Agreement Log #: KIF-10-069

Time-Critical Concurrence

Area:
Emory River, Segment 1, Grid B-36 through B-39

Agreement:

Ash removal activities have been completed in Segment 1 for dredge grids B-36 through B-39.

The bathymetric survey completed on 6/22/10 indicates that there was significant removal of recoverable ash in grids B-36 through B-39. Interpretation of the bathymetric survey shows all ash removed from the grids except for an approximate 40' wide band trending north-south. These grids have been repeatedly dredged with the most recent pass made by the Shirley 16" eTrack equipped dredge. The dredge logs for this last pass by the Shirley were reviewed and it was determined that dredge cutter head has reached refusal preventing excavation to the targeted depth. The logs mention encountering rocks and frequent broken and missing cutter teeth. It was reported that the cutter head vibrating the entire dredge during the attempts to reach the targeted depth on the 19th contributed to a high pressure hydraulic line failure.

These results indicate that dredge has reached refusal and that there is no remaining recoverable ash in Segment 1 for grids B-36 through B-39.

Attachments:
Figure 5, Ash Remaining to Pre-Spill Surface Segments 1, 2, 3 and 5, dated 2/25/10.
Figure 2, Ash Remaining Through Sevenson 06-23 Survey, dated 6/23/10.
Figure 1, Bathymetry Removal Areas - Segment 1, B-36 through B-39 dated 6/22/10.
Daily Dredge Logs and Control Screen Prints, Shirley, June 17th day shift through June 20, 2010 night shift

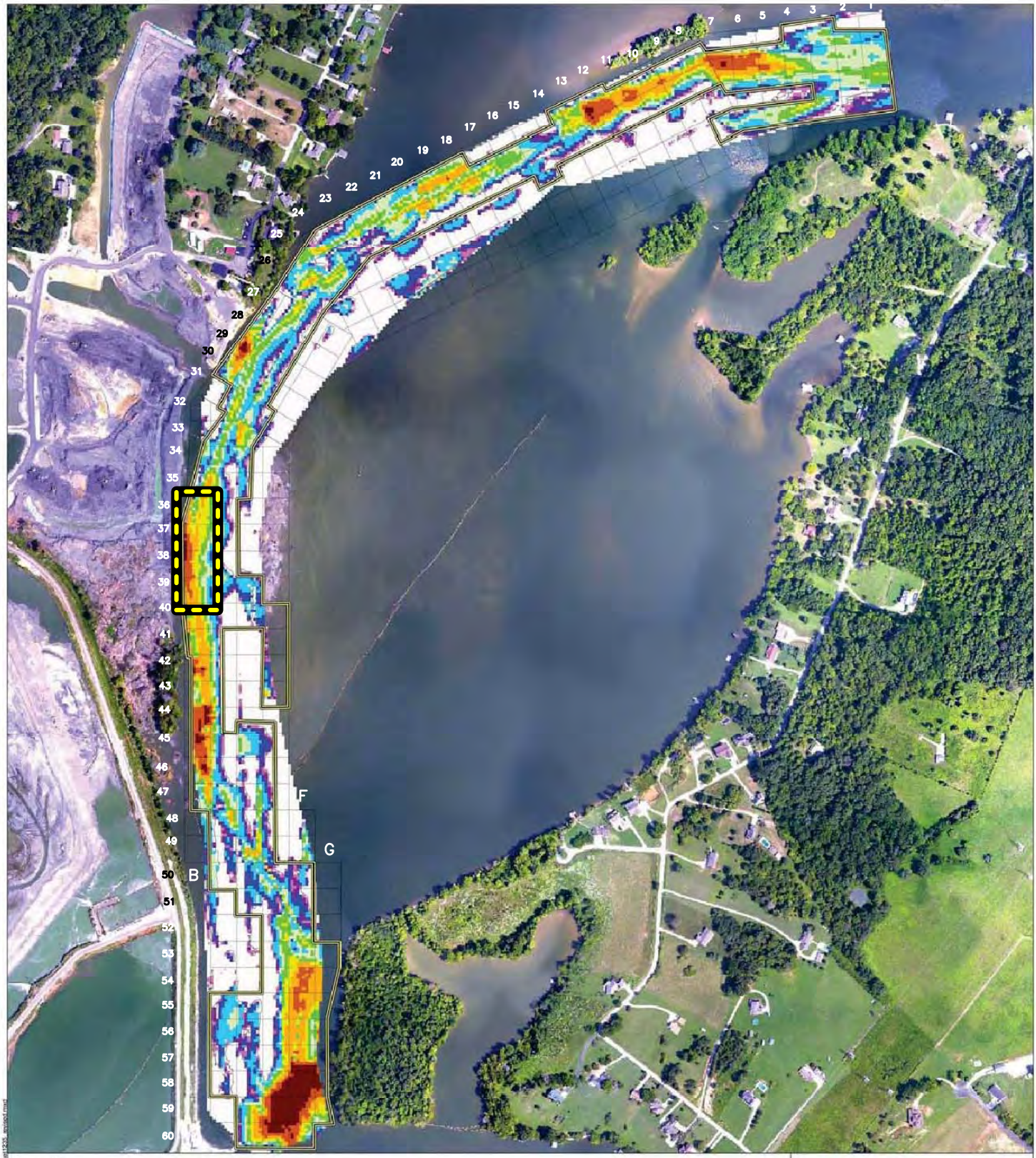
Concurrence Comments:

Julia L Pfeffer — Jacobs Project Manager — 6/24/10 Date

Kathryn Nash — Tennessee Valley Authority — 6/24/10 Date

Leo Francendese — U. S. Environmental Protection Agency — 6/25/10 Date

consulted w/ TDEC



Legend

Ash Remaining: ~438,592 cy

- 0 - 1 inch: ~39 cy
- 1 - 6 inches: ~1,315 cy
- 6 inches - 1 ft: ~3,802 cy
- 1 - 2 ft: ~ 14,177 cy
- 2 - 4 ft: ~45,426 cy
- 4 - 6 ft: ~57,924 cy
- 6 - 8 ft: ~57,980 cy
- 8 - 10 ft: ~46,704 cy
- 10 - 15 ft: ~81,783 cy
- 15 - 20 ft: ~62,820 cy
- > 20 ft: ~56,629 cy

