**


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/21/09

Date Completed: 08/21/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAS7-42B 10:44			ML	UMCf (MCFI)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), stiff to medium stiff, wet. 10% fine sub-angular sand, 90% non-plastic fines. No odor or staining.		113	0.7	
37								78.6	0.5	
38										
39										
40										
41							36.9	0.7		
42										
43						Total depth 42.0' @ 11:06, 8-21-09				
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54										
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71										
72										
73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: RSAT3	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/26/09	Date Completed: 08/26/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 53.0	Depth to Water (ft bgs): 39.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 53.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill				
1	RSAT3-10B, -10BMS, -10BMSD 11:59	[Dotted Pattern]	[Dotted Pattern]	SP	Qal	Poorly Graded Sand (SP): Pale yellowish brown 10 YR (6/2), very loose to loose, dry to damp. 5% fine sub-angular to angular gravel to 1/2", 85% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.				[Diagonal Hatching]				
2														
3														
4														
5														
6													8.4	0.0
7														
8													90.9	0.4
9														
10													135	0.4
11						Gravel 10.5' - 11.5'; 10/70/20.								
12														
13														
14							54.9	0.0						
15														
16							123	0.7						
17														
18						Gravel @ 18.0'; 8" lens.								
19							168	0.9						
20	RSAT3-25B 12:30	[Dotted Pattern]	[Dotted Pattern]	SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Very pale orange 10 YR (8/2), very-loose to loose, dry to damp. 10% fine sub-angular gravel to 1/2", 80% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.				[Diagonal Hatching]				
21														
22													179	0.8
23														
24													143	0.7
25														
26													109	0.6
27														
28													79.4	0.8
29												Perched water @ 29.0'		
30							103	0.6						
31														
32				SM	UMCf (MCf)	Silty Sand (SM): Light yellowish brown 10 YR (6/4), medium-dense to loose, damp to wet. 10% fine sub-angular to angular gravel to 3/4", 40% fine to coarse sub-angular to angular sand, 25% non-plastic fines. No odor or staining.								
33							32.6	0.0						
34							98.3	0.6						

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# Boring Log

Project Number: 2027.01

Boring No.: **RSAT3**

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/26/09

Date Completed: 08/26/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill							
36	RSAT3-40B 12:55			SM	UMCf (MCf)	Silty Sand (SM): Light yellowish brown 10 YR (6/4), medium-dense to loose, damp to wet. 10% fine sub-angular to angular gravel to 3/4", 40% fine to coarse sub-angular to angular sand, 25% non-plastic fines. No odor or staining.	▽	119	0.0								
37								169	0.7								
38																	
39																	
40								First water @ 39.5'									
41								RSAT3-53B 14:07				ML	UMCf (MCf)	Sandy Silt (ML): Light brown 5 YR (6/4), medium-stiff, wet. Trace fine sub-angular to sub-rounded gravel to 5/8", 15% fine sub-angular sand, 85% moderate to non-plastic fines. No odor or staining. Much caliche as nodules and veinlets.		2.9	0.0
42																0.9	0.0
43																3.2	0.0
44																21.0	0.0
45																24.1	0.0
46	24.3	0.0															
47																	
48																	
49																	
50																	
51																	
52																	
53																	
54																	
55																	
56																	
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64																	
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66																	
67																	
68																	
69																	
70																	
71																	
72																	
73																	
74																	

DRB-ENVIRO BORING: 2027.01.GPJ 1/13/10

# Boring Log

Project Number: 2027.01		Boring No.: RSAT4	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/21/09	Date Completed: 09/21/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 53.0	Depth to Water (ft bgs): 32.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 53.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAT4-0.5B 07:38			Fill		Fill Material: Silty Sand with Gravel (SM), light brown 5 YR (6/4), very loose to loose, dry. 15% fine sub-angular to angular gravel to 1", 75% fine to coarse sub-angular to sub-rounded sand, 10% non-plastic fines. No odor or staining.		0.2	0.0	
2										
3										
4										
5										
6										
7	RSAT4-10B 07:59			SM	Qal	Silty Sand (SM): Dark yellowish orange 10 YR (6/6), very loose to loose, dry. 10% fine sub-angular to angular gravel to 1/2", 65% fine to coarse sub-angular to sub-rounded sand (65/25/10), 25% non-plastic fines. No odor or staining.  @10.0', coarsening to 15% gravel to 1".  Finning to 5% gravel @ 12.0'		0.7	0.0	
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19	RSAT4-25B 08:24			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Dark yellowish orange 10 YR (6/6), very-loose to loose, dry. 5% fine sub-angular gravel to 3/8", 85% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.		1.8	0.0	
20										
21										
22										
23										
24										
25										
26										
27				SM	Qal	Silty Sand (SM): Light yellowish brown 10 YR (6/4), medium-dense to loose, damp to wet. 10% fine sub-angular to angular gravel to 1/2", 65% fine to medium sub-angular sand, 30% non-plastic fines. No odor or staining. Much caliche as nodules and grain coatings.		1.2	0.0	
28										
29										
30										
31										
32										
33										
34										
				ML	UMCf (MCf)	First water @ 32.5'		0.8	0.0	

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# Boring Log

Project Number: 2027.01

Boring No.: RSAT4

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/21/09

Date Completed: 09/21/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAT4-40B 09:11			ML	UMCf (MCFI)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), dense to medium-dense, wet. Trace fine sub-angular to sub-rounded gravel to 3/8"+, 25% fine sub-angular sand, 75% non-plastic fines. No odor or staining.		6.8	0.0	
37										
38										
39										
40										
41										
42										
43										
44										
45										
46	RSAT4-53B 09:55			MH	UMCf (MCFI)	46.0' - 46.5', 6" seam of Sandy Silt (ML): trace gravel, 25% fine sand, 75% non-plastic fines.		2.8	0.0	
47										
48										
49										
50										
51										
52										
53										
54										
55										
56										
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										

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# Boring Log

Project Number: 2027.01		Boring No.: RSAT5	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/20/09	Date Completed: 08/20/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 51.0	Depth to Water (ft bgs): 46.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 51.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAT5-0.5B 11:07			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 5% fine sub-angular gravel to 1/2"+, 70% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining.		5.9	1.8	
2										
3										
4										
5										
6										
7										
8										
9										
10	RSAT5-10B 11:25			SP	Qal	Poorly Graded Sand (SP): Very pale orange 10 YR (8/2), very loose to loose, dry. 2% fine sub-angular gravel to 3/8"+, 90% fine sand, 8% non-plastic fines. No odor or staining. Locally with interbeds of Poorly Graded Sand with Silt (SP-SM) to 6", and intervals of fine to medium sands with up to 5% fine gravel.		199	0.0	
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21	RSAT5-25B 11:54			SM	Qal	Silty Sand (SM): Very pale orange 10 YR (8/2), very loose, dry. 5% fine sub-angular gravel to 1", 70% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining.		84.6	0.9	
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
				ML	UMCf (MCFI)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), stiff to medium stiff, wet. 10% fine sub-angular sand, 90% non-plastic fines. No odor or staining.		13.7	0.2	
								152	0.5	

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# Boring Log

Project Number: 2027.01

Boring No.: **RSAT5**


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/20/09

Date Completed: 08/20/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAT5-40B 12:30			ML	UMCf (MCF)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), stiff to medium stiff, wet. 10% fine sub-angular sand, 90% non-plastic fines. No odor or staining.  Coarsening to 15% fine to very fine sand @ 34.0', 35% fine sand @ 35.0'.  Fining to 30% fine sand, 70% non-plastic fines @ 42.0'. No gravel.	▽	64.8	0.5	
37								89.8	0.8	
38								21.3	0.0	
39								69.1	0.9	
40								31.4	0.3	
41								152	0.5	
42								105	0.8	
43								73.6	0.3	
44										
45										
46	RSAT5-51B 13:14				Total depth 51.0' @ 13:14, 8-20-09					
47										
48										
49										
50										
51										
52										
53										
54										
55										
56										
57										
58										
59										
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72										
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74										

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# Boring Log

Project Number: 2027.01		Boring No.: <b>RSAT6</b>	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear		Date Started: 08/27/09	Date Completed: 08/27/09
Drilling Method: Rotary Sonic		Total Depth (ft bgs): 49.0	Depth to Water (ft bgs): 29.5
Borehole Dia. (in): 6.0		Surface Elevation (ft MSL):	
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 49.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAT6-10B 11:26			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 5% fine sub-angular gravel to 1/2"+, 70% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining.				
2										
3										
4										
5										
6										
7										
8										
9										
10										
11	RSAT6-30B 14:23			SP	Qal	Poorly Graded Sand (SP): Very pale orange 10 YR (8/2), very loose to loose, dry. 2% fine sub-angular gravel to 3/8"+, 90% fine sand, 8% non-plastic fines. No odor or staining. Locally with Poorly graded sand with silt (SP-SM) interbeds to 6", and also intervals of coarser sands (fine to medium) with up to 5% fine gravel.  Gravelly @ 19.0', massive caliche @ 20'.  Massive caliche 26.5' - 29.5'.  Bit sanded in @ 30'; 12:15 to 14:20 spent recovering tools and re-drilling interval.				
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30	ML	UMCf (MCf)				Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), stiff to medium stiff, wet. 10% fine sub-angular sand, 90% non-plastic fines. No odor or staining. Coarsening to 15% fine to very fine sand @ 34.0', 35% fine sand @ 35.0'.				
31										
32										
33										
34										

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# Boring Log

Project Number: 2027.01

Boring No.: RSAT6


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/27/09

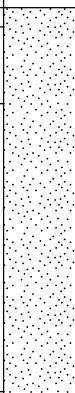

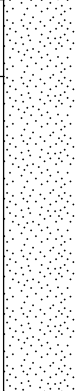





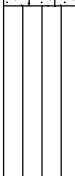

Date Completed: 08/27/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAT6-49B 15:02			ML	UMCf (MCF1)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), stiff to medium stiff, wet. 10% fine sub-angular sand, 90% non-plastic fines. No odor or staining.	19.8	0.0		
37						4.7	0.0			
38										
39						16.2	0.0			
40										
41										
42						7.1	0.0			
43										
44						9.3	0.0			
45										
46	9.9	0.0								
47										
48	11.7	0.1								
49										
50						Total depth 49.0' @ 15:05, 8-27-09	21.3	0.0		
51										
52										
53										
54										
55										
56										
57										
58										
59										
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74										

