Agreement Log #: KIF-10-056

Time-Critical Concurrence

Area:
Emory River, Segment 5, A-24 and A-25, B-25 and B-26, C-23 through C-26, and D-25

Agreement:
Ash removal activities have been completed in Segment 5 for dredge grids A-24 and A-25, B-25 and B-26, C-23 through C-26, and D-25.

Documentation for completion of the grids includes a combination of a) results of post dredging bathymetric survey and b) dredge shift records indicating that dredging operations had reached refusal prior to the targeted depth which indicates that material too massive or durable to be hydraulically dredged, such as bedrock or native sediments, were encountered higher than projected from the U.S. Army Corp of Engineers pre-spill bathymetry.

a) The post dredging bathymetric survey on 5/23/10 has been used to calculate the depth between current surface and the modeled pre-spill river bottom for all the listed grids. The survey indicates that approximately 50% of the area was dredged to within 0 to 0.5 ft of targeted pre-spill surface.
b) The area was originally dredged by the *McKenzie 14"* dredge and then dredged again by the *Adelyn* 14" dredge. Both dredges are equipped with GPS and excavation controlling software for precision dredging to the pre-spill bathymetry which shows on the operators screens as and is mentioned as the "green line" in the dredge logs. The attached dredge shift reports document times and areas where the hydraulic cutter-head dredge met refusal in the attempt to reach targeted dredge depth in all listed grids.

These results indicate that there is no remaining recoverable ash in Segment 5 for dredge grids A-24 and A-25, B-25 and B-26, C-23 through C-26, and D-25.

Attachments:
Figure 5, Ash Remaining to Pre-Spill Surface Segments 1,2,3 and 5, dated 2/25/10
Figure 1, Ash Remaining Through Sevenson 05-23 Survey, dated 5/23/10
Figure 1, Bathymetry Removal Areas - Segment 5, 5/21/10
Segment 5, Daily Dredge Logs – *McKenzie* 4/16/10 to 4/26/10, & *Adelyn* 5/16/10 to 5/18/10

Concurrence Comments:

Julie L Pfeiffer — 5/26/10
Jacobs Project Manager — Date

Kathryn Nash — 5/27/10
Tennessee Valley Authority — Date

Leo Francisco — 5/27/10
U. S. Environmental Protection Agency — Date

Consulted w/ TDEC

Legend

Ash Remaining: ~438,592 cy

- 0 - 1 inch: ~32 cy
- 1 - 6 inches: ~1,315 cy
- 6 inches - 1 ft: ~3,602 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: ~91,785 cy
- 15 - 20 ft: ~62,820 cy
- > 20 ft: ~56,629 cy