Proposed Dredge Area

Area of Interest

DRAFT

0 300 600 Feet

N

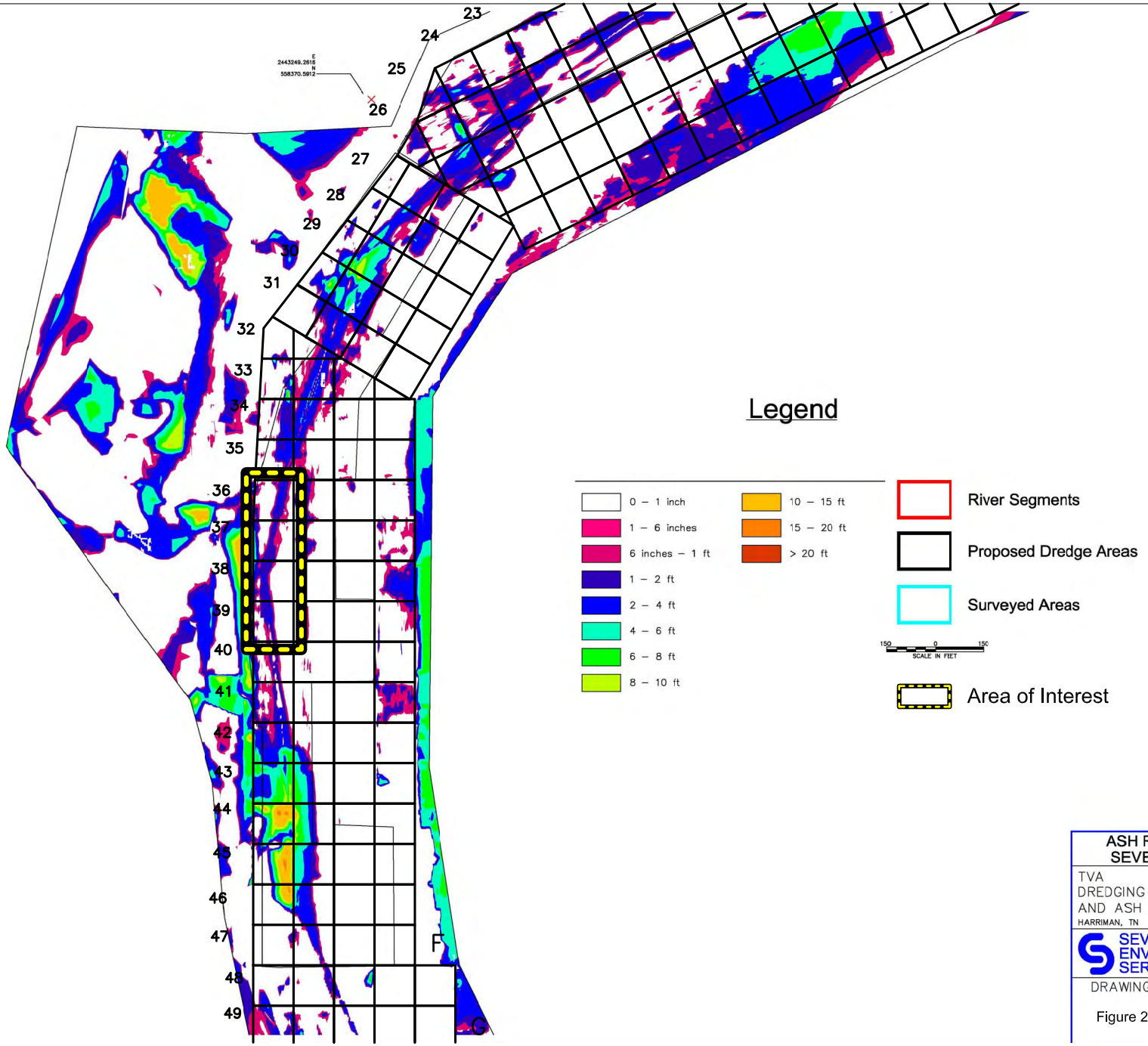
1:1,800

JACOBS

Ash Remaining to Pre-Spill Surface Segments 1, 2, 3, and 5

NAME: croberts DATE: 02/25/2010

Figure 5



ASH REMAINING THROUGH SEVENSON 06-23 SURVEY

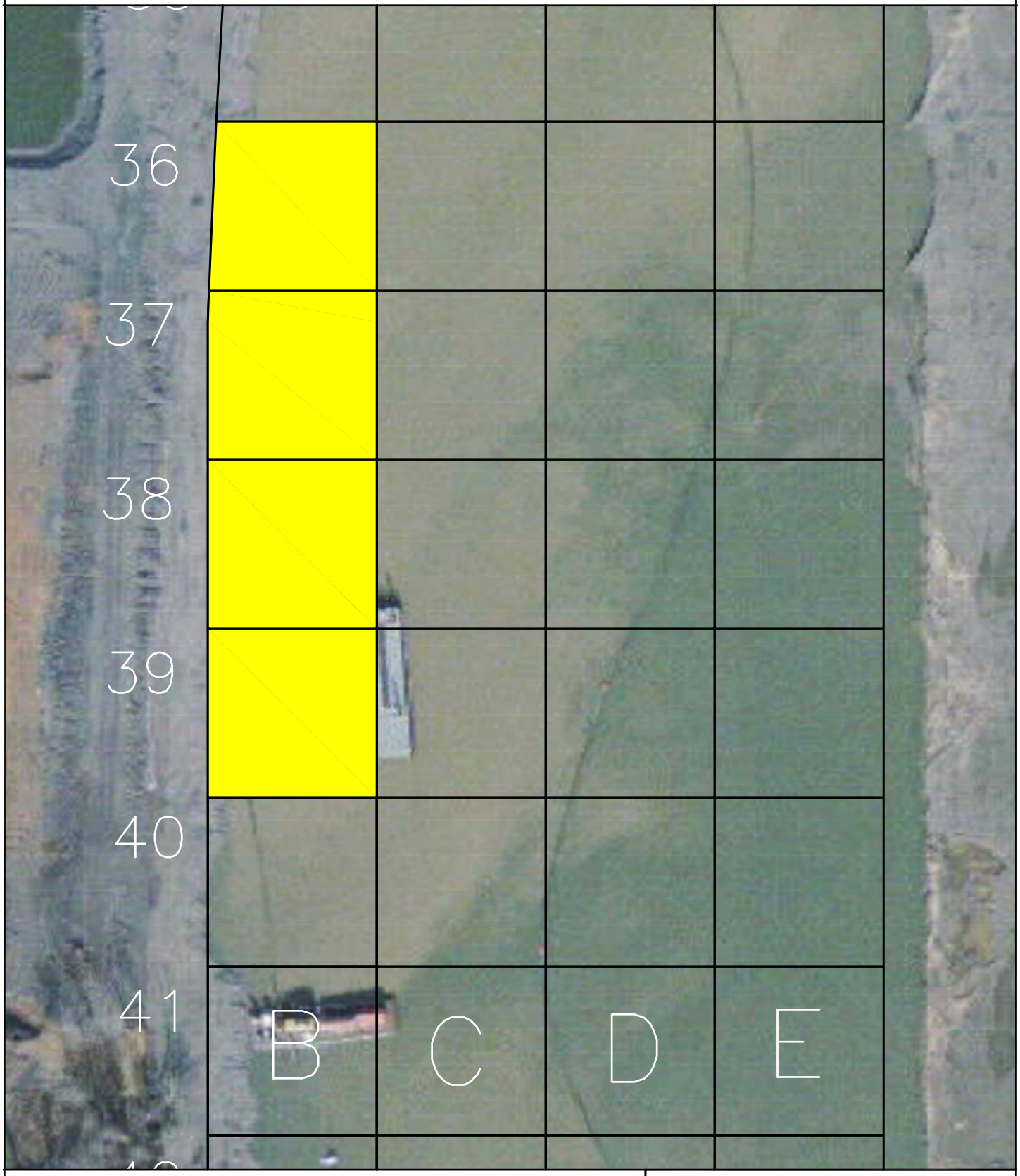
TVA
DREDGING OF THE EMORY RIVER AND ASH PROCESSING
HARRIMAN, TN

SEVENSON ENVIRONMENTAL SERVICES, INC.

DRAWING
Figure 2

DATE:	06/23/10
DRAWN BY:	CML
CHECKED BY:	
CAD FILE:	volume remaining 0623 N
SCALE:	

Bathymetry Removal Areas - Segment 1



Removed From Plan

E-trac Dredging Path

0 50 100 200

SCALE IN FEET

N

JACOBS™

06/22/10

Figure 1

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Dredge Shirley

Day Thursday