# Boring Log

Project Number: 2027.01		Boring No.: RSAT7	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/22/09	Date Completed: 09/22/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 44.0	Depth to Water (ft bgs): 33.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 44.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill									
1	RSAT7-0.5B 11:09			SP	Qal	Poorly Graded Sand (SP): Very pale orange 10 YR (8/2), very loose to loose, dry. 2% fine sub-angular gravel to 3/8"+, 90% fine sand, 8% non-plastic fines. No odor or staining. Locally with Poorly graded sand with silt (SP-SM) interbeds to 6", and also intervals of coarser sands (fine to medium) with up to 5% fine gravel.	1.1	0.0											
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10										RSAT7-10B 11:29			SP	Qal	Gravelly lens 12.0' - 13.0'.	8.9	0.0		
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20	RSAT7-25B 11:56			SP-SM		Poorly Graded Sand with Silt (SP-SM): Very pale orange 10YR (8/2), loose, dry to damp. Trace fine sub-angular gravel to 1/2", 90% fine to medium sub-angular sand, 10% non-plastic fines. No odor. Massive caliche 23.5' - 25.0'.	17.5	0.0											
21																			
22																			
23																			
24																			
25																			
26																			
27																			
28																			
29																			
30				SM	Qal	Silty Sand (SM): Very pale orange 10 YR (8/2), very loose, dry. 5% fine sub-angular gravel to 1", 70% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining.	18.4	0.0											
31																			
32																			
33																			
34																			
31													ML	UMCf (MCF)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), stiff to medium stiff, wet. 10% fine sub-angular sand, 90% non-plastic fines. No odor or staining.	9.0	0.0		
32																			
33																▽	0.0	0.0	
34																0.3	0.0		

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# Boring Log

Project Number: 2027.01

Boring No.: RSAT7


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/22/09

Date Completed: 09/22/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAT7-44B, -44BMS, -44BMSD 12:45			ML	UMCf (Mcf)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), stiff to medium stiff, wet. 10% fine sub-angular sand, 90% non-plastic fines. No odor or staining.		7.0	0.1	
37								0.0	0.0	
38										
39										
40										
41										
42										
43										
44										
45										
46						Total depth 44.0' @ 12:45, 9-22-09				
47										
48										
49										
50										
51										
52										
53										
54										
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72										
73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: RSAT8	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/22/09	Date Completed: 09/22/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 44.0	Depth to Water (ft bgs): 32.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 44.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAT8-0.5B 07:14			Fill	Qal	Fill Material: silty sand with gravel (SM), light brown 5 YR (6/4), loose to very loose, dry to damp. 15% fine sub-angular gravel to 1", 70% fine to coarse sub-angular to sub-rounded sand (35/40/25), 15% non-plastic fines. No odor or staining.		0.2	0.0	
2										
3										
4										
5										
6										
7										
8										
9										
10	RSAT8-10B 07:31			SM	Qal	Blocky gravel to 1" @ 10.0'		7.8	0.0	
11		Silty Sand (SM): Dark yellowish orange 10 YR (6/6), loose, dry to damp. 10% fine sub-angular to sub-rounded gravel to 3/4", 70% fine to medium sub-angular sand, 5% non-plastic fines. No odor or staining.								
12										
13										
14										
15										
16										
17										
18										
19										
20										
21	RSAT8-25B, RSAT8009-25B 07:55			ML	UMCf (MCf1)	Gravel lens 20.0' - 21.0'.		12.9	0.0	
22		Sandy Silt (ML): Light brown 5 YR (5/6), soft, damp to moist, wet below 32.5'. 20% fine sub-angular sand, 80% non to moderate-plastic fines. No odor or staining. Much caliche as grain coatings, and veinlets.								
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

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# Boring Log

Project Number: 2027.01

Boring No.: RSAT8

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/22/09

Date Completed: 09/22/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	RSAT8-44B 08:53			ML	UMCf (MCfl)	@ 35.5', fining to 0/15/85.		1.7	0.0	
37				MH	UMCf (MCfl)	Elastic Silt (MH): Dark yellowish orange 10 YR (6/6), medium-dense, wet. 20% fine to medium sub-angular sand, 80% moderate-plastic fines. No odor or staining. Trace caliche as grain coatings.		3.9	0.0	
38								0.4	0.0	
39								0.9	0.0	
40								1.7	0.0	
41	Total depth 44.0' @ 08:53, 9-22-09									
42										
43										
44										
45										
46										
47										
48										
49										
50										
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72										
73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: RSAU4	
Project Name: Tronox Phase B Investigation		Logged by: Brendan Mulholland	
Drilling Contractor: Boart Longyear		Date Started: 07/29/09	Date Completed: 07/29/09
Drilling Method: Rotary Sonic		Total Depth (ft bgs): 56.0	Depth to Water (ft bgs):
Borehole Dia. (in): 8.0		Surface Elevation (ft MSL):	
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 56.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1				Conc		Concrete Slab, 8" thick, un-reinforced.				
2						Silty Sand (SM): Pale brown 10 YR (6/3), moist. 10% fine to coarse gravel, 70% medium to coarse sand, 20% non-plastic fines.		0.2		
3										
4								0.1		
5								0.0		
6								0.0		
7								0.0		
8								0.0		
9								0.0		
10						@ 10.0' <10% coarse gravel.				
11								0.0		
12						@ 12.0' Color change: Pale brown 10 YR (6/3) to light yellowish brown 10 YR (6/4).		0.0		
13								0.0		
14								0.0		
15								0.0		
16								0.0		
17				SM	Qal			0.0		
18								0.0		
19								0.0		
20								0.0		
21								0.0		
22								0.0		
23								0.0		
24								0.0		
25								0.0		
26						26.0' - 30.0' Caliche zone: White 10 YR (8/1) to light gray 10 YR (7/1), fine to coarse gravel sized caliche nodules, moderate to strong cementation, effervescence in dilute HCl.		0.0		
27								0.0		
28								0.0		
29								0.0		
30								0.0		
31								0.0		
32								0.0		
33								0.0		
34				ML	UMCf (MCF)			0.1		

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# Boring Log

Project Number: 2027.01

Boring No.: RSAU4



Project Name: Tronox Phase B Investigation

Logged by: Brendan Mulholland

Drilling Contractor: Boart Longyear

Date Started: 07/29/09

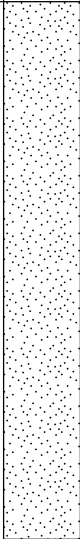

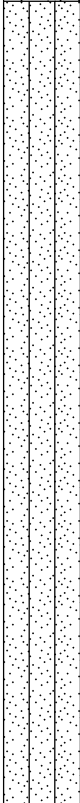

Date Completed: 07/29/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36						Silt (ML): Yellowish brown 10 YR (5/6), moist. Trace fine gravel, 5% fine sand, 95% non-plastic fines.		0.0		
37										
38										
39										
40						@ 39.0' Trace of caliche nodules and <5% coarse gravel.				
41										
42										
43								0.0		
44				ML	UMCf (MCfl)	@ 43.0' Color change to brownish yellow 10 YR (6/6).				
45										
46								0.1		
47										
48										
49										
50										
51								0.1		
52										
53										
54				SM	UMCf (MCfl)	Silty Sand (SM): Brownish yellow 10 YR (6/4), moist to wet. 5% coarse gravel, 75% coarse sand, 20% non-plastic fines.		0.0		
55										
56										
57						Total depth 56.0' @ 10:45, 7-29-09				
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										

# Boring Log

Project Number: 2027.01		<b>Boring No.: RSAU5</b>	
Project Name: Tronox Phase B Investigation		Logged by: Brendan Mulholland	
Drilling Contractor: Boart Longyear		Date Started: 08/05/09	Date Completed: 08/05/09
Drilling Method: Rotary Sonic		Total Depth (ft bgs): 55.0	Depth to Water (ft bgs):
Borehole Dia. (in): 8.0		Surface Elevation (ft MSL):	

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 55.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1				SP	Qal	Poorly Graded Sand (SP): Yellowish brown 10 YR (5/6), moist. 15% fine to coarse gravel, 85% fine to medium sand.				
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15				SM	Qal	Silty Sand (SM): Yellowish brown 10 YR (5/6), moist. 5% coarse gravel, 70% coarse sand, 25% non-plastic fines.				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

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# Boring Log

Project Number: 2027.01

Boring No.: RSAU5

Project Name: Tronox Phase B Investigation

Logged by: Brendan Mulholland

Drilling Contractor: Boart Longyear

Date Started: 08/05/09

Date Completed: 08/05/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36				SM	Qal	Silty Sand (SM): Yellowish brown 10 YR (5/6), moist. 5% coarse gravel, 70% coarse sand, 25% non-plastic fines.				
37										
38										
39										
40										
41										
42				SC	UMCf (MCf)	Clayey Sand (SC): Yellowish brown 10 YR (4/4), moist. 5% fine gravel, 80% fine sand, 15% high-plastic fines.				
43										
44										
45										
46										
47										
48										
49				ML	UMCf (MCf)	Silt (ML): Dark yellowish brown 10 YR (5/4), damp to moist. 5% fine sand, 95% non-plastic fines.				
50										
51										
52										
53										
54										
55										
56						Total depth 55.0' @ 13:00, 8-5-09				
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										

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# Boring Log

Project Number: 2027.01		Boring No.: RSAU6	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/11/09	Date Completed: 08/11/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 53.0	Depth to Water (ft bgs): 46.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 53.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAU6-0.5B, -0.5BMS, -0.5BMSD 06:50			SM	Qal	Silty Sand (SM): Yellowish brown 10 YR (5/6), loose to very-loose, dry. 10% coarse angular to sub-angular gravel to 1"+, 65% coarse sand, 25% non-plastic fines. No odor or staining.	0.3	0.0		
2										
3										
4										
5										
6										
7										
8										
9										
10										
11	RSAU6-10B 07:14			SM	Qal	Silty Sand (SM): Yellowish brown 10 YR (5/6), loose to very-loose, dry. 10% coarse angular to sub-angular gravel to 1"+, 65% coarse sand, 25% non-plastic fines. No odor or staining.	0.2	0.0		
12										
13										
14										
15										
16										
17										
18										
19										
20										
21	RSAU6-25B 07:37			SM	Qal	Silty Sand (SM): Yellowish brown 10 YR (5/6), loose to very-loose, dry. 10% coarse angular to sub-angular gravel to 1"+, 65% coarse sand, 25% non-plastic fines. No odor or staining.	0.3	0.0		
22										
23										
24										
25										
26										
27										
28										
29										
30										
31				SM	Qal	Silty Sand (SM): Dark yellowish orange 10 YR (6/6), loose, dry. 5% fine sub-angular gravel to 1/2", 70% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining.	0.2	0.0		
32										
33										
34										
				ML	UMCf (MCF)		0.2	0.0		