Proposed Dredge Area

Area of Interest

DRAFT

0 300 600 Feet

1:1,800

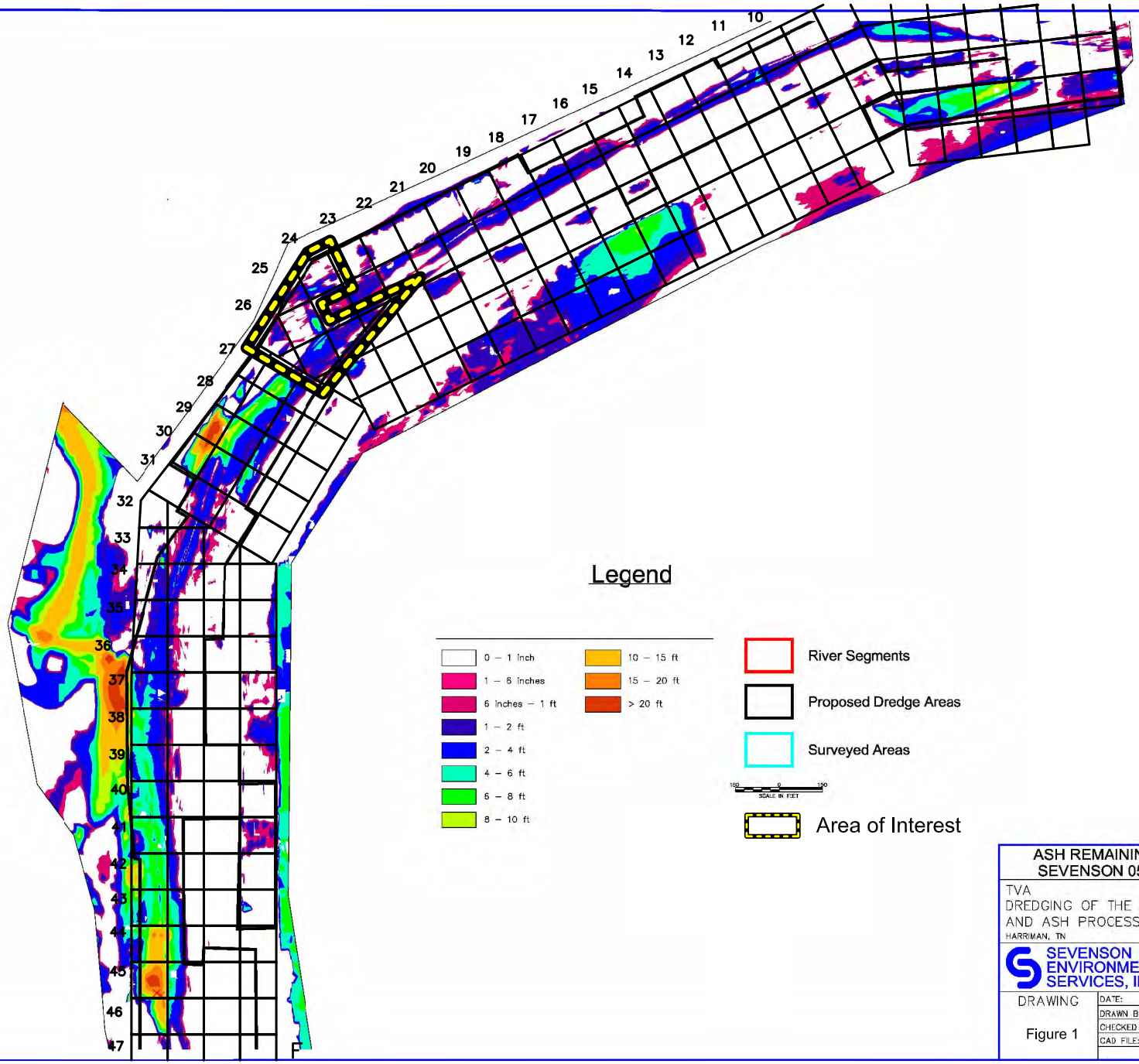
N

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 05-23 SURVEY

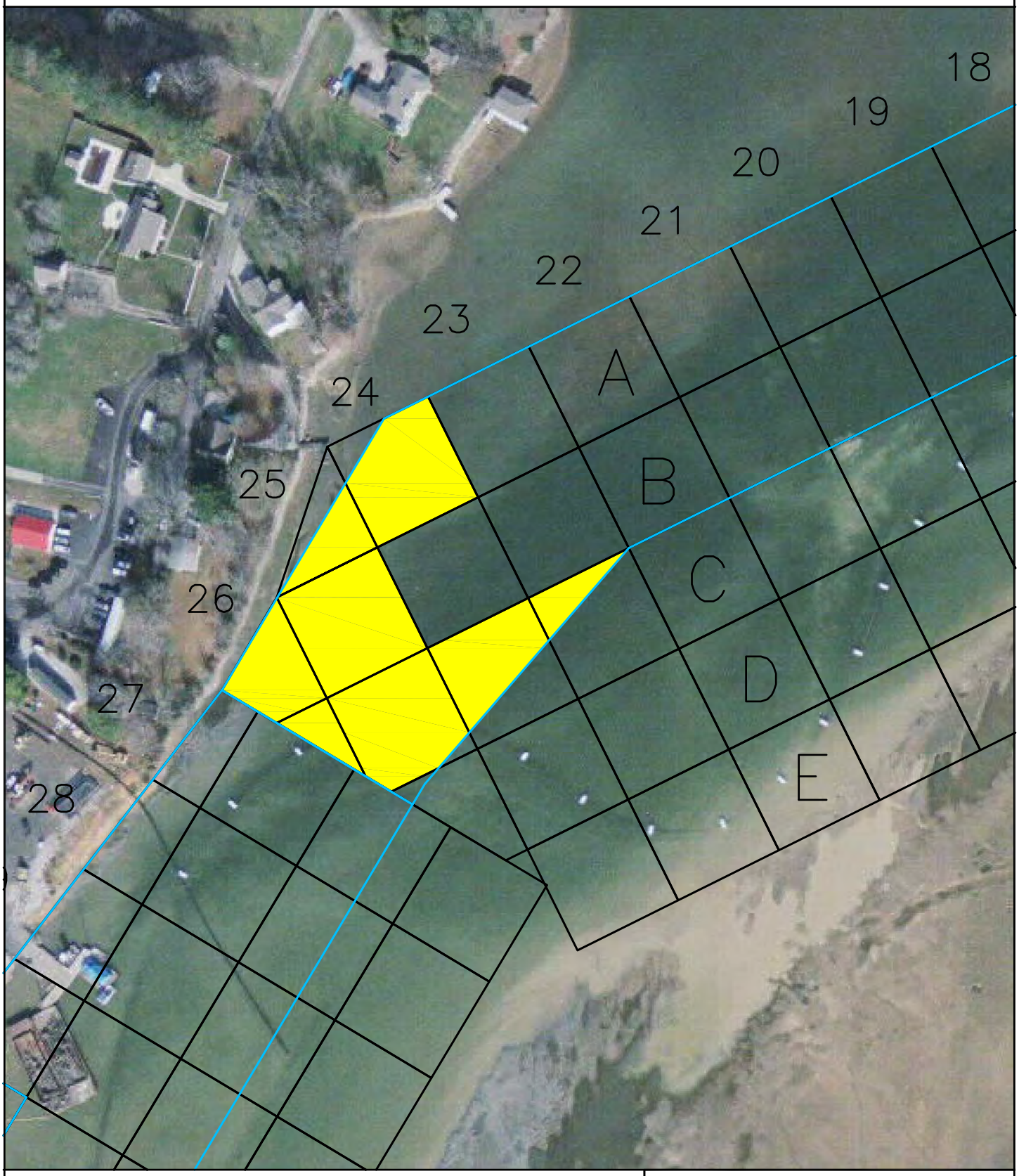
TVA
DREDGING OF THE EMORY RIVER AND ASH PROCESSING
HARRIMAN, TN

SEVENSON ENVIRONMENTAL SERVICES, INC.

