Tennessee Valley Authority
Regulatory Submittal for Kingston Fossil Plant

Documents submitted:
Ball Field Reconfiguration Work Plan

Date Submitted:
02/25/2010

Submitted to whom
Leo Francendese

Concurrence

Received	Not Applicable	TVA
☒	☐	Mike Scott MWS
☒	☐	Steve McCracken
☒	☐	Kathryn Nash KAN
☒	☐	Dennis Yankee DWY
☒	☐	Michelle Cagley MC
☒	☐	Tom Spurlock – via email
☐	☐	_____

Received	Not Applicable	Jacobs
☒	☐	Steve Richardson
☒	☐	Julie Pfeffer
☐	☐	_____
☐	☐	_____
☐	☐	_____
☐	☐	_____

Approvals

TVA S H McCracken Date 2/25/010

EPA Leo Francendese Date 2/25/10

Consulted w/ TDEC

cc:

- ☒ Anda Ray, TVA
- ☒ Barbara Scott, TDEC
- ☒ Leo Francendese, EPA
- ☒ Mike Scott, TVA
- ☒ Dennis Yankee, TVA
- ☒ Kathryn Nash, TVA
- ☒ Cynthia Anderson, TVA
- ☒ Steve McCracken, TVA
- ☒ EDM
- ☒ Julie Pfeffer, Jacobs
- ☒ Steve Richardson, Jacobs
- ☒ Michelle Cagley, TVA
- ☒ Greg Signer, TVA
- ☒ KIF Incident Document Control
- ☒ Katie Kline, TVA
- ☒ Gretchen Wahl, Jacobs
- ☒ Dannena Bowman, EPA
- ☒ Jeff Gary, Jacobs
- ☒ Robert Pullen, Jacobs

Ballfield Reconfiguration Work Plan

1. Background

In the last few weeks, there have been several contributing factors that have raised a safety issue in the ballfield. Excessive rains have limited the ability to move material out of the ballfield to storage in the test embankment. These same rains have caused days to pass with no trains being loaded. Rains in Alabama have kept trains from being unloaded, limiting the availability of empty cars at Kingston. A derailment of a train in Chattanooga (not related to the Kingston Ash Recovery Project) in early February also delayed the availability of empty cars. Rains have also caused the roads in the ballfield to become, at times, impassible. Rains cause the piles of ash to spread, bringing excessive ash into the passageways in the ballfield.

In addition, a concerted effort by the dredging contractor at the end of January resulted in numerous high production days from the dredges. This material accumulated in the ballfield and adjacent to the sluice trench, further hampering efforts to process and load in the ballfield as well as remove material from the sluice trench. The dredging production is anticipated to continue to be high for several months. The large dredge has been removed from production, but three smaller dredges are coming on line to replace that capacity. When they are all on line, production will again reach high levels.

Finally, a new rail spur is being constructed through the ballfield. Although eventually, the space taken by the new spur should be replaced by reclaimed space on Track 2, during construction a large area of the ballfield is no longer available for storage and processing. This causes ash in this area to be placed on top of ash already present.

The ramification of the excess water and ash in the ballfield is difficult working conditions. Equipment and personnel become stuck in the ash/water. Equipment can become unstable. Certain routes that are used to move material are no longer available.

2. Objectives

A plan is being developed to reduce dredging long enough to improve conditions in the ballfield from a safety and operations perspective. During this time of reduced dredging, efforts to improve the free water volume in the ash pond will also be enhanced.

Achieving these two objectives, improved safety and productive configuration of the ballfield and improvements to the ash pond free water volume should provide more assurance that the time critical schedule can be met. As conditions in the ballfield improve as monitored through daily assessments, additional dredges will be put in operation.

3. Construction-Ballfield

The first activity necessary was to install slurry pumps to remove the slurry that is accumulating in the entrance to the ballfield (occurred February 7). The slurry is being pumped to the rim ditch. Bulldozers are being used to push slurry to the pumps. As improvements to the ballfield occur, an emphasis will be placed on opening up drainageways and protecting the pipes that exist.