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# Boring Log

Project Number: 2027.01

Boring No.: **RSAU6**

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/11/09

Date Completed: 08/11/09

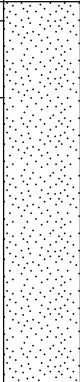

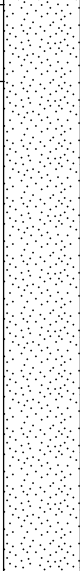

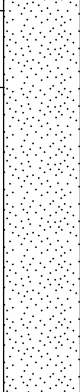

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill		
36	RSAU6-40B 08:29			ML	UMCf (MCF)	Sandy Silt (ML): Light brown 5 YR (5/6), soft, damp. 20% fine sub-angular sand, 80% non-plastic fines. No odor or staining. Some caliche as grain coatings and nodules to 1/8".						
37												
38											0.1	0.0
39												
40												
41												
42												
43												
44												
45							SM	UMCf (MCF)	Silty Sand (SM): Light yellowish brown 10 YR (6/4), medium-dense to loose, damp to wet. 10% fine sub-angular to sub-rounded gravel to 1/2", 60% fine to medium sub-angular sand, 30% non-plastic fines. Much caliche as grain coatings.		▽	0.0
46												
47												
48												
49								0.1	0.0			
50												
51												
52												
53	RSAU6-53B 09:10							0.1	0.0			
54								Total depth 53.0' @ 09:10, 8-11-09				
55												
56												
57												
58												
59												
60												
61												
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63												
64												
65												
66												
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68												
69												
70												
71												
72												
73												
74												

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# Boring Log

Project Number: 2027.01		Boring No.: RSAU7	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/03/09	Date Completed: 09/03/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 54.0	Depth to Water (ft bgs): 49.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

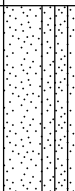

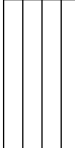
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 54.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	RSAU7-0.5B RSAU7009-0.5B 06:42			SP	Qal	Poorly Graded Sand (SP): Dark yellowish orange 10 YR (6/6), loose, dry. 10% fine sub-angular gravel to 1/2", 85% fine to medium sub-angular sand, 5% non-plastic fines. No odor or staining.		0.1	0.4	
2										
3										
4	RSAU7-10B 07:00			SP	Qal			2.0	0.4	
5										
6										
7										
8										
9										
10	RSAU7-25B 07:30			SP	Qal			0.8	0.6	
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
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30										
31										
32										
33										
34										

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# Boring Log

<b>Project Number:</b> 2027.01	<b>Boring No.:</b> RSAU7
<b>Project Name:</b> Tronox Phase B Investigation	Logged by: Dana R. Brown
<b>Drilling Contractor:</b> Boart Longyear	Date Started: 09/03/09      Date Completed: 09/03/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill					
36	RSAU7-40B 08:15			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Dark yellowish orange 10 YR (6/6), very-loose to loose, dry. 5% fine sub-angular gravel to 5/8", 85% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.		13.0	0.4						
37								21.1	0.3						
38															
39															
40							SM	UMCf (MCfl)	Silty Sand (SM): Light yellowish brown 10 YR (6/4), medium-dense to loose, damp to wet. 10% fine sub-angular to sub-rounded gravel to 1/2", 60% fine to medium sub-angular sand, 30% non-plastic fines. Much caliche as grain coatings.			18.5	0.3		
41															
42															
43															
44															
45															
46							54.9	0.1							
47															
48															
49						First water @ 49.0'	▽	78.1	0.6						
50				ML	UMCf (MCfl)	Sandy Silt (ML): Light brown 5 YR (5/6), soft, damp. 20% fine sub-angular sand, 80% non-plastic fines. No odor or staining. Some caliche as grain coatings and nodules to 1/8".		10.8	0.2						
51															
52															
53															
54	RSAU7-54B 08:59					Total depth 54.0' @ 09:02, 9-3-09		34.2	0.4						
55															
56															
57															
58															
59															
60															
61															
62															
63															
64															
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67															
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70															
71															
72															
73															
74															

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# Boring Log

Project Number: 2027.01		Boring No.: SA111	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 10/05/09	Date Completed: 10/05/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 39.0	Depth to Water (ft bgs): 30.8	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 39.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill										
1	SA111-1.5B 07:15			FILL	Recent	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 2% - 10% fine angular to sub-angular gravel to 1", 70% fine to medium sub-angular sand, 20% non-plastic fines. No odor or staining.		0.1	0.4											
2																				
3																				
4	SA111-10B 07:26			SP	Qal	Poorly Graded Sand (SP): Very pale orange 10 YR (8/2), very loose, dry. 5% fine sub-angular gravel to 1/2"+, 90% fine to medium sub-angular sand, 5% non-plastic fines. No odor or staining.		0.1	0.4											
5																				
6																				
7																				
8																				
9																				
10	SA111-10B 07:26			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 2% - 10% fine sub-angular gravel, 70% fine sand, 20% non-plastic fines. Gravelly lens 11' - 12'.		0.0	6.0											
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				
19																				
20	SA111-25B, BMS, BMSD 07:57			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), loose, dry to damp. 2% fine sub-angular gravel, 70% fine sand, 28% non-plastic fines. Some caliche at upper contact.		0.0	0.2											
21																				
22																				
23																				
24																				
25																				
26	SA111-25B, BMS, BMSD 07:57			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), loose, dry to damp. 2% fine sub-angular gravel, 70% fine sand, 28% non-plastic fines. Some caliche at upper contact.		0.0	0.7											
27																				
28																				
29																				
30																				
31																				
32											ML			UMCf (MCf1)	Sandy Silt (ML): Moderate brown 5 YR (4/4), medium dense to loose locally, damp to wet. Trace fine gravel/coarse sand to 3/8"+, 30% fine sand, 70% non to moderate-plastic fines.		▽	0.0	2.7	
33																				
34																				

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# Boring Log

Project Number: 2027.01

Boring No.: SA111


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 10/05/09

Date Completed: 10/05/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA111-39B 08:49			ML	UMCf (Mcf)	Sandy Silt (ML): Moderate brown 5 YR (4/4), medium dense to loose locally, damp to wet. Trace fine gravel/coarse sand to 3/8"+, 30% fine sand, 70% non to moderate-plastic fines.		0.1	2.3	
37								0.0	9.0	
38										
39										
40						Total depth 39.0' @ 08:50, 10-5-09				
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54										
55										
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57										
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61										
62										
63										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: SA115	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/11/09	Date Completed: 08/11/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 51.0	Depth to Water (ft bgs): 44.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 51.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA115-0.5B 10:54			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 5% fine sub-angular gravel to 1"-, 75% medium sub-angular sand, 20% non-plastic fines. Vague flinty odor, no staining. Rare caliche as grain coatings.		0.9	0.8	
2										
3										
4										
5										
6										
7										
8						4" caliche bed @ 7.5'.				
9										
10	SA115-10B 11:07			SM	Qal	2/78/20		0.6	0.0	
11										
12										
13										
14										
15										
16										
17								0.1	0.0	
18										
19										
20								0.0	0.0	
21						Coarsening to 10% gravel, 15% non-plastic fines @ 20.0'. Caliche as nodules and veinlets.				
22										
23								0.2	0.0	
24										
25	SA115-25B 11:35			ML	UMCf (Mcf)	Massive and bedded caliche 26.0' - 28.0'. Some euhedral gypsum crystals in fine sandy matrix.		0.0	0.0	
26										
27										
28										
29						Sandy Silt (ML): Pale brown 5 YR (5/2), medium-stiff to stiff, dry. Trace fine sub-angular gravel to 1/2"-, 35% fine sand, 65% non-plastic fines. Most gravel clasts have caliche coatings, some caliche nodules to 3/8".				
30										
31										
32										
33										
34								0.1	0.0	

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# Boring Log

Project Number: 2027.01

Boring No.: SA115

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/11/09

Date Completed: 08/11/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA115-40B 12:25			ML	UMCf (MCf)	Sandy Silt (ML): Pale brown 5 YR (5/2), medium-stiff to stiff, dry. Trace fine sub-angular gravel to 1/2", 35% fine sand, 65% non-plastic fines. Most gravel clasts have caliche coatings, some caliche nodules to 3/8".	▽	0.2	0.0	
37										
38										
39										
40										
41										
42										
43										
44										
45										
46	SA115-51B 12:55			SM	UMCf (MCf)	Silty Sand (SM): Dark yellowish brown 10 YR (4/2), medium-dense to dense, dry to damp. 2% fine sub-angular gravel to 3/8", 78% medium sand, 20% non-plastic fines. Sand consists of 10% coarse sub-angular, 60% medium sub-angular, and 30% fine sub-angular and frosted grains. Locally interbedded with Silty Gravelly Sand (SM) 15% fine sub-angular to sub-rounden gravel to 3/8", 65% fine to coarse sub-angular sand, 20% non-plastic fines.	▽	0.2	0.0	
47										
48										
49										
50										
51										
52										
53										
54										
55										
56										
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										
Total depth 51.0' @ 12:45, 8-11-09							0.3	10.4		
							0.2	0.0		

# Boring Log

Project Number: 2027.01		Boring No.: SA116	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/02/09	Date Completed: 09/02/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 50.0	Depth to Water (ft bgs): 34.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 50.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA116-0.5B 11:00			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 5% fine sub-angular gravel to 1"-, 75% medium sub-angular sand, 20% non-plastic fines. Vague flinty odor, no staining. Rare caliche as grain coatings.  Gravelly @ 5.0'		27.7	0.6	
2										
3										
4										
5										
6	SA116-10B 11:32			SM	Qal	Gravelly with caliche @ 10.0'		13.6	0.1	
7										
8										
9										
10										
11										
12										
13										
14										
15										
16				SP	Qal	Poorly Graded Sand (SP): Pale yellowish brown 10 YR (6/2), very loose, dry. 95% fine sand, 5% non-plastic fines. No odor or staining.		10.0	0.2	
17										
18										
19										
20										
21										
22	SA116-30B 12:31			ML	UMCf (MCF1)	Sandy Silt (ML): Pale brown 5 YR (5/2), medium-stiff to stiff, dry. Trace fine sub-angular gravel to 1/2"-, 15% fine sand, 85% non-plastic fines. Most gravel clasts have caliche coatings, some caliche nodules to 3/8".  Massive caliche 27.5' - 29.5'		9.4	0.0	
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										