DRAWING
Figure 1

DATE:	MAY 23, 2010
DRAWN BY:	DAB
CHECKED BY:	JB
CAD FILE:	volume remaining 0523 N

Bathymetry Removal Areas - Segment 5



Removed From Plan

Phase 2 Dredging Path

0 75 150 300

SCALE IN FEET

N

JACOBS™

05/21/10

Figure 1

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Dredge: McKenzie

Day: Friday

Date: 4-16-10

Dredge Shift: Day

Hours: 3468

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:05	7:15		1:30				Moose	Service Dredge 715-745 / wait on Booster 745-825
8:39	9:40	1:10	3:10					Flush line / refack Booster Pump
12:50	19:00	6:10			1750 RPM	72 psi		
		7:20	4:40					
						Total Hours	12.0	

Conditions:

Initial Flyash Thickness: 6 to 12 Ft

Area Dredged: 24B & 24A

Vegetation: Light ☐ Medium ☑ Heavy ☐

Debris: Light ☐ Medium ☑ Heavy ☐

# of Blockage Clears: 0

Shift Start X 2443563 Y 558379

Shift End X 2443557 Y 558402

Tons Start

Tons End

Comments:

330

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Day Friday

Date 4/16/10

Dredge Shift: Nights

Hours: 3478

McKenzie

Start Time	Stop Time	Hours Dredge	Hours Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:30	7:30	0	6½			Brian	checkout Dredge / Hydraulic oil low / grease
2:00	2:05	5 min	20 min				Add 2 Rounds of Packing to pump
2:25	2:40	25 min	1.20 min				Move Anchors
4:00	7:00	3 HR		1750	68		work on Spud cable / Replace checker Cable (Port)
							Wash out / Quit Time
		3½	8 30				

Total Hours 11 40

Conditions:

Initial Flyash Thickness 7/9/13 Ft

Vegetation Light ☐ Medium ☐ Heavy ☐

Debris Light ☐ Medium ☐ Heavy ☐

# of Blockage Clears 0

Area Dredged: 24A

Shift Start X 2443557 Y 558402

Shift End X 2443553 Y 558414

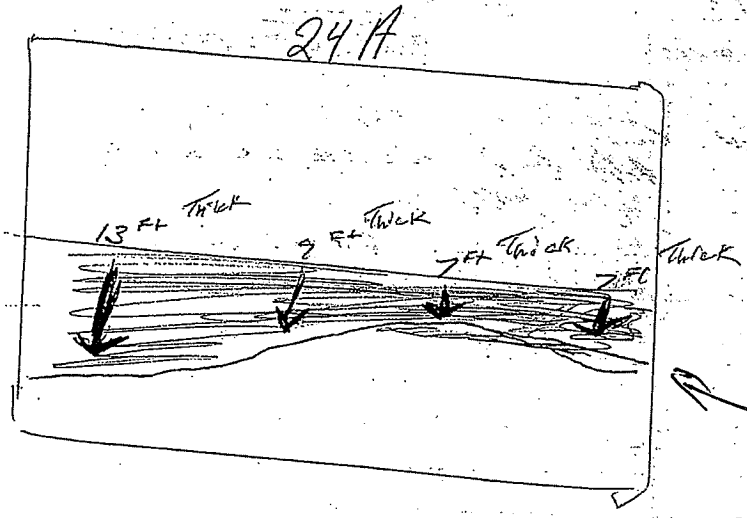
OVER

Comments:

At Start up Had To move Pipe out of way of cutter Head And Put Anchor on it
Had to add 10 (GAL) of Hydraulic oil
Had to add (2) rounds of Packing to Pump
From 7:30 PM to 2:00 AM to get the Pipe out of WAY / Heals with swing cable on (adeline)

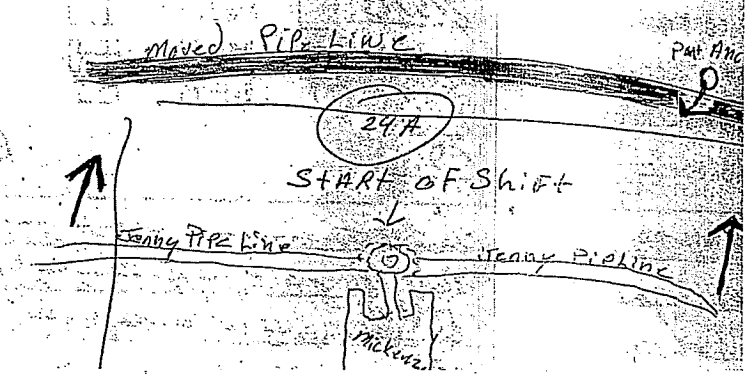
(B4)

McKenzie [signature]
4/16/10



Indicates dredging to river bottom

1. Move Pipe Put Anchor o
2. Repack Pump Add 2 PC
3. Add 10 GAL Hydraulic
4. Help with Adaline swing
5. Replace Port Checker cabl
6. Port spud Hard to get u
Full of water



Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Dredge: McKenzie

Day: Friday

Date: 4-23-10

Dredge Shift: Day

Hours: 3560

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:00	7:45		45					
7:45	10:00			215			Jimmy B	Safety Meeting Serviced Dredge
10:00	1:00	3			—			Repaired Pump
1:00	1:20			20	—			
1:20	16:20	3						Cleaned Cutterhead
16:20	16:40			20				
16 40	19:00	2 20						Serviced Computer
		8 20	45	255		Total Hours	12	

Conditions:

Initial Flyash Thickness: 6 to 8 Ft

Vegetation: Light ☐ Medium ☑ Heavy ☐

Debris: Light ☐ Medium ☑ Heavy ☐

# of Blockage Clears: 1

Area Dredged: 25B At 10 Ft

Shift Start X 2443468 Y 558245

Shift End X 2443456 Y 558259

Tons Start

Tons End

Comments:

Sevenson Environmental Services, Inc.

McKenzie

DAILY DREDGE LOG - TVA ASH REMOVAL

Day Friday

Date 4-23-2010

Dredge Shift: 7:30 P.M. 7:30 AM

Hours:

Start Time	Stop Time	Hours Dredge	Hours Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
	11:00						
11:30	12:00					Don & Hump	Maintenance - grease - check - Leak. Ladder Problems/Hyd. Leak
				Total Hours			

Conditions:

Initial Flyash Thickness _____ Ft

Vegetation Light ☐ Medium ☐ Heavy ☐

Debris Light ☐ Medium ☐ Heavy ☐

# of Blockage Clears _____

Area Dredged: 25-B

Shift Start X 2443456 Y 558259

Shift End X _____ Y _____

Comments: Shut Down the KYLee Came over to Run McKenzi's ADD Hyd Fluid - Fix Bolt on swing Shive - ADD 500 gallons of Fuel - Fuel Low

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - FYA ASH REMOVAL

Day Monday

Date 4-26-10

Dredge Mckenzie

Dredge Shift: Day

Hours: 3574

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:00	7:45		:45				Jimmy B	Safty Meeting Serviced Dredge
7:45	8:00		:	:15				waiting on Booster Pump
8:00	12:30	4:30						~~Booster Pump Cleaned Rockbox~~
12:30	1:00			:30				Booster Pump Cleaned Rock Box
1:00	3:00	2hrs	15min				Moose	Clean Booster rockbox / cutter on Dredge
3:15	15:30	15min	1hr 35min					Repack Booster Pump
17:05	18:05	1hr	20min					
18:25	18:45	20min						Flush Line Checked Cutterhead
		8:05	3:05	45		Total Hours	12.0	

Conditions:

Center 333

Area Dredged: 25B

At 10Ft

Initial Flyash Thickness 6 to 8 Ft

Vegetation Light ☐ Medium ☑ Heavy ☐

Debris Light ☐ Medium ☐ Heavy ☑

# of Blockage Clears 0

Shift Start X 2443457 Y 558259

Shift End X 2443444 Y 558285

Tons Start

Tons End

Comments:

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Dredge: Mckenzie

Day: Mon

Date: 4/26/10

Dredge Shift: Nights

Hours:

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:30	7:30	0		3 15				
10:45	10:55	5 min	1 HR					Check out Dredge / grease / Fix hydn-leak
11:55	12:15	20 min	5 min					Tighten packing on booster
12:30	1:15	45 min	10					Drain port spud and Fix oil boom over Cutterhead
1:25	3:30	25 min	1 HR					Computer is messed up try to fix
4:40	6:20	1 40 min	10 min					(Booster Pump) @ 3:30
6:30	7:05	35 min						Clean Rock Box
								End of shift
					Total Hours			

~~3h 30m~~ 5.5 / 2h 45min / 3h 15min

Conditions:

Initial Flyash Thickness 5 Ft

Area Dredged: 25 B

Vegetation Light ☐ Medium ☑ Heavy ☐

Debris Light ☐ Medium ☑ Heavy ☐

# of Blockage Clears 1

At 10ft

Shift Start X 2443444 Y 558285

Shift End X 2443433 Y 558323

Tons Start

Tons End

Comments:

Add 500 Gallons Fuel Port tank

Rent SHSD

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Day: Tuesday
Date: 4-27-10

Dredge: #2 McKenzie

Dredge Shift: Day

Hours: 3542

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:00	7:45		:45				Moose	Safty Meeting & Serviced Dredge
7:45	~~7:45~~ 9:25	—						Changing Packin in Booster Pump
9:25	12:45							Move Anchors 5th Anchor caught under log
~~13:35~~	16:00	3:15						MOVED DREDGE
18:00							Jimmy B	Moved Dredge
9:25	12:00	2:35						
12:00	12:45							MOVED ANCHORS
	18:00	1:00						
	19:30							
		~~2:35~~						
						Total Hours	12.0	

Conditions: 6' ~~6:00~~ 6:45 30'

Initial Flyash Thickness: 6 to 8 Ft

Vegetation: Light ☐ Medium ☑ Heavy ☐

Debris: Light ☐ Medium ☐ Heavy ☑

# of Blockage Clears: 0

Area Dredged: 25B + 21A

Center 60 ~~At 60 ft~~ At 7 Ft

Shift Start X 2443433 Y 558323

Shift End X 2443823 Y 558588

Tons Start

Tons End

Comments:

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Day: Sun
Date: 5-16-10

Dredge: Adelyn

Dredge Shift: DAYS

Hours: Main 929 Hyd. Eng. 1013

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:00	10:50	:40	3:50		1600	60	JMS.	Paper work, look Around, Booster, More Arkers (4)
11:30	14:30	:40	3:00					clean Dredge Pump + work on Booster
15:10	15:30	:20	:20					clean Dredge Pump
18:40		3:10						wash out
					Run 7:50	Total Hours	Down 7:10	

Conditions:

THIS ASH INTERVAL REMOVED IN POSSIBLY 2 SWEEPS.