Even with the pumps, very sloppy ash will remain in the low areas of the ballfield including the roads which are used to haul material to the train load piles. Critical to improving the ballfield is the use of lime to treat the sloppy material. Initially lime will be brought to the entrance of the ballfield and mixed into the sloppy ash to dry that ash. Pelletized lime will also be brought to the former Genesis pad and stockpiled. The lime will then be moved into the roads of the ballfield and placed using existing heavy equipment. It will be mixed with the equipment or the Brown Bear roto-tiller. As the sloppy ash is treated and dried, it will be brought to the load piles to be placed in a train. Once the sloppy material is removed, the elevation of the roads will be repaired and then stabilized with lime. Additional treatment will be necessary after rain events. Drainage from treatment areas would be towards the rim ditch, sluice trench, or ash pond and away from other surface water drainages. The amount of lime to use will be estimated on the basis of 6% by weight for the volume of ash requiring treatment. The actual lime weight added will be tracked as well as the weight of treated ash disposed. As the roads are improved, the adjacent drainage ditches will be re-estabilished.

Some of this activity may occur on night shift. Additional lighting will be provided, where needed. Additional staffing including construction management and safety professionals will be assigned to oversee and manage night shift activities.

The initial effort will be to improve the condition of the entrance to the ballfield. Once the entrance is improved, dry ash will be removed from the ballfield and taken to the test embankment (when available), the west storage area, the valley area, and/or the drainage areas inside the dredge cell. The material removed will be dry to allow for stacking in one foot lifts (west, test, and relic) or in piles (valley). However, it will likely be at the upper end of moisture content for loadable material (around 28%), saving the ash that is 20-27% moisture content for the trains. A significant effort will be made on days the weather allows dry stacking and a night shift will be applied to improve the volume of material removed. Again, as necessary, additional lighting will be provided. It is anticipated that between 60,000 and 80,000 cy of ash may be moved out of the ballfield in roughly 9 days. Efforts will be made to improve these numbers if the weather holds and the increased hauling will continue into the future. If the weather impedes storage activities, lime may be used in the storage areas to improve the base condition of the stack.

While the entrance is being improved, an effort will be made to truck dry ash to re-establish the train loading piles. Any treated ash will be preferentially moved to the load piles. As much ash as possible will be brought to the piles so loading can continue in less than desirable conditions, much like was possible before the final push for dredging. Plastic covers may be used for these piles.

Once the entrance is improved, effort to treat the sloppy ash and improve the roads will proceed into the ballfield. To allow train loading, it is most likely that only one area of the ballfield will be worked at a time.

The sluice trench area has been accumulating ash recently because the ballfield is too full to allow continuous hauling of the ash. Lime can also be used at the sluice trench area to dry the ash. Any treated ash will be taken directly to the load piles. Lime will be mixed into the ash using excavators and other heavy equipment. Material excavated from the ash pond (see below) will be brought to the sluice trench area for treatment.

During lime treatment, pH monitoring of the dewatering system will be enhanced. In addition to the fixed pH monitoring results in the stilling pond and the ash pond, pH readings

will be obtained of every sample taken for TSS analysis from the rim ditch, sluice trench, and ash pond. These readings began before the lime treatment activity and will continue until one week after lime treatment ceases.

To protect against an unintended release of lime to adjacent surface water bodies, an acid deployment system will be built and a vendor with acid in stock in chemical totes similar to those used for the polymer will be identified. The totes could be direct shipped and be on site within a day of the request. The acid would not be stored onsite due to additional risks.

All equipment is available on site to setup a mobile acid delivery system. The containment system used for the polymer bins can be adapted for the acid. A separate chemical application station for treatment with a dedicated delivery system can be constructed. Dedicated tubing and a peristaltic pump system with double containment from bin to trench will be some of the design criteria. There are multiple pH meters available on site to provide data for adjusting the application rate.

The development of safe protocols for operation will be completed prior to arrival of the acid. Only operators experienced with acid will be used.