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# Boring Log

Project Number: 2027.01

Boring No.: SA116


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/02/09

Date Completed: 09/02/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill				
36	SA116-50B, BMS, BMSD 13:09			ML	UMCf (MCf1)	Sandy Silt (ML): Pale brown 5 YR (5/2), medium-stiff to stiff, dry. Trace fine sub-angular gravel to 1/2"-, 15% fine sand, 85% non-plastic fines. Most gravel clasts have caliche coatings, some caliche nodules to 3/8".		18.1	0.0					
37								17.9	0.0					
38														
39														
40														
41														
42								ML	UMCf (MCf1)		Silt with Sand (ML): Light brown 5 YR (5/6), medium-stiff to stiff, wet. Trace fine sub-angular gravel to 3/8"+, 25% fine sand, 75% non-plastic fines. Most gravel clasts have caliche coatings, some caliche nodules to 3/8"-.		19.0	0.0
43													21.6	0.0
44														
45														
46														
47														
48														
49														
50														
51														
52						Total depth 50.0' @ 13:10, 9-2-09								
53														
54														
55														
56														
57														
58														
59														
60														
61														
62														
63														
64														
65														
66														
67														
68														
69														
70														
71														
72														
73														
74														

# Boring Log

Project Number: 2027.01		Boring No.: SA118	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/02/09	Date Completed: 09/02/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 51.0	Depth to Water (ft bgs): 34.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 51.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill		
1	SA118-0.5B 06:45					Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose to loose, dry. 7% fine sub-angular gravel to 1"-, 70% fine to medium sub-angular sand, 23% non-plastic fines. No odor or staining.						
2												
3												
4								1.2	4.8			
5												
6	SA118-10B 07:05					Finng downward to Silty Sand (SM): 2% fine sub-angular gravel, 75% fine to medium sand, 25% non-plastic fines. Gravel lens @ 6.0' ; 10% - 12% fine sub-angular gravel to 1"-, 70% fine to medium sand, 18% non-plastic fines. Some caliche coatings on gravel clasts.						
7												
8								0.6	3.8			
9												
10								0.4	2.3			
11												
12								0.0	0.6			
13					SM		Qal	Gravel @ 12.0' - 12.8'; sub-angular gravel to 1".				
14								0.5	0.9			
15												
16						0.0	0.3					
17												
18												
19						Gravel @ 18.5'; <0.5'.	0.2	10.2				
20												
21							0.2	0.8				
22												
23							0.8	4.8				
24												
25	SA118-25B 07:30					Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.						
26												
27								0.5	6.2			
28												
29								0.5	6.3			
30												
31								0.7	5.6			
32					ML		UMCf (MCF)	Color change @ 31.0'; Silt (ML) Dark yellowish orange 10 YR (6/6), medium stiff, damp. 15% fine sand, 85% non-plastic fines. Some caliche as grain coatings and fine nodules.				
33								0.4	1.0			
34						Color change and coarsening @ 33.0'; Sandy Silt (ML): Grayish orange 10 YR (7/4), medium stiff to soft, damp to wet. 30% fine sand, 70% moderate to non-plastic fines. No odor or staining.	▽	0.5	2.9			

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# Boring Log

Project Number: 2027.01

Boring No.: SA118


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/02/09

Date Completed: 09/02/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA118-40B 08:18			ML	UMCf (MCf1)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.	0.7	4.2		
37						0.4	14.8			
38										
39										
40										
41						Some caliche as grain coatings and fine veinlets 40.5' - 44.0'.				
42										
43						0.6	9.0			
44										
45										
46										
47										
48										
49										
50										
51	SA118-51B 08:49					Color change and fining @ 45.0': Silt (ML) light brown 5 YR (5/6), 20% fine sand, 80% non-plastic fines. No odor or staining.	0.6	8.3		
52						0.2	11.7			
53										
54										
55										
56										
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										
						Massive caliche @ 51". Total depth 51.0' @ 08:30, 9-2-09	0.3	10.4		

# Boring Log

Project Number: 2027.01		Boring No.: SA119	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear		Date Started: 08/10/09	Date Completed: 08/10/09
Drilling Method: Rotary Sonic		Total Depth (ft bgs): 48.0	Depth to Water (ft bgs): 34.0
Borehole Dia. (in): 6.0		Surface Elevation (ft MSL):	

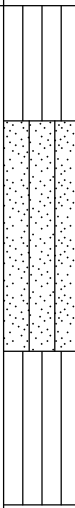

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 48.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill									
1	SA119-0.5B 10:14			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose to loose, dry. 8% fine sub-angular gravel to 3/4", 72% fine to medium sub-angular sand, 20% non-plastic fines. No odor or staining.		0.1	0.0										
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10		SA119-10B 10:41											SM	Qal	Gravelly @ 12.0'		0.0	0.0	
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20	SA119-30B 11:30			SM	Qal	Gravelly lens 17.0' - 18.0'		0.1	0.0										
21																			
22																			
23																			
24																			
25																			
26																			
27																			
28																			
29																			
30	SA119-30B 11:30			SM	Qal	Silty Sand (SM): Dark yellowish orange 10 YR (6/6), medium dense, dry. 5% fine sub-angular gravel to 1/2", 75% fine sand, 20% non-plastic fines. No odor or staining.		0.4	0.0										
31																			
32																			
33																			
34																			
34																▽			

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# Boring Log

Project Number: 2027.01	<b>Boring No.: SA119</b>
Project Name: Tronox Phase B Investigation	Logged by: Dana R. Brown
Drilling Contractor: Boart Longyear	Date Started: 08/10/09      Date Completed: 08/10/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill				
36	SA119-48B 12:05			ML	UMCf (MCf)	Sandy Silt (ML): Moderate yellowish brown 10 YR (5/4), medium dense, dry. Trace of fine sub-rounded gravel to 3", 25% fine sand, 75% non-plastic fines. No odor or staining.	0.1	0.0						
37				SM	UMCf (MCf)	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose to loose, dry. 5% fine sub-angular gravel to 3/4", 75% fine to medium sub-angular sand, 20% non-plastic fines. No odor or staining.	0.0	0.0						
38							0.0	0.0						
39				40	41	42	43	44		45	46	47	48	ML
49	Total depth 48.0' @ 12:05, 8-10-09													
50														
51														
52														
53														
54														
55														
56														
57														
58														
59														
60														
61														
62														
63														
64														
65														
66														
67														
68														
69														
70														
71														
72														
73														
74														

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# Boring Log

Project Number: 2027.01		Boring No.: SA122	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/09/09	Date Completed: 09/09/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 31.0	Depth to Water (ft bgs): 25.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 31.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA122-0.5B 06:58			SM	Qal	Silty Sand (SM): Moderate yellowish brown 10 YR (5/2), loose, dry. 5% fine sub-angular gravel to 3/4"+, 65% fine to medium sub-angular sand, 30% non-plastic fines. No odor or staining.				
2										
3										
4										
5										
6	SA122-10B 07:14			SM	Qal	Gravelly lens @ 6.0', approx. 6" thick.				
7										
8										
9										
10										
11	SA122-20B 07:39			SM	Qal	Gravelly lens @10.0', approx. 6" thick.				
12										
13										
14										
15										
16	SA122-30.5B 08:05			ML	UMCf (MCf)	Silty Sand (SM): Pale brown 5 YR (5/2), loose, dry. 5% fine sub-angular gravel to 3/4"+, 65% fine to medium sub-angular sand, 30% moderate-plastic fines. No odor or staining.				
17										
18										
19										
20										
21	SA122-30.5B 08:05			ML	UMCf (MCf)	Sandy Silt (ML): Pale brown 5 YR (5/2), medium-stiff to loose, wet. Trace fine sub-rounded gravel to 3/4"+, 35% fine sub-angular sand, 65% non-plastic fines. No odor or staining.	▽			
22										
23										
24										
25										
26	SA122-30.5B 08:05			ML	UMCf (MCf)	Sandy Silt (ML): Pale brown 5 YR (5/2), medium-stiff to loose, wet. Trace fine sub-rounded gravel to 3/4"+, 35% fine sub-angular sand, 65% non-plastic fines. No odor or staining.	▽			
27										
28										
29										
30										
31	SA122-30.5B 08:05					Total depth 31.0' @ 08:05, 9-9-09				
32										
33										
34										

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# Boring Log

Project Number: 2027.01		Boring No.: SA124	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/10/09	Date Completed: 09/11/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 42.0	Depth to Water (ft bgs):	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 42.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA124-0.5B 13:02			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 10% fine sub-angular gravel to 1/2"-, 80% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.		0.0	0.0	
2										
3										
4										
5										
6										
7										
8										
9										
10	SA124-10B 13:35			SP-SM	Qal	Gravel lens @ 9.0'		0.3	0.0	
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21	SA124-25B 07:04			SP-SM	Qal	Gravel @ 19.0'; 15% sub-angular gravel to 1 1/2"-		0.4	0.1	
22										
23										
24										
25										
26										
27										
28										
29										
30										
31				SM	Qal	Silty Sand (SM): Very pale orange 10 YR (8/2), very loose, dry. 5% fine sub-angular gravel to 1/2"-, 70% medium to fine sub-angular sand, 25% non-plastic fines. No odor or staining. Massive caliche @ 28.0".		0.1	0.0	
32										
33										
34										
30				ML	UMCf (MCf)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.		0.0	0.0	
31										
32										
33										
32				SM	UMCf (MCf)	Silty Sand (SM): Very pale orange 10 YR (8/2), very loose, dry. 10% fine sub-angular gravel to 1/2"-, 82% medium to fine sub-angular sand, 8% non-plastic fines. No odor or staining.		0.7	0.0	
33										
34										
34										
34				ML	UMCf (MCf)			0.0	0.1	
35										
36										
37										