Initial Flyash Thickness 1'-3' Ft 120' wide

Area Dredged: 25-L

Vegetation Light ☑ Medium ☐ Heavy ☐

Debris Light ☑ Medium ☐ Heavy ☐

# of Blockage Clears _____

Shift Start X 2443509 Y 558160

Shift End X 2443520 Y 558226

Tons Start N/A

Tons End N/A

Comments: Hard Bottom

05-25-10

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Day 3-16-10

Date Sunday

Dredge Adelyn

Dredge Shift: Nights

Hours: Main 936 Hyd 1024

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
	1900		1:30				JH	Service Dredge, waiting to get Stern Anchor move
2030	2130	1:00	:45		1		TOM	• Clean pump, Move Anchor Shortin swing
2215	2325	1:15	:25			7		• Clean pump
2340	0125	1:45	:55		9			Move Anchors X 4
0220	0320	1:00	3:40			9		• Clean pump / waiting to get stern Anchor pulled ou
7:00								would Not move Anchor
					0	P.		
					0	S.		• FREQUENT CLEANING OF Rock Box INDICATES
					0			ENCOUNTERING ORIGINAL RIVER BOTTOM.
					R.	I.		
					P.			
		5	7		M.	Total Hours	12	

Conditions:

Initial Flyash Thickness 3 1/2 Ft 3 SWEEPS FOR REMOVAL TO UNDERLYING BOTTOM. SINGLE SHIFT.