While the improvements to the ballfield are occurring, there are several operations that may be impacted. First, the rail spur construction within the ballfield will be suspended for a week. The area of the spur is critical to be used as a roadway to allow trucking while the existing roadways are repaired. The area will remain open so work done to date is not wasted but new construction will wait until the roads are repaired. Second, repairs of the piezometer monitoring system are underway. These repairs are crucial so the underlying condition of the ash can be monitored. These repairs will continue so coordination between improvements and the repair activities is necessary.

Once the above activities are achieved during the outage, efforts will then turn to reconfiguring the processing element of the ballfield to improve operations in the future. The ability to reconfigure the ash in time of reduced dredging depends on the amount of ash that can be removed from the ballfield. Reconfiguration can consist of installing additional access roads, moving piles of ash to other locations, or creating windrows or storage areas. More than likely, these reconfiguration activities will occur over the weeks after the initial improvements are made.

4. Construction-Ash Pond

During reduced dredging, efforts to restore the free water volume in the ash pond will occur. Recently, the plan to run the 10-inch ash pond dredge 12 hours a day is being put in place. This allows the dredge to send material to the lateral expansion area 12 hours a day and allows the area to settle the ash for the other 12 hours. This effort was reviewed and approved by Stantec. The effort to achieve 12 hours of dredging, 6 days a week will continue. During the outage, pond dredging will occur on the second Sunday also.

Also, the 12-inch or 14-inch dredge flows to the filter presses. This operation will continue 24 hours a day, 6 days a week. The presses will not operate on Sundays to provide needed maintenance.

A new activity will begin. Up to two amphibious trackhoes will be placed into the solid portion of the ash pond, near the south dike of the shore. These trackhoes will pile ash in the pond until the ash is above the water table. Then, they will load the partially drained ash into trucks for transport to the sluice trench lime operation. This operation will resemble the ash removal operation in the settling basins, just west of Dike 2. It is anticipated that up to 500 cy of ash can be removed from the ponds each day.

Finally, there will be a significant effort to clean out the rim ditch and sluice trench using excavators and clamshells once there is room in the ballfield. Preferential areas for ash placement will be identified, once available, to minimize the impact from the wet ash on dryer ash.

5. Schedule

A schedule has been put together for the efforts needed to support reconfiguration of the ballfield. It is attached. Rain is anticipated on February 9.

One dredge was started on February 8 with the remaining three dredges incrementally coming on line as conditions improve. Four dredges are anticipated to be operational the week of February 15. Lime treatment is anticipated to begin on Wednesday, February 10th, in the entrance, with hauling occurring as soon as possible.

Dipping directly from the ash pond will begin upon plan approval and continue as long as the effort is productive. Sluice trench treatment with lime will begin after the rains on the February 9th.

6. Waste Management

These activities will not generate any new waste streams. The landfill is already approved to receive 6% lime. All treated material will be added to load piles with untreated material. Even if the amount of lime added to some ash is at 9%, it only has to be put with half that amount of untreated ash to be below the required limits. The lime weights will be tracked to ensure that no train with greater than 6% lime added is sent to Alabama.

7. Health and Safety

As discussed above, improved safety of personnel and equipment in the ballfield as well as improved operations are the reasons for this effort. Until the ballfield conditions are improved, extra care is required when working or traveling in the ballfield. There are rescue mats available for personnel stuck in the ash.

Considerable equipment will be in the ballfield. Flaggers should take care to stay out of the way of the equipment and to maintain eye contact with operators at all times. Flaggers will have solid areas built for them to stand. The equipment operators will need to be aware of other equipment nearby. Truck traffic will be routed every day depending on road conditions.

There are protocol for personnel in the ballfield. These protocols are presented on the JSAs and include distance requirements from piles of ash, the use of a buddy system, and checking in with one of the Jacobs CMs prior to entering the ballfield.