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# Boring Log

Project Number: 2027.01

Boring No.: SA124


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/10/09

Date Completed: 09/11/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA124-42B 07:39			ML	UMCf (MCFI)	Sandy Silt (ML): Light brown 5 YR (6/4), medium stiff, dry. Trace fine sub-angular gravel to 3/8"+, 15% fine sub-angular sand, 85% non-plastic fines. No odor or staining.		0.0	0.0	
37										
38										
39										
40										
41										
42										
43										
44										
45										
46	Total depth 42.0' @ 07:45, 9-11-09									
47										
48										
49										
50										
51										
52										
53										
54										
55										
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69										
70										
71										
72										
73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: SA125	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/10/09	Date Completed: 09/10/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 39.0	Depth to Water (ft bgs):	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 39.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA125-0.5B 09:59			Fill		Fill Material: Poorly graded sand with gravel (SP), very loose, dry. 15% fine sub-angular to angular gravel to 1", 80% fine to coarse sub-angular sand, 5% non-plastic fines. No odor or staining.		0.6	0.0	
2										
3										
4										
5										
6	SA125-10B 10:09			SM	Qal	Silty Sand (SM): Very pale orange 10 YR (8/2), very loose, dry. 5% fine sub-angular gravel to 1/2", 70% medium to fine sub-angular sand, 25% non-plastic fines. No odor or staining. Gravelly 6.0' - 8.0'; up to 15% fine sub-angular gravel to 1 1/2".  @ 15.0'; up to 15% sub-angular to angular gravel to 1".		2.2	0.0	
7										
8										
9										
10										
11										
12										
13										
14										
15										
16	SA125-25B 10:36			ML	UMCf (MCf)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.		27.9	0.0	
17										
18										
19										
20										
21										
22										
23										
24										
25										
26	SA125-25B 10:36			ML	UMCf (MCf)	Sandy Silt (ML): Light brown 5 YR (6/4), medium stiff, dry. Trace fine sub-angular gravel to 3/8"+, 15% fine sub-angular sand, 85% non-plastic fines. No odor or staining.		7.4	0.0	
27										
28										
29										
30										
31										
32										
33										
34										
35										

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# Boring Log

Project Number: 2027.01

Boring No.: SA125


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/10/09

Date Completed: 09/10/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA125-39B, SA125009-39B 11:03			ML	UMCf (MCf1)	Sandy Silt (ML): Light brown 5 YR (6/4), medium stiff, dry. Trace fine sub-angular gravel to 3/8"+, 15% fine sub-angular sand, 85% non-plastic fines. No odor or staining.		0.1	0.0	
37										
38										
39										
40						Total depth 39.0' @ 11:15, 9-10-09				
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
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71										
72										
73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: SA126	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/10/09	Date Completed: 09/10/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 40.0	Depth to Water (ft bgs): Dry	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 40.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA126-0.5B 07:10			Fill		Fill Material: Poorly graded sand with gravel (SP), loose, dry. 20% fine angular to sub-angular gravel to 1-1/2", 75% fine to coarse sub-angular to angular sand, 5% non-plastic fines. No odor or staining. Some stratification visible (approx. 1/2" lifts).		0.1	0.0	
2										
3										
4										
5										
6	SA126-10B 07:25			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 10% fine sub-angular gravel to 1/2", 80% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.  Gravel lens @ 9.0': 25% sub-angular gravel to 3/4".		0.2	0.0	
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
18	SA126-18B 07:40					Gravel 18.0' - 19.5'; 15% sub-angular gravel to 1 1/2".		0.3	0.0	
19										
20										
21	SA126-25B 07:59			SM	Qal	Silty Sand (SM): Very pale orange 10 YR (8/2), very loose, dry to damp. 5% fine sub-angular gravel to 1/2", 70% medium to fine sub-angular sand, 25% non-plastic fines. No odor or staining.		0.4	0.0	
22										
23										
24										
25										
26										
27										
28						Gravel 27.5' - 28.0". Up to 15% sub-angular gravel to 1 1/4".		0.4	0.0	
29										
30										
31										
32										
33				SM	Qal	Silty Sand (SM): Very pale orange 10 YR (8/2), very loose to loose, damp to moist. 5% fine sub-angular gravel to 1/2", 70% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining. Fining downward to 30% non-plastic fines @ 31.0'.		0.6	0.0	
34										
				ML	UMCf (MCF1)			0.4	0.0	

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# Boring Log

Project Number: 2027.01

Boring No.: SA126


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/10/09

Date Completed: 09/10/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA126-40B, 40BMS, 40BMSD 08:30			ML	UMCf (MCF)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), dense to medium-dense locally, damp. 2% fine sub-angular to sub-rounded gravel to 3/8"+, 28% fine to medium sub-angular sand, 70% non-plastic fines. No odor or staining. Sandy lens 35.5' - 36.0'.		0.7	0.0	
37								0.4	0.0	
38								0.6	0.0	
39										
40						Total depth 40.0' @ 08:30, 9-10-09				
41										
42										
43										
44										
45										
46										
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48										
49										
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# Boring Log

Project Number: 2027.01		Boring No.: SA136	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/15/09	Date Completed: 09/15/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 40.0	Depth to Water (ft bgs): 34.0'	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 40.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA136-0.5B 07:10			Fill		Fill Material: Poorly graded sand with gravel (SP), very pale orange 10 YR (8/2), very-loose to loose, dry. 20% fine angular to sub-angular gravel to 1", 75% fine to coarse sub-angular to angular sand (25/50/25), 5% non-plastic fines. No odor or staining. Some stratification visible (approx. 1/2" lifts). Clay pipes, brick chips, and angular gravels in the fill.		1.6	0.1	
2										
3										
4										
5	SA136-10B 07:42			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 10% fine sub-angular gravel to 1/2", 80% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.  Gravel lens @ 8.0': 20% sub-angular gravel to 5/8".		3.1	0.1	
6										
7										
8										
9										
10										
11										
12										
13										
14										
15	SA136-25B 08:10			SM	Qal	Gravel @ 17.5'; 15% sub-angular gravel to 1 1/2".		0.9	0.0	
16										
17										
18										
19										
20										
21										
22										
23				ML	UMCf (MCFI)	Silty Sand (SM): Very pale orange 10 YR (8/2), very loose to loose, dry. 5% fine sub-angular gravel to 1/2", 70% medium to fine sub-angular sand, 25% non-plastic fines. No odor or staining.		1.4	0.0	
24										
25										
26										
27				ML	UMCf (MCFI)	Gravel @ 22'; 15% sub-angular gravel to 1 1/2".		0.5	0.0	
28										
29				SM	Qal	Gravel @ 22'; 15% sub-angular gravel to 1 1/2".		0.1	0.0	
30										
31				ML	UMCf (MCFI)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), dense to medium-dense locally, damp. 2% fine sub-angular to sub-rounded gravel to 3/8"+, 28% fine to medium sub-angular sand, 70% non-plastic fines. No odor or staining.		3.0	0.0	
32										
33										
34										

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# Boring Log

Project Number: 2027.01

Boring No.: SA136

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/15/09

Date Completed: 09/15/09

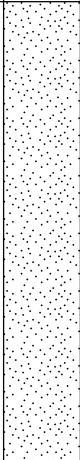

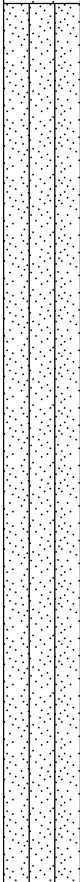
Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA136-40B 08:42			ML	UMCf (MCf)	First water @ 34.0'		0.3	0.0	
37				MH		Sandy Elastic Silt (MH): Moderate yellowish brown 10 YR (5/4), medium-stiff, wet. Trace fine sub-rounded gravel to 5/8", 20% fine sub-angular sand, 80% moderate-plastic fines. Much caliche as nodules, veinlets, and grain coatings on gravel clasts. No odor or staining.	0.7	0.0		
38							1.4	0.0		
39	Total depth 40.0' @ 08:30, 9-15-09									
40										
41										
42										
43										
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74										



# Boring Log

Project Number: 2027.01		Boring No.: SA146	
Project Name: Tronox Phase B Investigation		Logged by: Brendan Mulholland	
Drilling Contractor: Boart Longyear	Date Started: 08/04/09	Date Completed: 08/04/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 55.0	Depth to Water (ft bgs): 49.0	
Borehole Dia. (in): 8.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 55.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1				SP	Qal	Poorly Graded Sand (SP): Yellowish brown 10 YR (5/6), moist. 15% fine to coarse gravel, 85% fine to medium sand.				
2		0.0								
3		0.0								
4										
5										
6										
7		0.1								
8										
9										
10		0.0								
11										
12							SM	Qal	Silty Sand (SM): Yellowish brown 10 YR (5/6), moist. 5% coarse gravel, 70% coarse sand, 25% non-plastic fines.	
13		0.1								
14										
15		0.1								
16										
17		0.1								
18										
19		0.0								
20										
21		0.0								
22										
23		0.0								
24										
25		0.0								
26										
27		0.0								
28										
29		0.0								
30										
31		0.0								
32										
33		0.0								
34										

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# Boring Log

Project Number: 2027.01

Boring No.: SA146

Project Name: Tronox Phase B Investigation

Logged by: Brendan Mulholland

Drilling Contractor: Boart Longyear

Date Started: 08/04/09

Date Completed: 08/04/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36				SM	Qal					
37						Silt (ML): Dark yellowish brown 10 YR (5/4), moist. 5% fine sand, 95% non-plastic fines.          @ 49.0' Moist to wet.		0.0		
38										
39										
40										
41										
42										
43										
44										
45										
46										
47				ML	UMCf (MCf)			0.0		
48							▽			
49								0.0		
50										
51								0.0		
52										
53								0.0		
54										
55										
56						Total depth 55.0' @ 13:00, 8-4-09				
57										
58										
59										
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61										
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65										
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71										
72										
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# Boring Log

Project Number: 2027.01		Boring No.: SA147	
Project Name: Tronox Phase B Investigation		Logged by: Brendan Mulholland	
Drilling Contractor: Boart Longyear	Date Started: 08/04/09	Date Completed: 08/04/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 56.0	Depth to Water (ft bgs):	
Borehole Dia. (in): 8.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 56.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1				Conc		Concrete Slab, 7" thick, un-reinforced.				
2						Silty Sand (SM): Pale brown 10 YR (6/3), moist. 10% fine to coarse gravel, 70% medium to coarse sand, 20% non-plastic fines.		0.1		
3								0.0		
4								0.0		
5								0.0		
6								0.0		
7								0.0		
8								0.1		
9								0.0		
10								0.0		
11								0.1		
12								0.0		
13						@ 13.0' Color change to Light yellowish brown 10 YR (6/4).		0.0		
14				SM	Qal			0.1		
15								0.1		
16								0.1		
17								0.0		
18						18.0' - 21.0' Coarse gravel and volcanic cobbles.		0.0		
19								0.0		
20								0.0		
21								0.0		
22								0.0		
23								0.0		
24								0.0		
25								0.0		
26								0.0		
27								0.0		
28						28.0' - 30.0' Caliche zone, fine to coarse gravel sized caliche nodules, strong cementation, effervescence in dilute HCl.		0.0		
29								0.0		
30						Silty Sand (SM): Light yellowish brown 10 YR (6/4), moist. Trace fine gravel, 75% medium to coarse sand, 5% fine sand, 20% non-plastic fines.		0.0		
31								0.0		
32				SM	Qal			0.0		
33								0.0		
34								0.0		