Area Dredged: 25 - B - 25 - C

Vegetation Light ☐ Medium ☐ Heavy ☐

Debris Light ☐ Medium ☑ Heavy ☐

# of Blockage Clears

Shift Start X 2443520 Y 558227

Shift End X 2443554 Y 558237

Tons Start

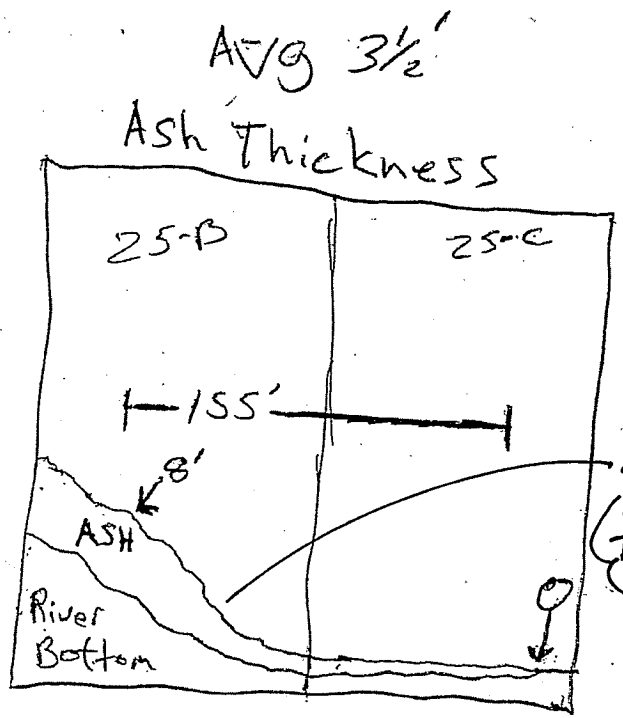
Tons End

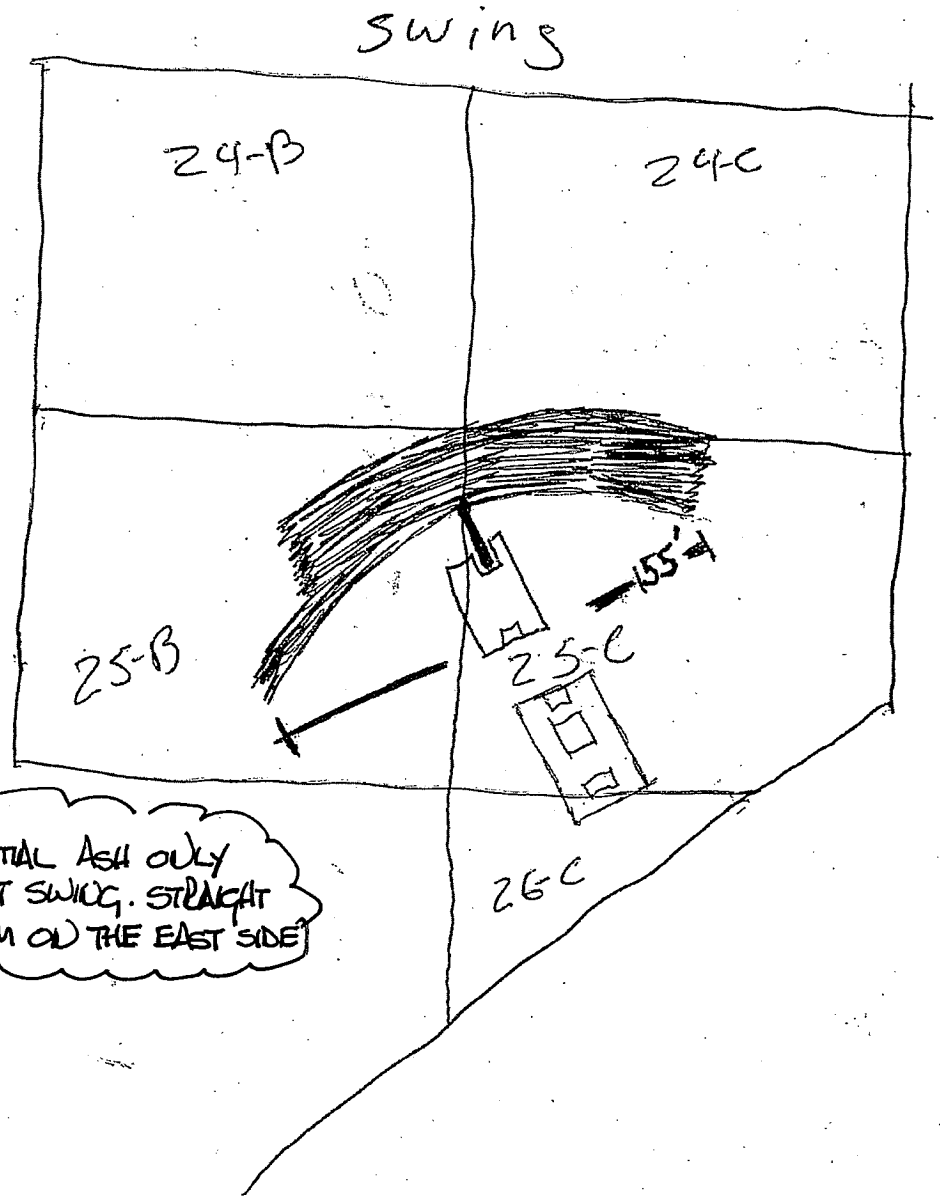
Comments: Main Engine Monitor Still Not Working!!

8r9y2y

05-26-10

Adelyn
night shift
5/26/10





SUBSTANTIAL ASH ONLY ON WEST SWING. STRAIGHT TO BOTTOM ON THE EAST SIDE

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Day: Mon
Date: 5-17-10

Dredge: Adelpa

Dredge Shift: DAYS

Hours: Main 943 / Hyd. Eng 1034

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:00	7:50	4:25	:50		1600	60	JWB	Paperwork, look around, Booster, Port stern Anchor
12:15	12:35	1:15	:15					clean Dredge Pump
13:50	16:30	~~2:40~~	2:20					Move Anchors (3), Bad weather
18:40		2:10						
					Run	Total Hours	Down	
					7:50		3:25	

Conditions:

Initial Flyash Thickness: 4-6 Ft (INTERNAL CAN BE REMOVED & SWEEPS TO BOTTOM.) 120 wide

Area Dredged: 24-C, 24-B, 25-B

Vegetation: Light ☐ Medium ☑ Heavy ☐

Debris: Light ☐ Medium ☑ Heavy ☐

# of Blockage Clears: _____

Shift Start X 2443554 Y 558239

Shift End X 2443578 Y 558281

Tons Start N/A

Tons End

Comments:

05-25-10

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Dredge: ADelyn

Day: MON DAY

Date: 5-17-10

Dredge Shift: Nights

Hours: M 953 H 1045

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
	19:00		1 Hour				Tom	Service Dredge
20:00	20:25	25m	25 min				Jason	clean Rock Box at Booster pump
20:40	22:30	2.10	40m					Clean Rock Box
23:10	01:10	2 H	4:00					Move DREDGE To New center Line
05:30	07:00	1:30			1900	70 PSI		
		6:5	5:55					

Total Hours 12 Hours

Conditions:

Initial Flyash Thickness _____ Ft

Vegetation Light ☐ Medium ☐ Heavy ☐

Debris Light ☐ Medium ☐ Heavy ☐

# of Blockage Clears _____

Area Dredged: 24-B -25-B - 24-C

Shift Start X 2443578 Y 558281

Shift End X 2443581 Y 558300

Tons Start X 2443523 Y 558299

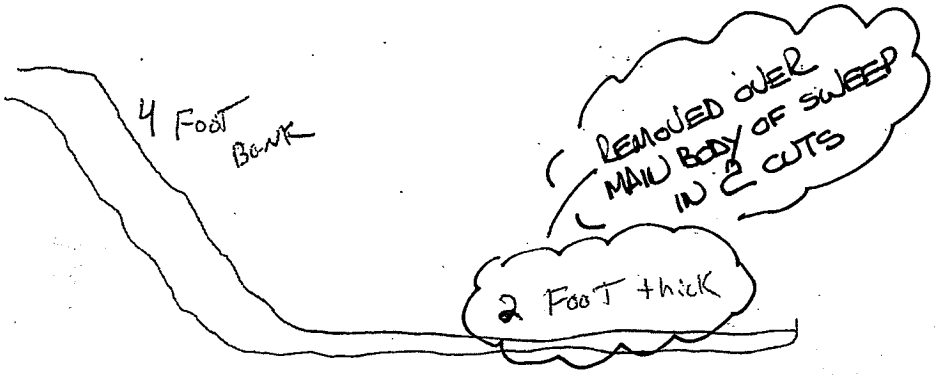
Tons End X 2443512 Y 558316

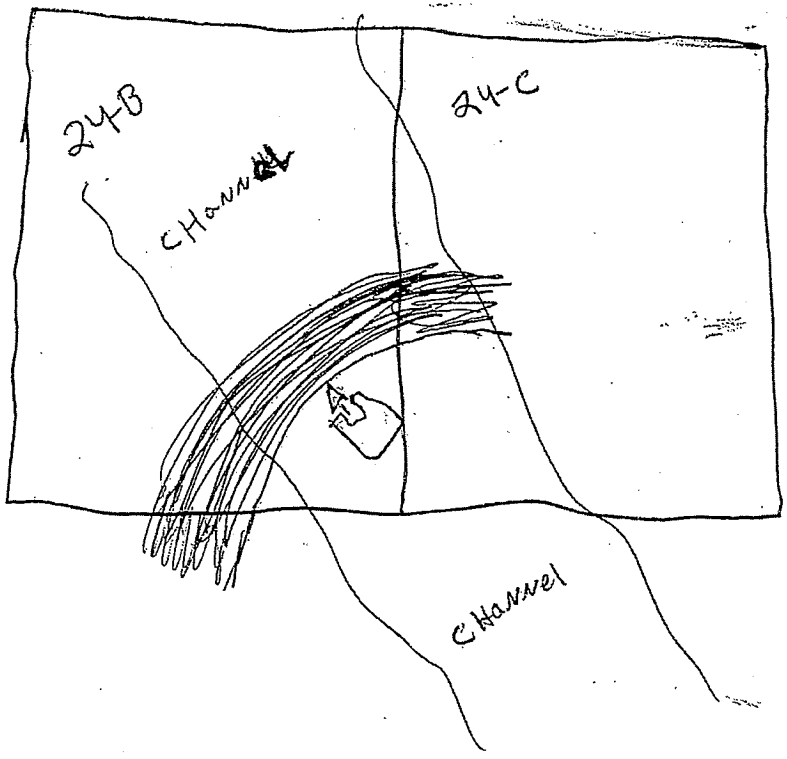
Heading North

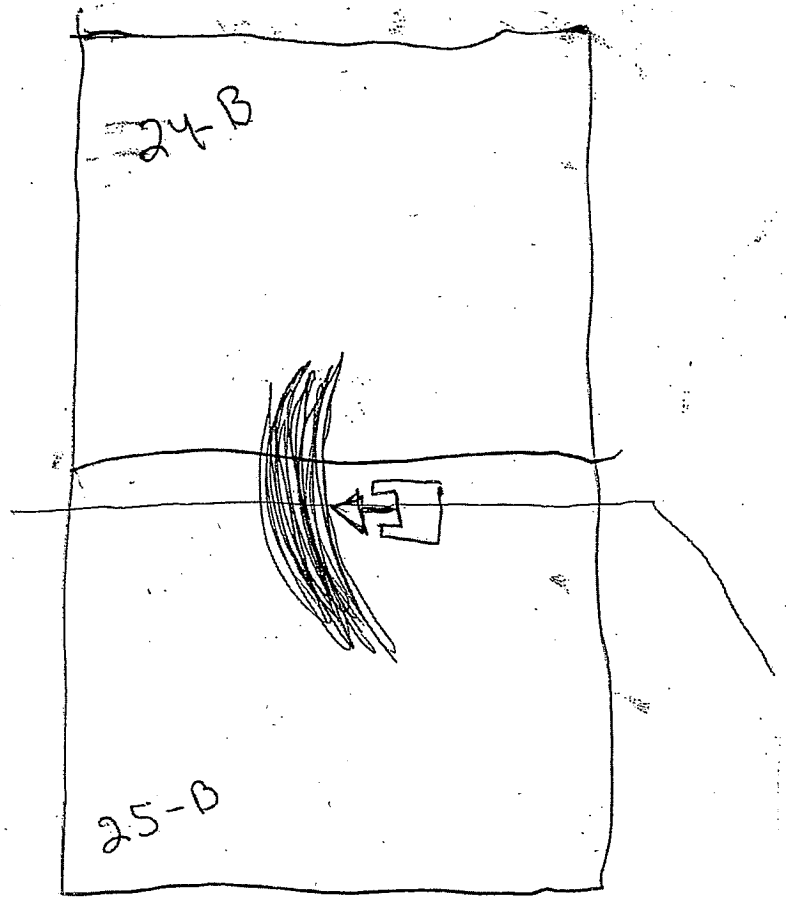
Comments:

05-25-10

Adelyn
night shift
5/17/16







Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Dredge: Adelyn

Day: Tue.