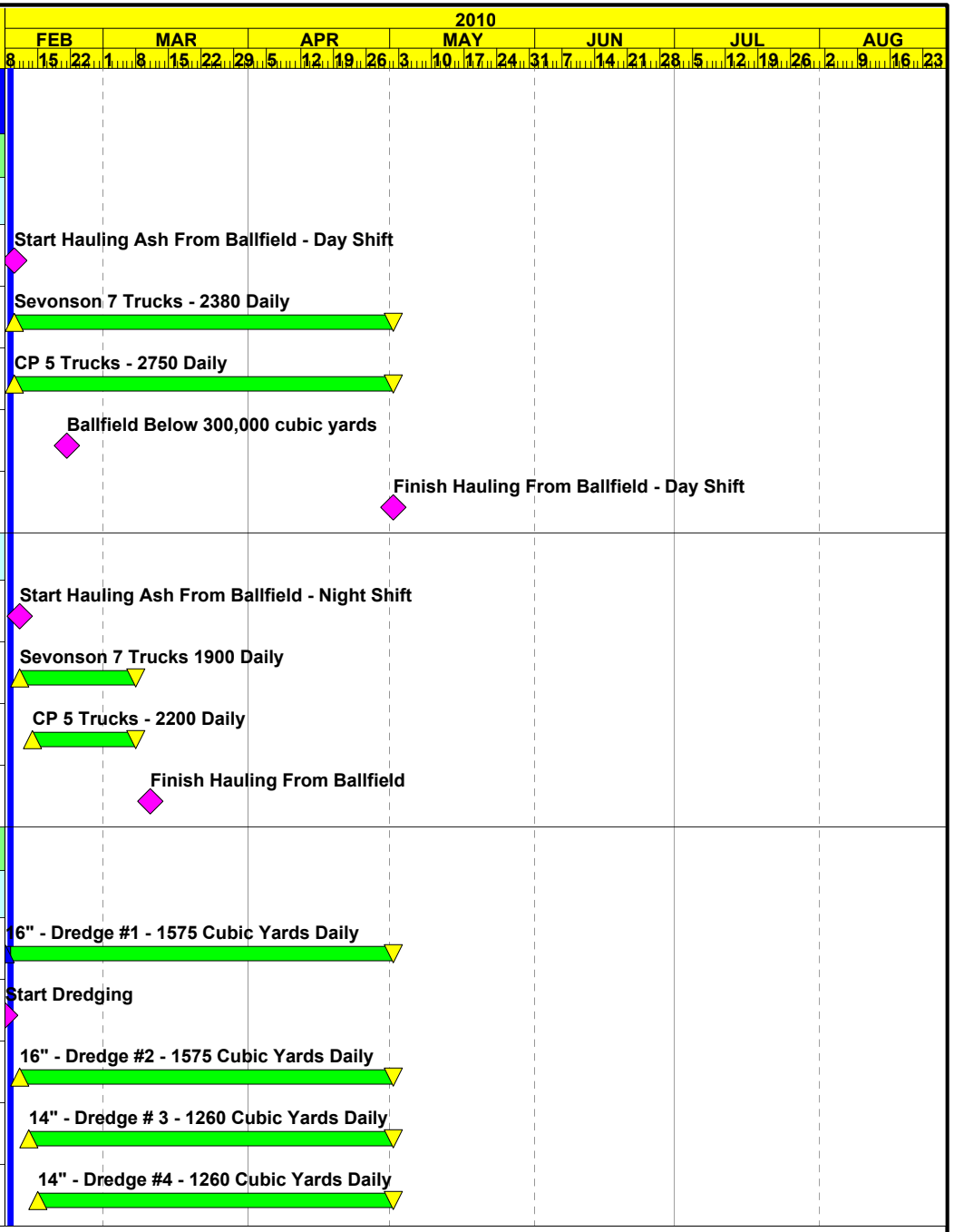
In all cases, personnel shall follow the site safety and health plan. Additional night shift health and safety support will be provided.