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# Boring Log

Project Number: 2027.01

Boring No.: SA147

Project Name: Tronox Phase B Investigation

Logged by: Brendan Mulholland

Drilling Contractor: Boart Longyear

Date Started: 08/04/09

Date Completed: 08/04/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36				SM	Qal	Silty Sand (SM): Light yellowish brown 10 YR (6/4), moist. Trace fine gravel, 75% medium to coarse sand, 5% fine sand, 20% non-plastic fines.		0.0		
37										
38										
39										
40										
41								0.0		
42										
43										
44								0.0		
45										
46										
47				ML	UMCf (MCf)	@ 47.0' Color change to dark yellowish brown 10 YR (4/4).				
48								0.0		
49										
50								0.0		
51										
52										
53								0.0		
54										
55										
56								0.0		
57						Total depth 56.0' @ 09:30, 8-4-09				
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										

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# Boring Log

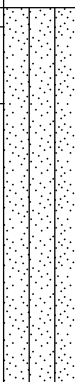

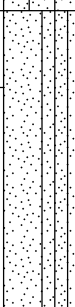

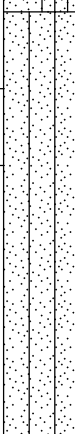



Project Number: 2027.01		Boring No.: SA150	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/24/09	Date Completed: 08/24/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 32.0	Depth to Water (ft bgs):	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 32.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA150-10B 10:46	SM	[Dotted pattern]	SM	Qal	Silty Sand (SM): Light brown 5 YR (6/4), very loose, dry. 10% fine sub-angular gravel to 3/4"+, 70% fine to medium sub-angular sand, 20% non-plastic fines. Vague organic odor, no staining.	11.1	0.4	[Diagonal hatching]	
2										
3										
4										
5										
6										
7										
8										
9										
10										
11	SA150-30B 11:45	SP	[Dotted pattern]	SP	Qal	Gravelly lens 12.5' - 15.0'; Well Graded Sand with Gravel ( 15% fine sub-angular gravel to 1"+, 65% fine to medium sub-angular sand, 20% non-plastic fines.	16.5	1.1	[Diagonal hatching]	
12										
13										
14										
15										
16										
17										
18										
19										
20										
21	SA150-30B 11:45	ML	[Vertical lines]	ML	UMCf (MCf)	Poorly Graded Sand (SP): Dark yellowish orange 10 YR (6/6), loose, dry. Trace fine sub-angular gravel to 3/8", 90% fine to medium sand, 10% non-plastic fines. No odor or staining.	19.3	1.1	[Diagonal hatching]	
22										
23										
24										
25										
26										
27										
28										
29										
30										
31	SA150-30B 11:45	ML	[Vertical lines]	ML	UMCf (MCf)	Gravel with caliche 26.0' - 28.7'; 10% fine gravel, 75% fine to medium sand, 15% non-plastic fines.	7.8	0.2	[Diagonal hatching]	
32										
33										
34										
35	Total depth 32' @ 12:00, 8-24-09									

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# Boring Log

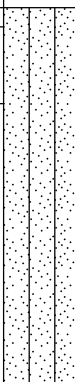




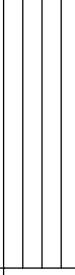
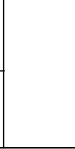
Project Number: 2027.01		Boring No.: SA154	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/24/09	Date Completed: 08/24/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 33.0	Depth to Water (ft bgs):	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 33.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA154-0.5B 07:38			SM	Qal	Silty Sand (SM): Light brown 5 YR (6/4), very loose, dry. 5% fine sub-angular gravel to 1/2"+, 75% fine to medium sub-angular sand, 20% non-plastic fines. Slight odor, no staining.		9.0	1.0	
2										
3										
4										
5										
6										
7										
8										
9										
10	SA154-10B 07:50			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Grayish orange 10 YR (7/4), loose to very loose, dry. 5% fine sub-angular gravel to 1"-, 85% fine to medium sand, 15% non-plastic fines. No odor or staining. Some caliche as grain coatings.		9.5	1.2	
11										
12										
13										
14										
15										
16	SA154-20B 08:21			SM	Qal	Silty Sand (SM): Light brown 5 YR (6/4), loose, dry. Trace to 15% locally fine sub-angular gravel to 1/2", 75% fine to medium sub-angular sand, 25% non-plastic fines. Slight odor, no staining.		7.2	0.4	
17										
18										
19										
20										
21										
22										
23										
24										
25	SA154-33B 08:58			SM	UMCf (MCf)	Gravelly lens 24' - 28'		7.1	0.5	
26										
27										
28										
29										
30										
31										
32										
33										
34	Total depth 33.0' @ 09:00, 8-24-09									

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# Boring Log

Project Number: 2027.01		Boring No.: SA170	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/08/09	Date Completed: 09/08/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 31.0	Depth to Water (ft bgs): 29.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 31.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA170-0.5B 11:20			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 2% ( up to 5% locally) fine sub-angular gravel to 3/4"-, 70% fine sub-angular sand, 30% non-plastic fines. No odor or staining.		13.4	0.4	
2										
3										
4										
5										
6										
7										
8										
9										
10	SA170-10B 11:30			SM	Qal	Gravelly lens @ 9.0', approx. 6" thick.		65.6	1.7	
11										
12										
13										
14										
15										
16	SA170-20B 12:00			SM	Qal	Silty Sand (SM): as above by with massive caliche 17.0' - 19.0'.		23.2	0.0	
17										
18										
19	SA170-20B 12:00			ML	UMCf (MCf)	Sandy Silt (ML): Grayish orange 10 YR (7/4), soft, dry. Trace fine sub-angular gravel to 3/4"-, 45% fine sub-angular sand, 55% non-plastic fines. No odor or staining.		46.4	0.9	
20										
21										
22										
23										
24	SA170-20B 12:00			ML	UMCf (MCf)	Sandy Silt (ML): Moderate yellowish brown 10 YR (5/4), medium-stiff to soft, damp to moist. Trace fine sub-angular gravel to 1/2", 40% fine sub-angular sand, 60% non-plastic fines. No odor or staining.		12.9	0.2	
25										
26										
27										
28										
29										
30										
31	SA170-30.5B 12:28					Total depth 31.0' @ 12:30, 9-8-09		3.1	0.0	
32										
33										
34										

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# Boring Log

Project Number: 2027.01		Boring No.: SA191	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/29/09	Date Completed: 09/29/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 40.0	Depth to Water (ft bgs): 39.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 40.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA191-0.5B 07:25			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose to loose, dry. 10% fine sub-angular gravel to 1"-, 70% fine to medium sub-angular sand, 20% non-plastic fines. No odor or staining.		1.0	0.9	
2										
3										
4										
5										
6	SA191-10B 07:55			SM	Qal	Gravel lens @ 6.0' ; 10% - 15% fine sub-angular gravel to 1"-, 70% fine to medium sand, 15% non-plastic fines. Some caliche coatings on gravel clasts..		0.4	0.2	
7										
8										
9										
10										
11										
12										
13										
14										
15										
16	SA191-25B 08:20			SP-SM		Poorly Graded Sand with Silt (SP-SM): Very pale orange 10YR (8/2), very loose, dry to damp. 5% fine sub-angular gravel to 1", 85% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.		0.4	0.0	
17										
18										
19										
20										
21										
22										
23										
24										
25										
26				ML	UMCf (MCfI)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.		0.4	0.1	
27										
28										
29										
30										
31										
32										
33										
34										

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# Boring Log

Project Number: 2027.01

Boring No.: SA191


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/29/09

Date Completed: 09/29/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA191-40B, SA191009-40B 09:00			ML	UMCf (MCF)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.	▽	0.7	0.0	
37								0.4	0.0	
38								0.4	0.0	
39								0.6	0.0	
40	Total depth 40.0' @ 09:00, 9-29-09									
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
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69										
70										
71										
72										
73										
74										

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# Boring Log

Project Number: 2027.01		Boring No.: SA193	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/29/09	Date Completed: 09/29/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 42.0	Depth to Water (ft bgs): 41.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 42.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA193-0.5B 10:25					Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose to loose, dry. 10% fine sub-angular gravel to 1"-, 70% fine to medium sub-angular sand, 20% non-plastic fines. No odor or staining.  Gravel lens @ 7.0' ; 15% fine sub-angular gravel to 1".  Gravel @ 12.0' - 13.0'; sub-angular gravel to 1".  Gravel @ 17.0'-17.5', sub-angular gravel to 1".				
2										
3	SA193-2.5B 12:03							2.7	0.1	
4										
5										
6								0.2	0.0	
7										
8										
9								0.5	0.1	
10	SA193-10B 10:35			SM	Qal					
11										
12								0.0	0.0	
13										
14								0.2	0.1	
15										
16								0.0	0.0	
17										
18								0.2	0.1	
19										
20								1.1	0.1	
21										
22								1.4	0.0	
23										
24							0.5	0.0		
25	SA193-25B 11:05			SP-SM		Poorly Graded Sand with Silt (SP-SM): Very pale orange 10YR (8/2), very loose, dry to damp. 5% fine sub-angular gravel to 1", 85% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.				
26							0.4	0.0		
27										
28							0.9	0.1		
29										
30						Massive caliche 29.0' - 30.0'.				
31							0.3	0.0		
32				ML	UMCf (MCf)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.				
33							1.5	0.1		
34							2.7	0.1		

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# Boring Log

Project Number: 2027.01

Boring No.: SA193


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/29/09

Date Completed: 09/29/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill							
36	SA193-42B 11:45			ML	UMCf (MCFI)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.	▽	0.9	0.0								
37								0.3	0.0								
38																	
39																	
40																	
41																	
42																	
43								Total depth 42.0' @ 11:45, 9-29-09									
44																	
45																	
46																	
47																	
48																	
49																	
50																	
51																	
52																	
53																	
54																	
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64																	
65																	
66																	
67																	
68																	
69																	
70																	
71																	
72																	
73																	
74																	