Date: 5-18-10

Dredge Shift: DAYS

Hours: Main 959 Hyde Eng. 1056

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
7:00	7:50	2:10	50	+	1600	60	[illegible]	Paper work, look around, Booster
10:00	10:55	1:55	:55	—				move Ankers
12:40	12:55	:10	:15	—				• Clean Pump
13:05	13:20	:25	:15	—				• Clean Pump
13:45	14:00	:15	:15	—				• clean Pump
14:15	14:30	:30	:15	—				• clean Pump
15:00	15:15	1:10	:15	—				• Clean Pump
16:25	16:40	1:00	:15	—				• Clean Pump
17:40	18:00	:20	:20	—				• clean Pump
18:20	18:35	:20	:15	—				• clean Pump
18:40		:05						
					Run	Total Hours	Down	

Rocks

• INDICATES HITTING UNDERLYING RIVERBED DUE TO HIGH CONCENTRATION OF ROCKS

~~6:10~~ 8:15

~~3:10~~ ~~4:00~~ 3:50

Conditions:

Initial Flyash Thickness 4-8 Ft

Vegetation Light ☐ Medium ☑ Heavy ☐

Debris Light ☐ Medium ☑ Heavy ☐

# of Blockage Clears

Area Dredged: 24-B-25-B

Shift Start X 2443512 Y 558316

Shift End X 2443487 Y 558371

Tons Start N/A

Tons End

Comments:

Rocks Rocks Rocks

5711
15

111

05-25-10

Sevenson Environmental Services, Inc.

DAILY DREDGE LOG - TVA ASH REMOVAL

Day Tues Day

Date 5-18-10

Dredge ADELYN

Dredge Shift: Nights

Hours: M 970 H 1067

Start Time	Stop Time	Hours Dredge	Misc	Mech Down	Avg RPM	Avg Pressure	Operator	Reason for Stopping/Downtime
	19:00		7:40				Tom	Service Dredge waiting to move Anchors
02:40	03:00	20m		10			Jason	Rock Box
03:10	04:50	2 H	20m					Rock Box
05:10	07:00	1H50m						
					1900	70 PSI		
		4H10m	8		Total Hours		12	

Area Dredged: 25A -24A

Conditions:

Initial Flyash Thickness _____ Ft

Vegetation Light ☐ Medium ☐ Heavy ☐

Debris Light ☐ Medium ☐ Heavy ☐

# of Blockage Clears _____

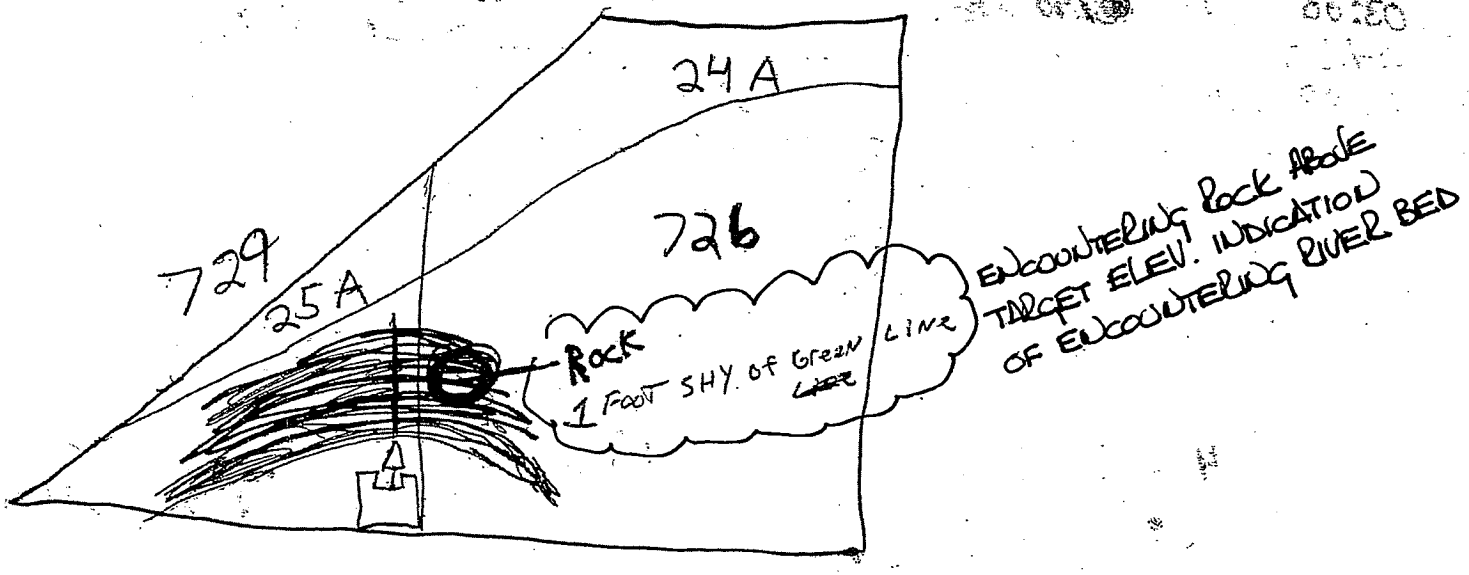
Shift Start X 2443486 Y 558372

Shift End X 2443474 Y 558396

Tons Start _____ Tons End _____

Comments:

(During Down time) Repacked pump 5 pieces of packing put in. Service water pump tightened packing greased it. Cleaned cab washed all windows. wiped any grease and oil off anything we could. Main Engine moniter is not working.

05-25-10

Adelyn
night shift
5/18/10