Ball Field Outage

- Sevenson hauls from Ball Field with seven (7) trucks, day shift, starting 2/10/10.
- Sevenson hauls from Ball Field with seven (7) trucks, night shift, starting 2/11/10 and ending 3/7/10.
- CP hauls from Ball Field with five (5) trucks, day shift, starting 2/10/10.
- CP hauls from Ball Field with five (5) trucks, night shift, starting 2/14/10 and ending 3/7/10.
- CP hauls from Ball Field to trains with five (5) trucks, day shift only.
- Sevenson has five (5) dredges operating by 3/01/10. All dredging complete by 5/1/10.
- CP dredges with 10" in Ash Pond to Lateral Expansion until 3/08/10.
- Start delivering Lime for Ball Field on 2/10/10.
- Ball Field below 300,000 cubic yards by 2/21/10.
- Total hauled from Ball Field to Storage is **506,480 cubic yards**.

BALL FIELD PROCESSING OUTAGE

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish
Hauling Ash To Dry Storage						
Day Shift						
HA100	Start Hauling Ash From Ballfield - Day Shift	0	0	0	10FEB10*	
HA125	Sevonson 7 Trucks - 2380 Daily	81	81	0	10FEB10	01MAY10
HA150	CP 5 Trucks - 2750 Daily	81	81	0	10FEB10	01MAY10
HA110	Ballfield Below 300,000 cubic yards	0	0	0	21FEB10*	
HA175	Finish Hauling From Ballfield - Day Shift	0	0	0		01MAY10
Night Shift						
NHA110	Start Hauling Ash From Ballfield - Night Shift	0	0	0	11FEB10*	
NHA135	Sevonson 7 Trucks 1900 Daily	25	25	0	11FEB10	07MAR10
NHA160	CP 5 Trucks - 2200 Daily	22	22	12	14FEB10	07MAR10
NHA180	Finish Hauling From Ballfield	0	0	0		10MAR10
Dredging						
Day Shift						
DR210	16" - Dredge #1 - 1575 Cubic Yards Daily	82	82	0	08FEB10A	01MAY10
DR200	Start Dredging	0	0	100	08FEB10A	
DR225	16" - Dredge #2 - 1575 Cubic Yards Daily	80	80	0	11FEB10	01MAY10
DR230	14" - Dredge # 3 - 1260 Cubic Yards Daily	78	78	0	13FEB10	01MAY10
DR240	14" - Dredge #4 - 1260 Cubic Yards Daily	76	76	0	15FEB10	01MAY10