# Boring Log

Project Number: 2027.01		Boring No.: SA204	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/03/09	Date Completed: 09/03/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 45.0	Depth to Water (ft bgs): 32.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 45.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA204-0.5B 11:10			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 5% fine sub-angular gravel to 3/4"+, 65% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining. Possible fill material.				
2										
3										
4										
5										
6										
7	SA204-10B, SA204009-10B 11:23			SM	Qal	Silty Sand (SM): Grayish orange 10 YR (7/4), loose, dry. Trace fine gravel to 3/4", 75% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining.	9.2	0.8		
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19	SA204-30B 11:56			ML	UMCf (MCFI)	Gravel 10.0' - 11.0'; 5/75/20.	9.5	0.2		
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31				ML	UMCf (MCFI)	Gravel @ 23.0'; 10/70/20.	1.4	0.2		
32										
33										
34										
32							▽			
33				ML	UMCf (MCFI)	Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. 30% fine sub-angular sand, 70% moderate to non-plastic fines. No odor or staining.	2.4	0.0		
34				ML	UMCf (MCFI)	Massive caliche 30.0' - 32.5'	6.9	0.0		
							4.6	0.0		
							7.9	0.1		
							0.9	0.0		
							0.7	0.0		
							6.9	0.0		

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# Boring Log

Project Number: 2027.01

Boring No.: SA204


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/03/09

Date Completed: 09/03/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36				ML	UMCf (MCF)	Sandy Silt (ML): Light brown 5 YR (5/6), medium-stiff, wet. 30% fine sub-angular sand, 70% moderate to non-plastic fines. No odor or staining.		2.8	0.0	
37								1.4	0.0	
38										
39										
40										
41	SA204-45B 12:47					Total depth 45.0' @ 12:49, 9-3-09		0.5	0.0	
42								0.5	0.0	
43										
44										
45										
46										
47										
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70										
71										
72										
73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: SA209	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/28/09	Date Completed: 09/28/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 35.0	Depth to Water (ft bgs): 27.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 35.0'. Perched water @16.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA209-0.5B 07:35			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 10% fine sub-angular gravel to 1/2", 80% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.		7.1	0.1	
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16	SA209-25B 08:25			SM	Qal	Silty Sand (SM): Pale brown 10 YR (6/3), medium dense, moist. 10% fine to coarse sub-angular gravel to 1 1/2"+, 65% fine to coarse sub-angular sand, 25% non-plastic fines. No odor or staining. Locally with caliche cementation. Perched water @ 16'.  Massive caliche @ 20.0'		1.9	0.1	
17										
18										
19										
20										
21										
22										
23										
24										
25										
26				ML	UMCf (MCF1)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Some caliche cementation and nodules to 1/4".		1.1	0.1	
27										
28										
29										
30										
31										
32										
33										
34										

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# Boring Log

Project Number: 2027.01

Boring No.: SA209

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/28/09

Date Completed: 09/28/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA209-35B 08:50					Total depth 35.0' @ 08:50, 9-28-09		2.1	0.0	
37										
38										
39										
40										
41										
42										
43										
44										
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73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: SA210	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/27/09	Date Completed: 08/27/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 49.0	Depth to Water (ft bgs): 29.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 49.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA210-0.5B 07:50			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose to loose, dry. 5% fine sub-angular gravel to 3/4"-, 75% fine to medium sub-angular sand, 20% non-plastic fines. No odor or staining.	19.5	0.0		
2										
3										
4										
5										
6										
7										
8										
9										
10	SA210-10B 08:00			SM	Qal	Gravel @ 12.0'	17.5	0.0		
11										
12										
13										
14										
15										
16										
17										
18										
19										
20	SA210-30B 08:29			SP-SM	Qal	Gravel @ 18.5'	233	0.0		
21										
22										
23										
24										
25										
26										
27										
28										
29										
30	SA210-30B 08:29			ML	UMCf (MCf)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.	28.4	0.0		
31										
32										
33										
34										

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# Boring Log

Project Number: 2027.01

Boring No.: SA210


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/27/09

Date Completed: 08/27/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill					
36	SA210-49B 09:34			ML	UMCf (MCfl)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Locally with caliche cementation.		20.6	0.0						
37												57.9	0.0		
38													158	0.0	
39													169	0.0	
40													221	2.7	
41													37.8	0.0	
42													82.7	0.0	
43															
44															
45															
46						Color change and fining @ 44.0': Silt (ML) light brown 5 YR (5/6), 20% fine sand, 80% non-plastic fines. No odor or staining.									
47						Massive caliche @ 48.0".									
48															
49															
50						Total depth 49.5' @ 09:35, 8-27-09									
51															
52															
53															
54															
55															
56															
57															
58															
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67															
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69															
70															
71															
72															
73															
74															

# Boring Log

Project Number: 2027.01		Boring No.: SA214	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 10/05/09	Date Completed: 10/05/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 43.0	Depth to Water (ft bgs): 31.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 43.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA214-0.5B 10:20			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 5% fine sub-angular gravel to 1/2", 85% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.				
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15	SA214-15B 10:35			SM	Qal	Silty Sand (SM): Grayish orange 10 YR (7/4), loose, dry. Trace fine gravel to 3/4", 75% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining.				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30	SA214-30B 11:34					First water @ 31.0'	▽			
31										
32										
33										
34										

DRB-ENVIRO BORING 2027.01.GPJ 1/13/10

# Boring Log

Project Number: 2027.01

Boring No.: SA214

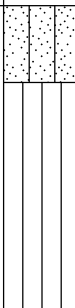

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 10/05/09

Date Completed: 10/05/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA214-43B 12:20			SM	Qal			0.2	0.0	
37				ML UMCf (MCF)	Sandy Silt (ML): Moderate yellowish brown 10 YR (5/4), medium-stiff, damp to dry. Trace fine sub-angular gravel to 1/2", 30% fine sand, 70% non-plastic fines. No odor or staining.		0.1	0.0		
38							0.7	0.1		
39							7.3	0.4		
40										
41										
42										
43										
44						Total depth 43.0' @ 12:20, 10-5-09				
45										
46										
47										
48										
49										
50										
51										
52										
53										
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71										
72										
73										
74										

DRB-ENVIRO BORING\_2027.01.GPJ 1/13/10

# Boring Log

Project Number: 2027.01		<b>Boring No.: SA28</b>	
Project Name: Tronox Phase B Investigation		Logged by: Brendan Mulholland	
Drilling Contractor: Boart Longyear		Date Started: 08/03/09	Date Completed: 08/03/09
Drilling Method: Rotary Sonic		Total Depth (ft bgs): 55.0	Depth to Water (ft bgs): 55.0
Borehole Dia. (in): 8.0		Surface Elevation (ft MSL):	
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 55.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1						Silty Sand (SM): Pale brown 10 YR (6/3), moist. 10% fine to coarse gravel, 70% medium to coarse sand, 20% non-plastic fines.				
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15						@ 9.0' Color change: Pale brown 10 YR (6/3) to light yellowish brown 10 YR (6/4).				
16				SM	Qal	14.0' - 15.0' Volcanic cobbles.				
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27						Silty Sand (SM): Light yellowish brown 10 YR (6/4), moist. 5% coarse gravel, 75% medium to coarse sand, 20% non-plastic fines.				
28										
29										
30										
31										
32										
33				ML	UMCf (MCFI)	Silt (ML): Yellowish brown 10 YR (5/6), moist. 7% fine gravel, 5% fine sand, 93% non-plastic fines.				
34										

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# Boring Log

Project Number: 2027.01

**Boring No.: SA28**


Project Name: Tronox Phase B Investigation

Logged by: Brendan Mulholland

Drilling Contractor: Boart Longyear

Date Started: 08/03/09

Date Completed: 08/03/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36						Silt (ML): Yellowish brown 10 YR (5/6), moist. 7% fine gravel, 5% fine sand, 93% non-plastic fines.		0.0		
37								0.0		
38								0.0		
39						39.0' - 48.0', >5% - <12% fine gravel.		0.0		
40								0.0		
41								0.0		
42								0.0		
43						@ 42.5' Color change to brownish yellow 10 YR (6/6).		0.0		
44				ML	UMCf (MCf)			0.1		
45								0.0		
46								0.0		
47								0.0		
48						Silt (ML): Brownish yellow 10 YR (6/6), moist. 5% fine sand, 95% non-plastic fines.		0.0		
49								0.0		
50								0.0		
51								0.0		
52								0.0		
53								0.0		
54				SM	UMCf (MCf)	Silty Sand (SM): Brownish yellow 10 YR (6/6), moist to wet. 5% coarse gravel, 75% fine to coarse sand, 20% non-plastic fines.	▽	0.1		
55								0.1		
56						Total depth 55.0' @ 12:10, 8-3-09				
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										

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# Boring Log

Project Number: 2027.01		Boring No.: SA29	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/28/09	Date Completed: 09/28/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 40.0	Depth to Water (ft bgs): 28.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		
Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 40.0'.			