Date 6-17-10

Dredge Shift: Gary

Hours:

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
	7:00		1:50					Safety meeting & service Dredge
8:50	10:10	1:20	:10					Clean Pump
10:20	11:50	1:30	:05					Clean Pump
11:55	12:25	1:30	:55					Computer shutdown on Purpose by Jeff
1:20	3:25	2:05	1:15					Move Dredge & set anchor
4:40	6:50	2:10	:10					
	7:00							
		7:35	4:25		12:00 Total Hours			

Conditions:

Initial Flyash Thickness 3 Ft

Vegetation Light ☐ Medium ☐ Heavy ☐

Debris Light ☐ Medium ☐ Heavy ☐

# of Blockage Clears 2

Area Dredged: 36B & 35B

130 ft swing on 36B

36B

Shift Start X 2442957 Y 557190

Shift End X 2442959 Y 557124

Tons Start 204324 (TN)

Tons End

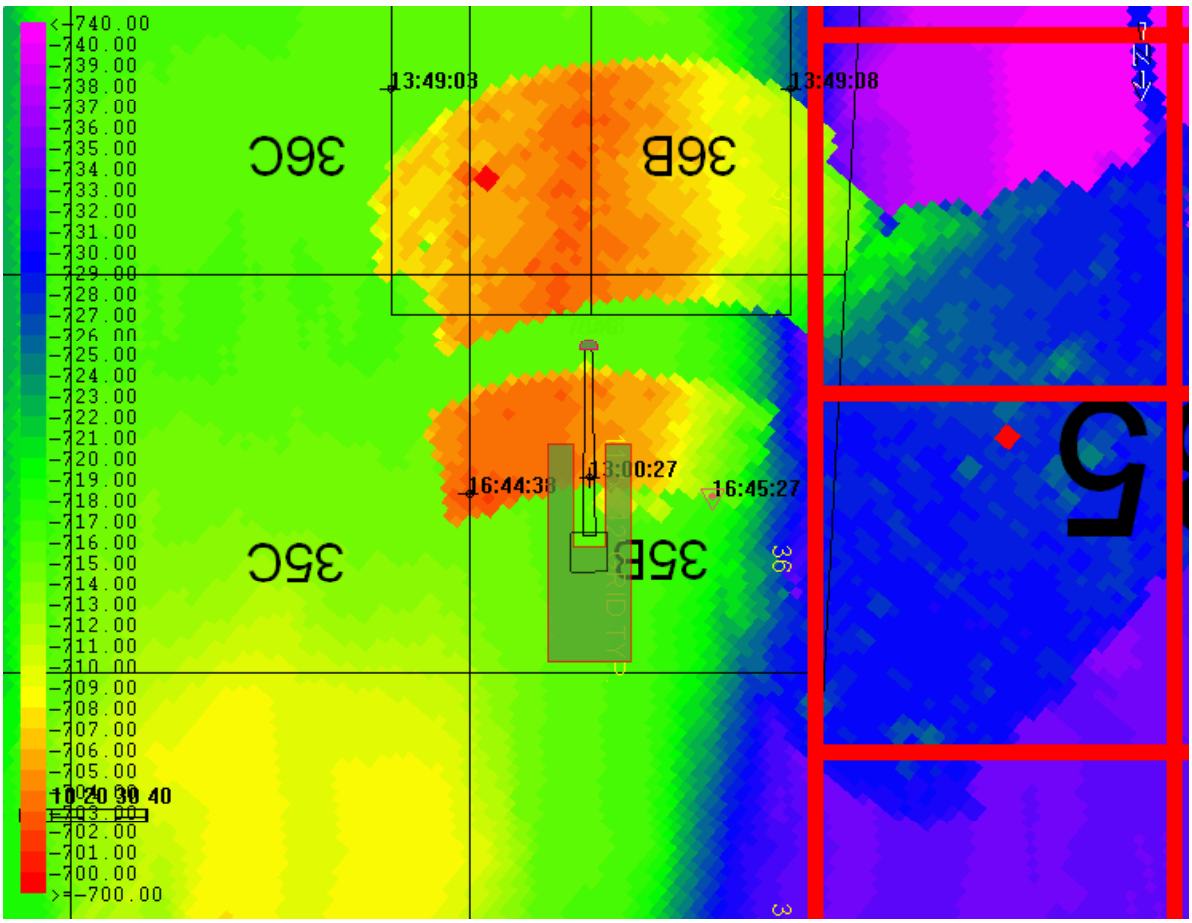
Comments:

75' swing on 35B

X 2442972 Y 557260

X 2442971 Y 557221

Shirley eTrack
Day Shift 6/17/10



Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Dredge SHIRLEY #1

Day THURSDAY

Date 6-17-2010

Dredge Shift: Night 7pm-7am

Hours: 1886

Buddy / Jason

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
1900	1920	~~0~~		20				Service dredge Replace 4 teeth missing
2000	2000	~~0~~		30				Trying to prime Service Water pump
2030	2250	220		40				WASHOUT TO Move dredge ahead 50'
2330	0530	~~6.0~~		45				move Anchors
0615								
				Total Hours				

Conditions:

Initial Flyash Thickness _____ Ft

Vegetation Light ☐ Medium ☐ Heavy ☐

Debris Light ☐ Medium ☐ Heavy ☐

# of Blockage Clears _____

90'X35'X4.5'=525 CY.

Area Dredged: 36B - 37B - 35B

Shift Start X 2442959 Y 557124

Shift End X 2442970 Y 557188

Tons Start

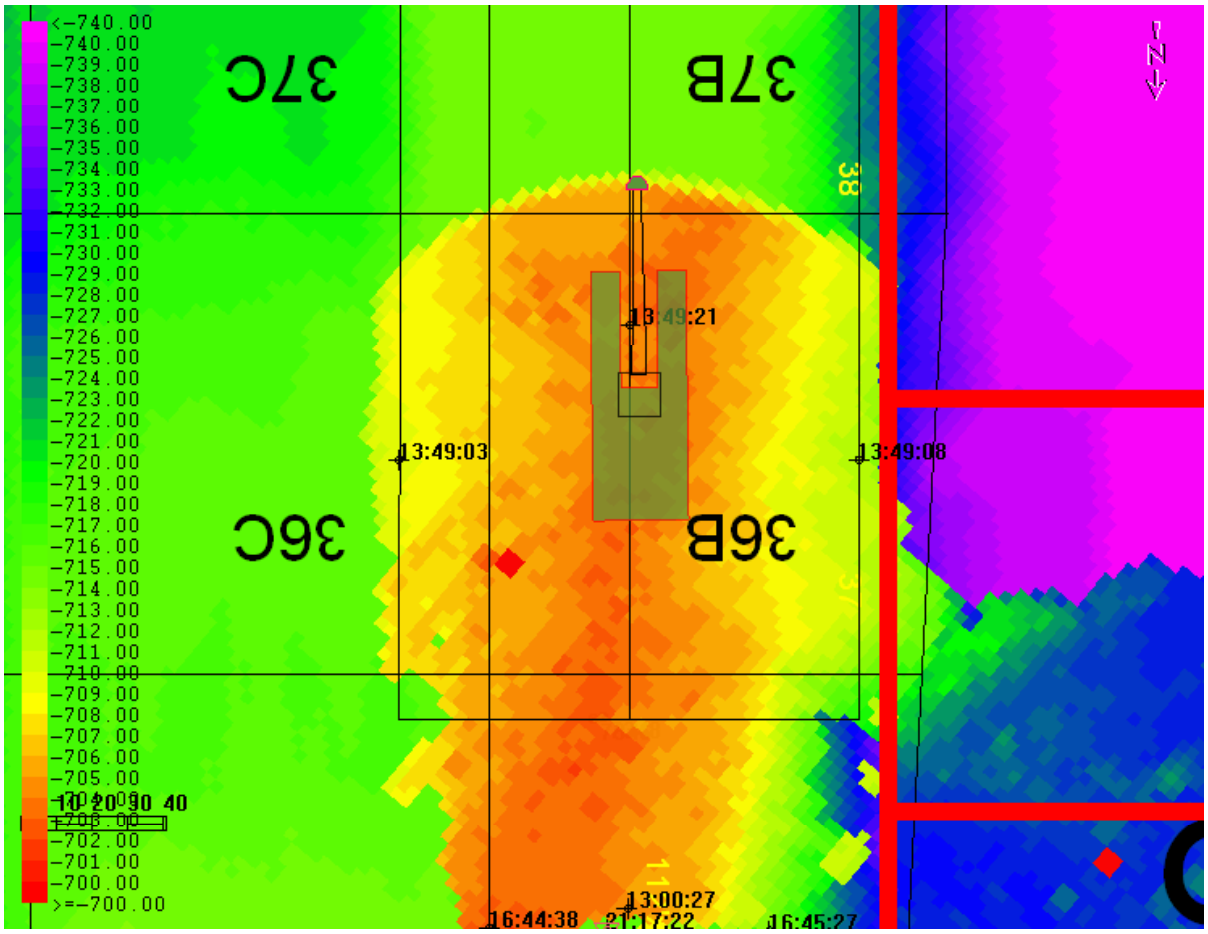
Tons End

130 X 75 X 4.5 = 1625 CY → ~~X 2442970~~ Y 557137

~~X 2442968~~ Y 557065

Comments:

Shirley eTrack
Night Shift 6/17/10



Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Day Fri

Date 6-18-10

Dredge Shirley

Dredge Shift: DAYS

Hours: 1897 MAIN 1677 Hyd.

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:00	7:50	4:10	:50		~~80~~			Paper work, grease
12:00	14:20	4:30	2:20		1650	80	JB-JB	move swing Ankors (2)
18:50								
					Run	Total Hours	Down	
					8:40		3:10	

Conditions:

Initial Flyash Thickness 4-6 Ft 130 Feet wide

Vegetation Light ☑ Medium ☐ Heavy ☐

Debris Light ☑ Medium ☐ Heavy ☐

# of Blockage Clears 0

Area Dredged: 37-B

Shift Start X 2442968 Y 557065

Shift End X ~~[illegible]~~ X 2442972 Y 556970 Y ~~[illegible]~~

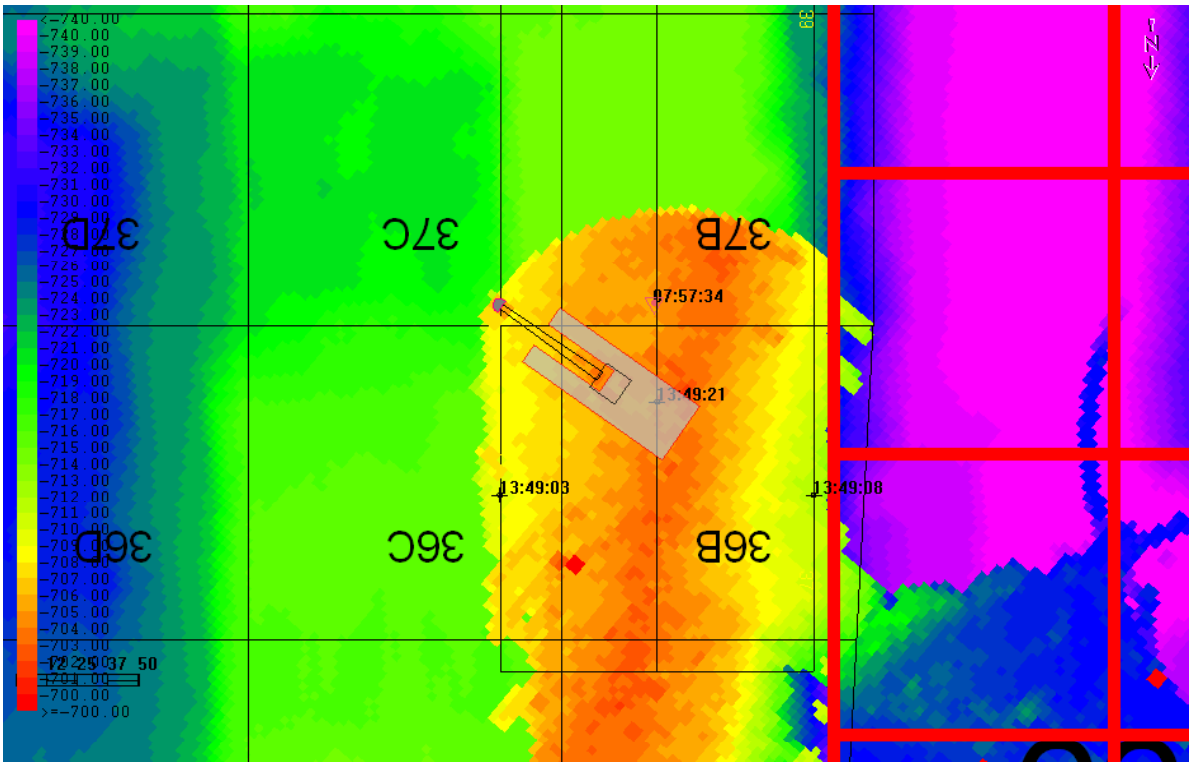
Tons Start

Tons End

Comments:

MATCHES BATHY SURVEY

Shirley eTrack
Day Shift 6/18/10



Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

159
3592

Dredge SHIRLEY #1

Day FRIDAY

Date 6-18-10

Dredge Shift: Night 7pm-7am

Hours: 1909

Buddy / Damon

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
1900	2000	0	1.0					Service dredge Replace 7 Teeth
2040	2106	20	10					Clean pump (Rocks)
2110	2135	25	15					Clean pump (Rocks)
2150	0045	255	2.0					Service water pping blew in engine room dredge almost Sa
0245	0540	255	10					Move Strbd S/A
0550	0600	10	10					Move Port S/A
0610	0645	35	15					
0700								
		8.0	4.0		Total Hours			

130'X80X4.5 = 1733 CY 1158 TONS

Conditions:

Initial Flyash Thickness 4 1/2 Ft

Area Dredged: 37B + 38B

Vegetation	Light	☐	Medium	☐	Heavy	☐
Debris	Light	☐	Medium	☐	Heavy	☐

# of Blockage Clears 2

Shift Start X 2442972 Y 556970

Shift End X 2442971 Y 556895

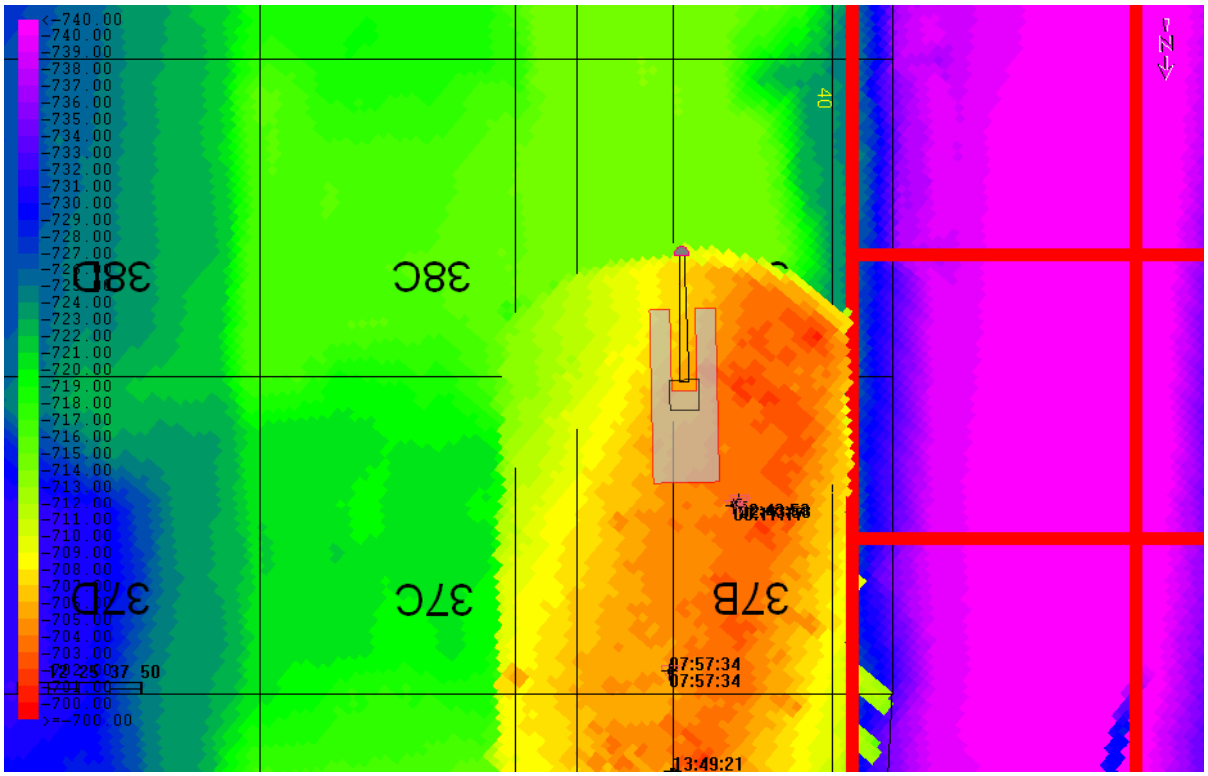
Tons Start 210265

Tons End 211423

Comments: REPLACED 7 CUTTER TEETH 5 missing - 2 broke

FROM X2442947-Y556945 TO X2442954-Y556097 23' STRBD of ℄ TO STRBD TOE ROCK SHELF 6' TO 1' SHORT OF GREEN LNG

Shirley eTrack
Night Shift 6/18/10



Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Dredge: Shirley

Day: Saturday

Date: 6-19-10

Dredge Shift: Day

Hours:

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
	700		1:00		1650	72	JBtJS	Safety meeting & service dredge
800	1125	3:25	135					Weather shutdown
1300	1430	1:30	115					Move Anchor & changed Port swing wire
1545	1630	:45	:05					~~weather shutdown~~ Pump choke
1635	1715	:40	145					Weather shutdown
	1900							
		6:20	5:40		12:00	Total Hours		

Conditions:

Initial Flyash Thickness 4-6 Material Ft

Vegetation Light ☐ Medium ☐ Heavy ☐

Debris Light ☐ Medium ☐ Heavy ☐

# of Blockage Clears _____

Area Dredged: 38 B

130' swing

Shift Start X 2442971 Y 556895

Shift End X 2442970 Y 556833

Tons Start _____ Tons End _____

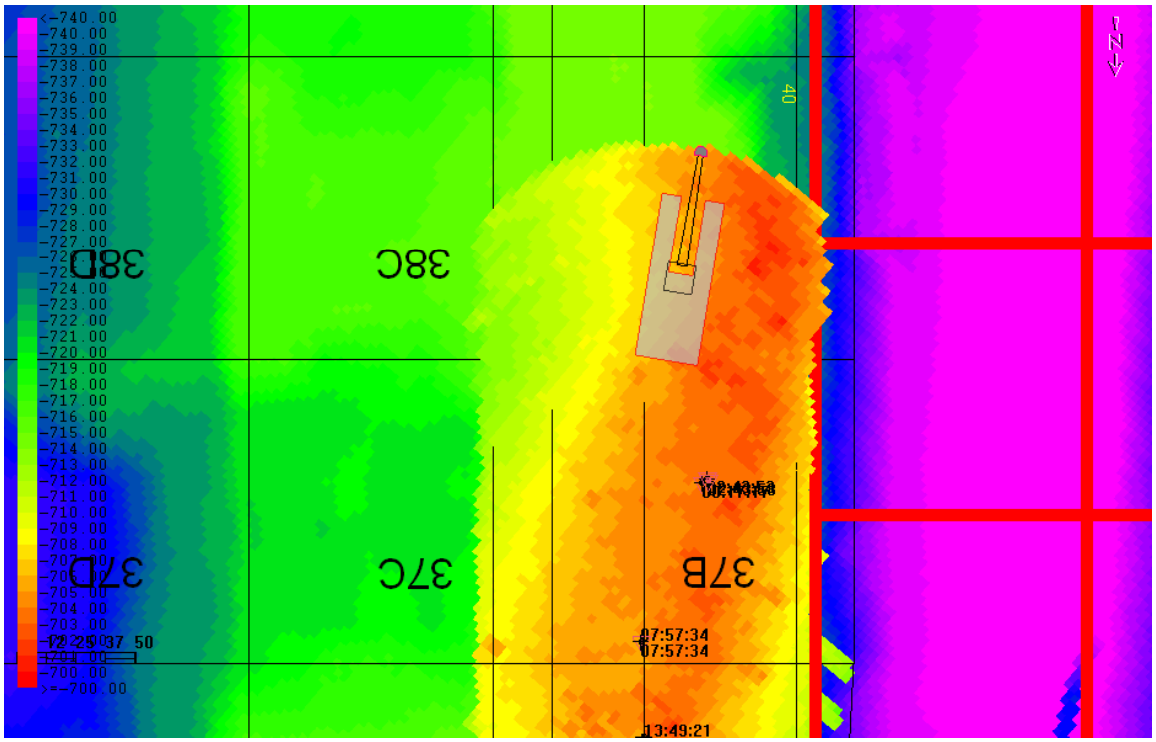
Comments:

211°-227°

X 2442968 Y 556903 — Rocks about 6" from grade

X 2442970 Y 556833 — all through the cut

Shirley eTrack
Day Shift 6/19/10



Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Day SATURDAY
Date 6-19-2010

Dredge SHIRLEY

Dredge Shift: Night 7pm-7am

Hours: 1928

Buddy / Damon

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
1910	1920	0	1.0					Service dredge
2000	21:40	1.40		5.0				High pressure hyd. Line blew on ladder to cutter motor
0240	0250	10	10					Clean pump (rock)
0300	0410	1.10	05					Tighten packing
0415	0600	145	05					STBD S/A
0605	0615	10	05					PORT S/A
0620	0645	25						LUNCH OUT
0700								
		5 20	1.25	5	Total Hours			

130X60X3 = 867 cy

Conditions:

Initial Flyash Thickness 3' Ft

Area Dredged: 38B-39B

Vegetation	Light	☐	Medium	☐	Heavy	☐	
Debris	Light	☐	Medium	☐	Heavy	☐	

# of Blockage Clears 1

Shift Start X 2442970 Y 556833

Shift End X 2442971 Y 556774

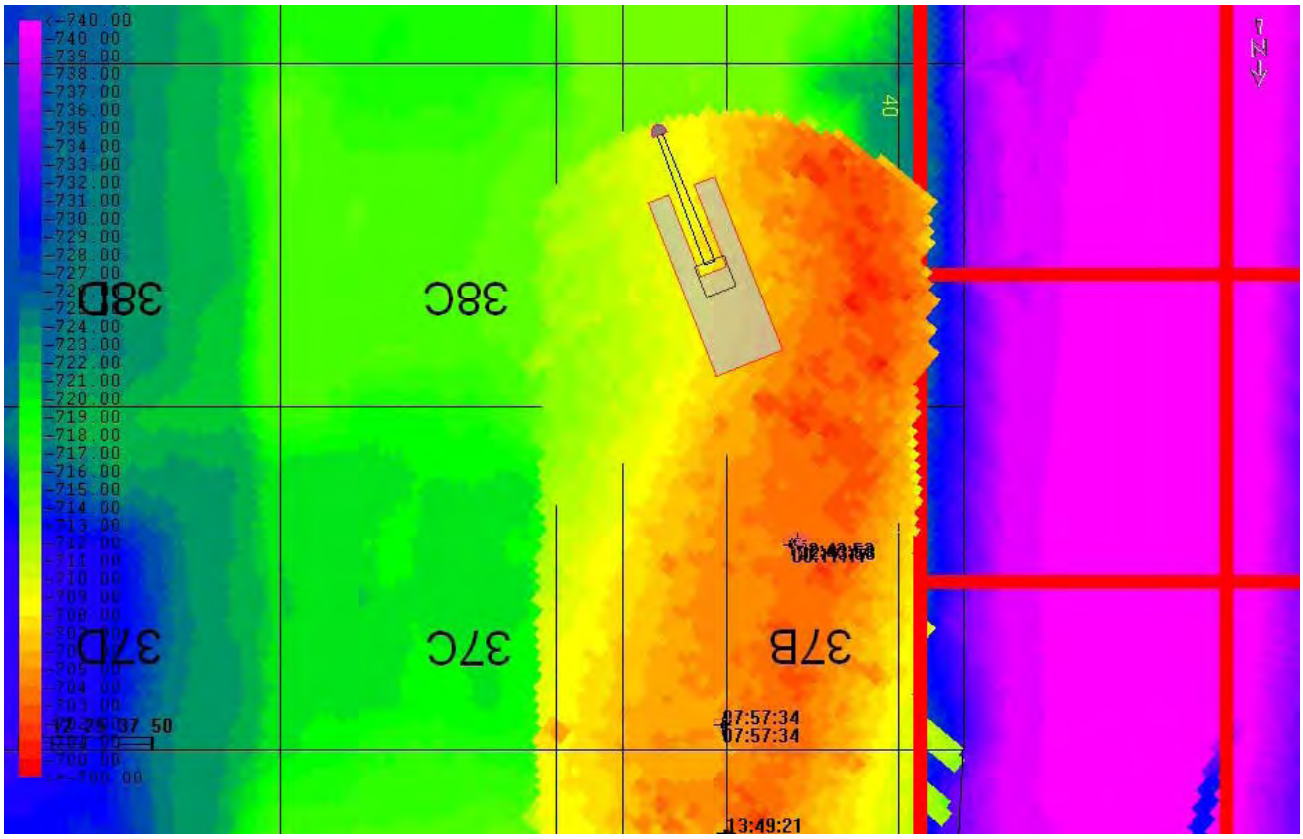
Tons Start 212700

Tons End 213433

733 TONS

Comments: Replaced 4 Cutter Teeth & 1 Dial Pin.

Shirley eTrack
Night Shift 6/19/10



Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Day: Sunday
Date: 6-20-10

Dredge: Shirley

Dredge Shift: DAY

Hours:

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
4:00	7:50	:40	:50		1650	78	JB-JB	Paper work, grease
8:30	8:55	2:15	:25					clean Pumps
11:10	11:20	:20	:10					clean cutter
11:40	12:10	4:20	:30					move swing Anchors (2)
16:30	16:45	0	:15					move swing Anchors (2)
16:45	17:05	:40	:20					Pull slack to Dredge
17:45	18:05	:45	:20					STBD Anchor Pull in
18:50								
		6 11	11:50		Run 9:00	Total Hours	Down 2:50	

Conditions:

Initial Flyash Thickness: 2-6 Ft 130 Feet wide ~~246 Feet~~ 114 Feet long

Area Dredged: 39-B

Vegetation: Light ☑ Medium ☐ Heavy ☐

Debris: Light ☑ Medium ☐ Heavy ☐

# of Blockage Clears: 2

Shift Start X 2442971 Y 556774

Shift End X 2442969 Y 556663

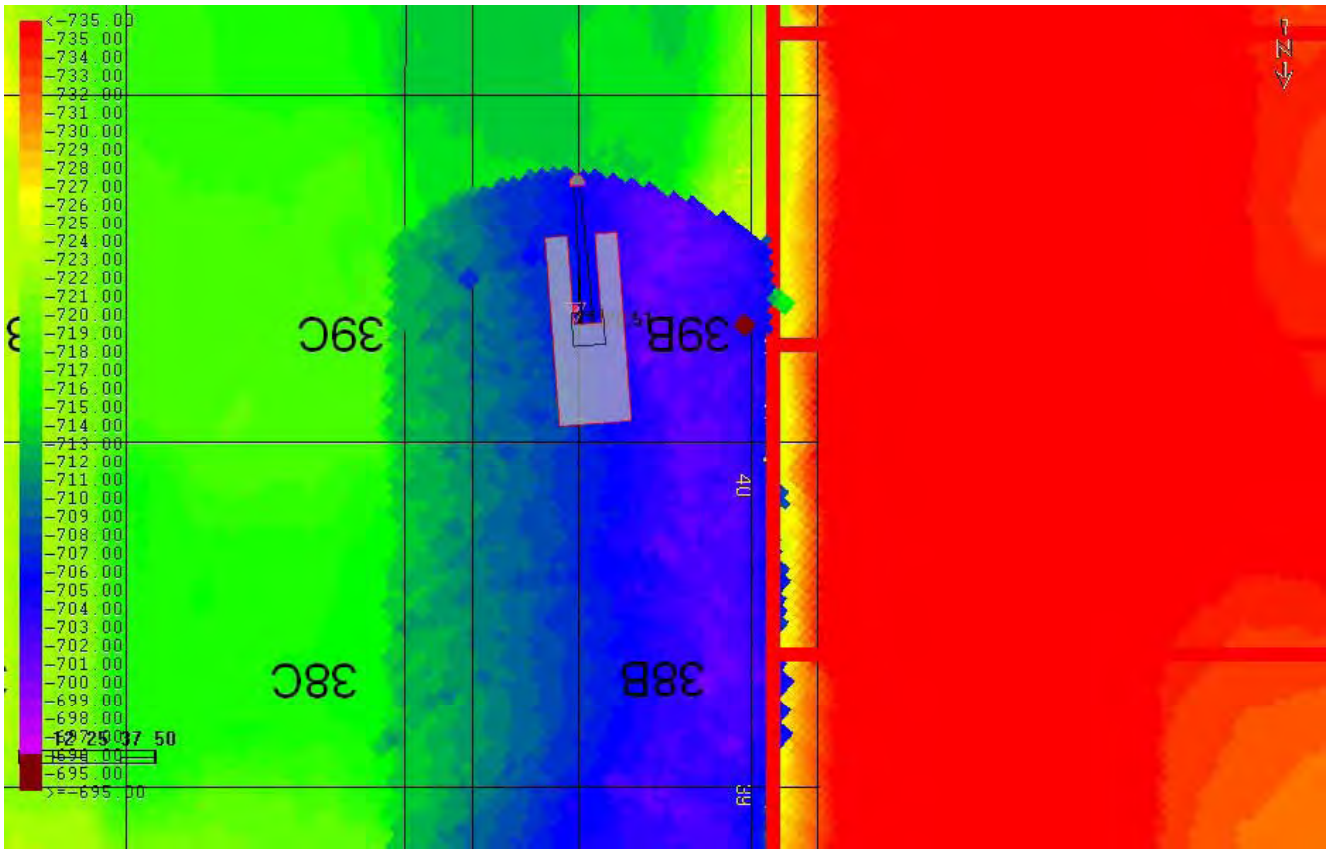
Tons Start

Tons End

Comments:

Center line to STBD corner is Hard Rock
can't get grade on Green line
Rock 1' to 2' getting to green Line
X 2442990 } can get grade All across cut
Y 556729 }

Shirley eTrack
Day Shift 6/20/10



Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Dredge SHIRLEY #1

Day FATHERS DAY

Date 6-20-2010

Dredge Shift: Night 7pm-7am

Hours: 1945

Buddy / Damon

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
1900	1930		1~~8~~0					Service dredge
2000	2000			1.10				Add packing - Send Studs to Shop to fix threads
2110	2355	2.45	15					Move STBD S/A
0010	0210	2.0	35					STBD S/A pulled in
0245	~~0330~~ 0255	10	15					Clean Cutter Cobble
0310	0645	3.35	15					
0700								
		8.30	2.20	1.10		Total Hours	12.0	

130 X 80 X 5 = 1926 C.Y. = 227 CYP

Conditions:

Initial Flyash Thickness 5' Ft

Vegetation Light ☐ Medium ☐ Heavy ☐

Debris Light ☐ Medium ☐ Heavy ☐

HARD MATERIAL

# of Blockage Clears 0

Area Dredged: 40B

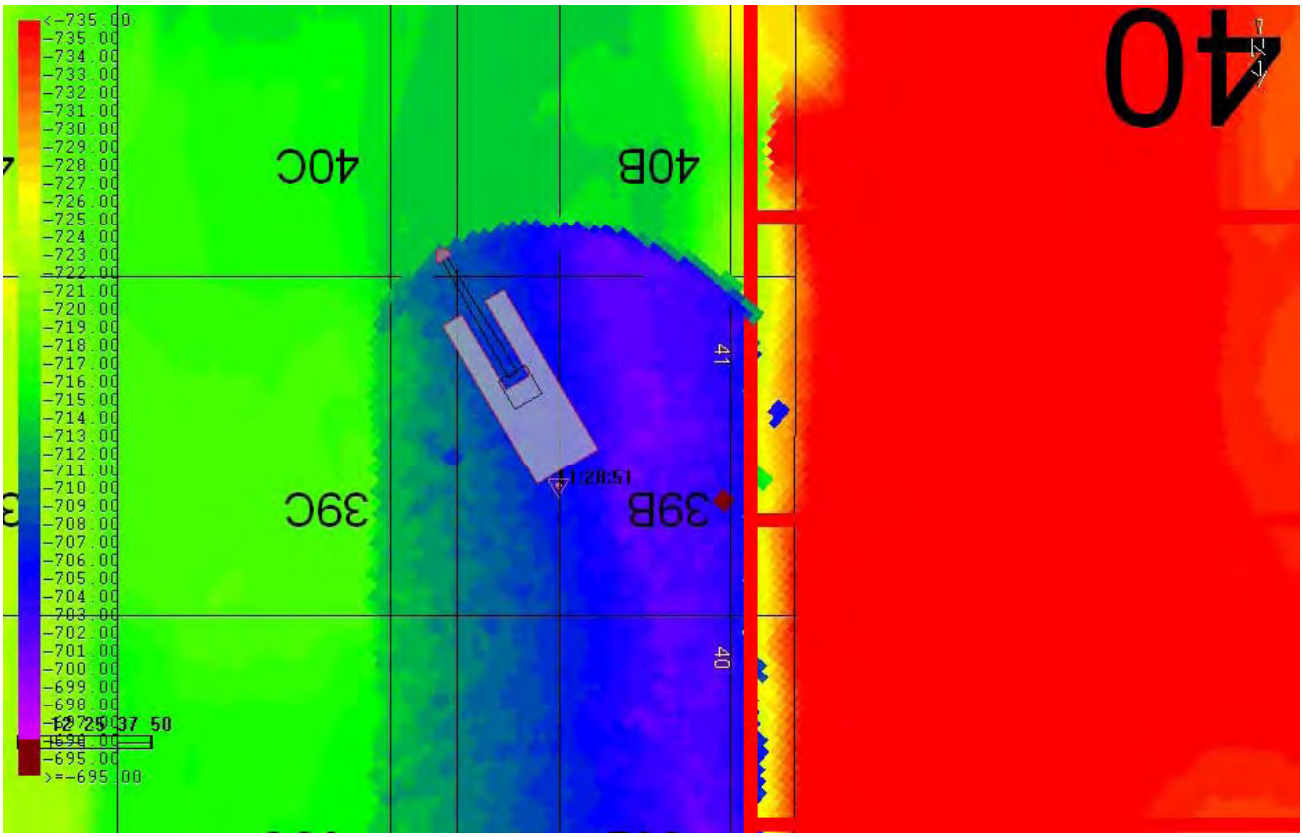
1887 TONS

Shift Start X 2442969 Y 556663

Shift End X 2442969 Y 556585

Tons Start 215500

Tons End 217387

Comments: NOTE: X 2442943 Y 556630 Large object (rock-log-IRON) Something 3-4 feet from green Line - or Final grade - Can move object around, but will not dig it.

Shirley eTrack
Night Shift 6/20/10