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill										
1	SA29-0.5B 09:59	[Symbol]	[Symbol]	SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 10% fine sub-angular gravel to 1/2", 80% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.		3.1	0.1	[Symbol]										
2																				
3																				
4																				
5																				
6																				
7																				
8	SA29-10B 10:14	[Symbol]	[Symbol]	SP-SM	Qal	Gravelly lens 8.0' - 8.5'		7.8	0.1	[Symbol]										
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17											SA29-25B 10:40	[Symbol]	[Symbol]	SM	Qal	Silty Sand (SM): Light yellowish brown 10 YR (6/4), very loose to loose, dry to damp. 10% fine sub-angular gravel to 1/2"+, 65% fine to coarse sub-angular sand (35/45/20), 25% non-plastic fines. No odor or staining.		3.8	0.0	[Symbol]
18																				
19																				
20																				
21																				
22																				
23																				
24																				
25																				
26																				
27	Massive caliche 27.0' - 29.0' First water @ 28.5'	[Symbol]	[Symbol]					0.9	0.1	[Symbol]										
28																				
29																				
30											ML UMCf (MCF)	[Symbol]	[Symbol]					0.0	0.0	[Symbol]
31																				
32																				
33																				
34																				
								0.5	0.0											

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# Boring Log

Project Number: 2027.01

Boring No.: SA29


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/28/09

Date Completed: 09/28/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36				ML	UMCf (MCF)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium dense, dry. 25% fine sand, 75% non-plastic fines. No odor or staining. Some caliche cementation and nodules to 1/4".		7.1	0.1	
37								0.9	0.0	
38	SA29-40B, 40BMS, 40BMSD 11:21					Total depth 40.0' @ 11:25, 9-28-09		0.7	0.0	
39										
40										
41										
42										
43										
44										
45										
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69										
70										
71										
72										
73										
74										

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# Boring Log

Project Number: 2027.01		Boring No.: SA30	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/15/09	Date Completed: 09/15/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 38.0	Depth to Water (ft bgs): 34.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 38.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1						Concrete slab: 0.0' - 5.0', un-reinforced.				
2				Conc						
3										
4										
5	SA30-5B 11:15									
6						Poorly Graded Sand with Silt (SP-SM): Dark yellowish orange 10 YR (6/6), very loose - loose, dry. 10% fine angular to sub-angular gravel to 5/8", 80% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.				
7				SP-SM	Qal			7.1	0.2	
8										
9	SA30-9B 11:25							9.6	0.1	
10										
11								2.3	0.0	
12										
13						Silty Sand (SM): Light yellowish brown 10 YR (6/4), medium-dense to loose, dry to damp. 5% fine sub-angular gravel to 5/8", 65% fine to medium sub-angular sand, 30% non-plastic fines. No odor or staining.				
14								0.9	0.0	
15										
16								5.3	0.1	
17										
18								6.0	3.0	
19										
20								39.7	0.4	
21										
22				SM	Qal			194	0.1	
23										
24								39.1	0.0	
25	SA30-25B 11:48									
26						Massive caliche 26.0' - 27.5'		17.4	0.0	
27										
28								0.9	0.0	
29						Massive caliche 29.0' - 30.0'				
30								0.9	0.0	
31										
32								0.7	0.1	
33										
34				ML	UMCf (MCFI)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), dense to medium-dense, moist to wet. 25% medium sub-angular sand, 75% non-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings. Rare lenses of silty sand to 1".	▽	0.1	0.0	

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# Boring Log

Project Number: 2027.01

Boring No.: SA30


Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/15/09

Date Completed: 09/15/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA30-38B 12:16			ML	UMCf (MCf)	First water @ 34.0'		0.0	0.0	
37						Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), dense to medium-dense, moist to wet. 25% medium sub-angular sand, 75% non-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings. Rare lenses of silty sand to 1".		0.3	0.0	
38						Total depth 38.0' @ 13:20, 9-15-09				
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
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69										
70										
71										
72										
73										
74										

# Boring Log

Project Number: 2027.01		Boring No.: SA31	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/09/09	Date Completed: 09/09/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 32.0	Depth to Water (ft bgs): 24.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 32.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill	
1	SA31-0.5B 09:13					Asphalt paving 2" thick.					
2						Silty Sand (SM): Light brown 5 YR (6/4), very loose, dry. 8% fine sub-angular gravel to 3/4"+, 72% fine to medium sub-angular sand, 20% non-plastic fines. No odor or staining.					
3	SA31-10B 09:20			SM	Qal	Gravelly @ 4.0'					
4											
5						10.3					0.2
6											
7						0.8					0.0
8											
9						5.7					0.0
10											
11	SA31-20B 09:41			SP-SM	Qal	Gravelly @ 10.0'					
12											
13						3.8					0.0
14											
15						2.4					0.0
16											
17	10.3	0.2									
18	SA31-32B 10:08			ML	UMCf (MCf)	Poorly Graded Sand with Silt (SP-SM): Dark yellowish orange 10 YR (6/6), loose, dry. Trace fine sub-angular gravel to 3/8", 90% fine sand, 10% non-plastic fines. No odor or staining.					
19											
20						15.5					0.2
21											
22	19.2	0.0									
23											
24							19.5	0.0			
25						Sandy Silt (ML): Pale brown 5 YR (5/2), medium stiff, damp to moist. Trace fine sub-angular gravel to 1/2"+, 35% fine sub-angular sand, 65% non to moderate-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings. Sandy, gravelly lens 25.0' - 26.5'	∇				
26							13.8	0.2			
27							4.7	0.0			
28							4.8	0.0			
29											
30											
31											
32											
33						Total depth 32' @ 10:10, 9-9-09					
34											

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# Boring Log

Project Number: 2027.01		Boring No.: SA32	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 09/21/09	Date Completed: 09/21/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 37.0	Depth to Water (ft bgs): 28.5	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 37.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA32-0.5B 12:55			SP	Qal	Poorly Graded Sand (SP): Pale yellowish brown 10 YR (6/2), loose, dry. 5% fine sub-angular gravel to 1", 90% fine to medium sub-angular sand, 5% non-plastic fines. No odor or staining.		38.4	1.5	
2										
3										
4										
5										
6										
7										
8										
9										
10	SA32-9B 13:12					Gravel 9.0' - 10.75', 10% fine sub-angular to angular gravel to 1".		54.7	0.0	
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	SA32-25B, SA32009-25B 13:44			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), very loose - loose, dry. 10% fine sub-angular gravel to 1/2", 80% fine to medium sub-angular sand, 10% non-plastic fines. No odor or staining.		90.0	0.0	
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34				ML	UMCf (MCf)	Sandy Silt (ML): Dark yellowish orange 10 YR (6/6), medium-dense, wet. 25% fine sub-angular sand, 75% moderate to non-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings.	▽	17.9	0.1	
								7.9	0.1	
								0.9	0.0	

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# Boring Log

Project Number: 2027.01

Boring No.: SA32

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 09/21/09

Date Completed: 09/21/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36	SA32-37B 14:19			ML	UMCf (MCl)	Total depth 37.0' @ 14:20, 9-21-09		0.1	0.0	
37								11.2	0.0	
38										
39										
40										
41										
42										
43										
44										
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72										
73										
74										

# Boring Log

Project Number: 2027.01		<b>Boring No.: SA65</b>	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/25/09	Date Completed: 08/25/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 35.0	Depth to Water (ft bgs): 31.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 35.0'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA65-10B 11:27			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), loose to very loose, dry. 5% fine sub-angular gravel to 3/8"+, 70% fine to medium sub-angular sand, 25% non-plastic fines. No odor or staining.		0.2	1.4	
2										
3										
4										
5										
6										
7										
8										
9										
10										
11	SA65-20B 11:45			SP	Qal	Poorly Graded Sand (SP) to Poorly Graded Sand with Silt (SP-SM): Very pale orange 10 YR (8/2), loose to very loose, dry. 2% - 5% fine sub-angular gravel to 1/2", 75% fine sand, 20% (to 10% locally) non-plastic fines. No odor or staining.  Gravelly lenses 10.5' - 11.8'; and 14.5' to 15.5'		0.0	1.1	
12										
13										
14										
15										
16										
17										
18										
19										
20										
21	SA65-32.5B 12:15			SP-SM	Qal	Poorly Graded Sand with Silt (SP-SM): Pale yellowish brown 10 YR (6/2), loose, dry to damp. Trace fine sub-angular gravel to 1/2", 80% fine to medium sand, 20% non-plastic fines. Some caliche as veinlets and grain coatings from 25' - 29'.		0.0	0.6	
22										
23										
24										
25										
26										
27										
28										
29										
30										
31				SM	Qal	Silty Sand (SM): Dark yellowish brown 10 YR (4/2), very loose, wet. Trace fine sub-angular gravel to 3/8"+, 75% medium sub-angular sand, 25% non-plastic fines. Vague organic odor, no staining.	▽			
32										
33										
34										
				ML	UMCf (MCFI)	Silt with Sand (ML): Light brown 5 YR (5/6), medium dense to dense, wet. Trace fine sub-rounded gravel to 3/8"+, 20% - 35% fine sand, 80% - 65% non to moderate-plastic fines. Vague organic odor, no staining. Some caliche as veinlets and grain		23.0	0.7	

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# Boring Log

Project Number: 2027.01

Boring No.: SA65

Project Name: Tronox Phase B Investigation

Logged by: Dana R. Brown

Drilling Contractor: Boart Longyear

Date Started: 08/25/09

Date Completed: 08/25/09

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
36						coatings.				
37						Total depth 35.0' @ 12:20, 8-25-09				
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
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50										
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DRB-ENVIRO BORING\_2027.01.GPJ 1/13/10

# Boring Log

Project Number: 2027.01		Boring No.: SA94	
Project Name: Tronox Phase B Investigation		Logged by: Dana R. Brown	
Drilling Contractor: Boart Longyear	Date Started: 08/25/09	Date Completed: 08/25/09	
Drilling Method: Rotary Sonic	Total Depth (ft bgs): 31.5	Depth to Water (ft bgs): 30.0	
Borehole Dia. (in): 6.0	Surface Elevation (ft MSL):		

Remarks: Abandoned with neat cement grout containing 3% (v/v) bentonite powder from 0.0' to 31.5'.

Depth (ft)	Sample I.D. Sample Time	Sample Type	Graphic Log	USCS Code	Formation Name	Material Description	Water Level	10.6 ev PID (ppm)	11.7 ev PID (ppm)	Backfill
1	SA94-0.5B 08:09			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), very loose, dry. 5% fine sub-angular gravel to 1"+, 70% fine to medium sub-angular sand, 25% non-plastic fines. Vague organic odor, no staining.				
2										
3										
4	SA94-10B 08:34			SP	Qal	Poorly Graded Sand (SP): Very pale orange 10 YR (8/2), very loose, dry. 5% fine sub-angular gravel to 1/2", 89% fine to medium sand, 6% non-plastic fines. No odor or staining.	4.6	0.2		
5						Gravelly lenses 7.0' - 8.0'; and 12.5' to 13.5'	1.7	0.0		
6							1.8	0.0		
7							1.8	0.0		
8							7.0	0.0		
9							4.5	0.0		
10						4.2	0.0			
11	5.5	0.0								
12	SA94-29B 08:50			SM	Qal	Silty Sand (SM): Pale yellowish brown 10 YR (6/2), loose, dry. 2% fine sub-angular gravel to 3/8"+, 70% fine - medium sub-angular sand, 28% non to moderate-plastic fines. No odor or staining. Some caliche as veinlets and grain coatings.	8.4	0.0		
13						8.3	0.1			
14						18.0	0.5			
15						18.6	0.4			
16						15.7	0.4			
17										
18	SA94-32.5B 12:15					Total depth 31.5' @ 09:00, 8-25-09				
19										

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