Start Date 08FEB10
Finish Date 01MAY10
Data Date 09FEB10
Run Date 09FEB10 15:30

Early Bar
Progress Bar
Critical Activity

BFPO

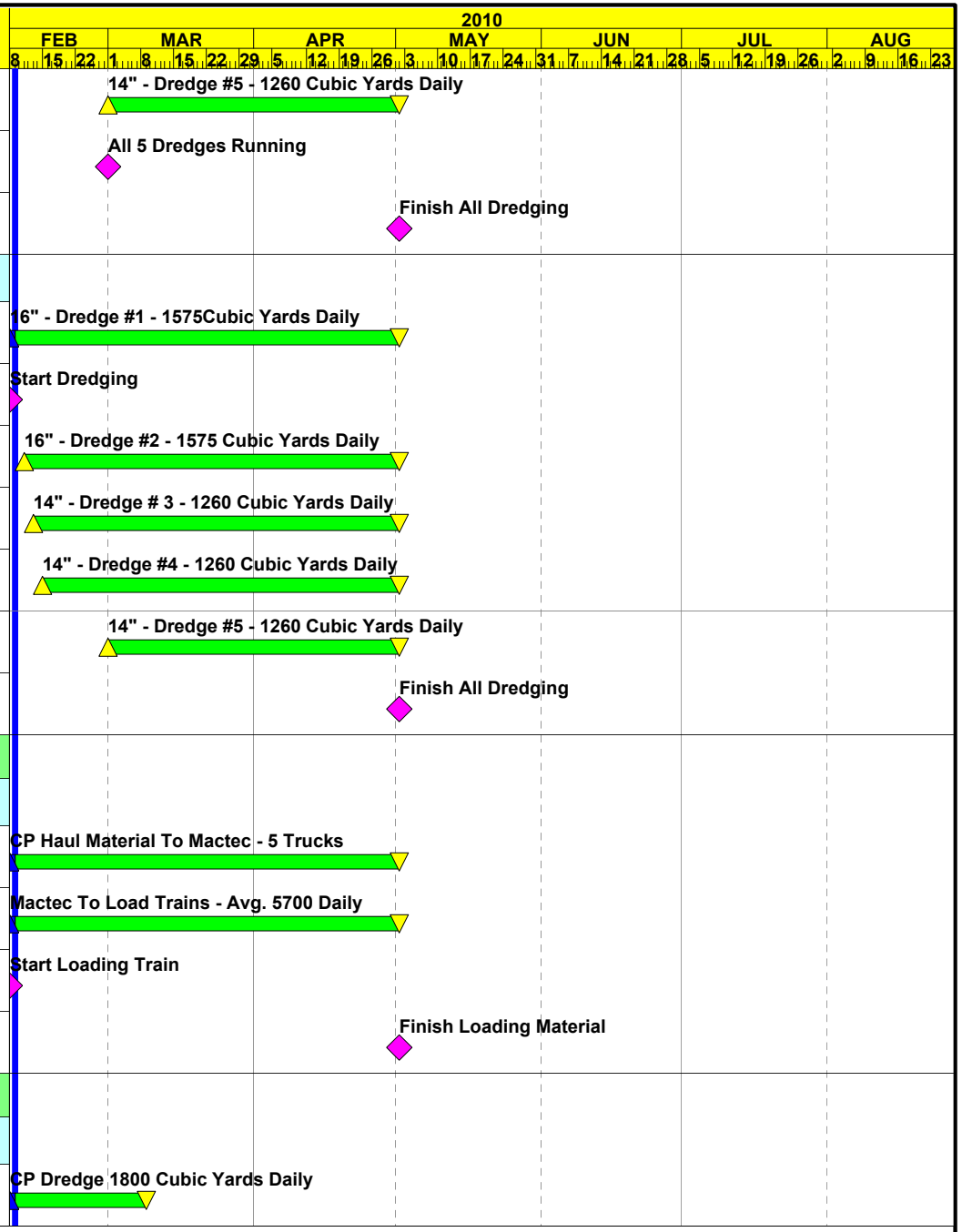
TVA / CIVIL PROJECTS

BALL FIELD PROCESSING OUTAGE

Classic Schedule Layout 1

Date	Revision	Checked	Approved

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish
DR250	14" - Dredge #5 - 1260 Cubic Yards Daily	62	62	0	01MAR10	01MAY10
DR205	All 5 Dredges Running	0	0	0	01MAR10*	
DR275	Finish All Dredging	0	0	0		01MAY10
Night Shift						
NDR215	16" - Dredge #1 - 1575Cubic Yards Daily	82	82	0	08FEB10A	01MAY10
NDR205	Start Dredging	0	0	100	08FEB10A	
NDR225	16" - Dredge #2 - 1575 Cubic Yards Daily	80	80	0	11FEB10	01MAY10
NDR230	14" - Dredge # 3 - 1260 Cubic Yards Daily	78	78	0	13FEB10	01MAY10
NDR240	14" - Dredge #4 - 1260 Cubic Yards Daily	76	76	0	15FEB10	01MAY10
NDR250	14" - Dredge #5 - 1260 Cubic Yards Daily	62	62	0	01MAR10	01MAY10
NDR275	Finish All Dredging	0	0	0		01MAY10
Loading Train						
Day Shift						
LT325	CP Haul Material To Mactec - 5 Trucks	83	82	1	08FEB10A	01MAY10
LT350	Mactec To Load Trains - Avg. 5700 Daily	83	82	1	08FEB10A	01MAY10
LT300	Start Loading Train	0	0	100	08FEB10A	
LT375	Finish Loading Material	0	0	0		01MAY10
Lateral Expansion Dredging						
Day Shift						
LED425	CP Dredge 1800 Cubic Yards Daily	29	28	3	08FEB10A	08MAR10



Start Date	08FEB10
Finish Date	01MAY10
Data Date	09FEB10
Run Date	09FEB10 15:30

Early Bar
Progress Bar
Critical Activity

BFPO

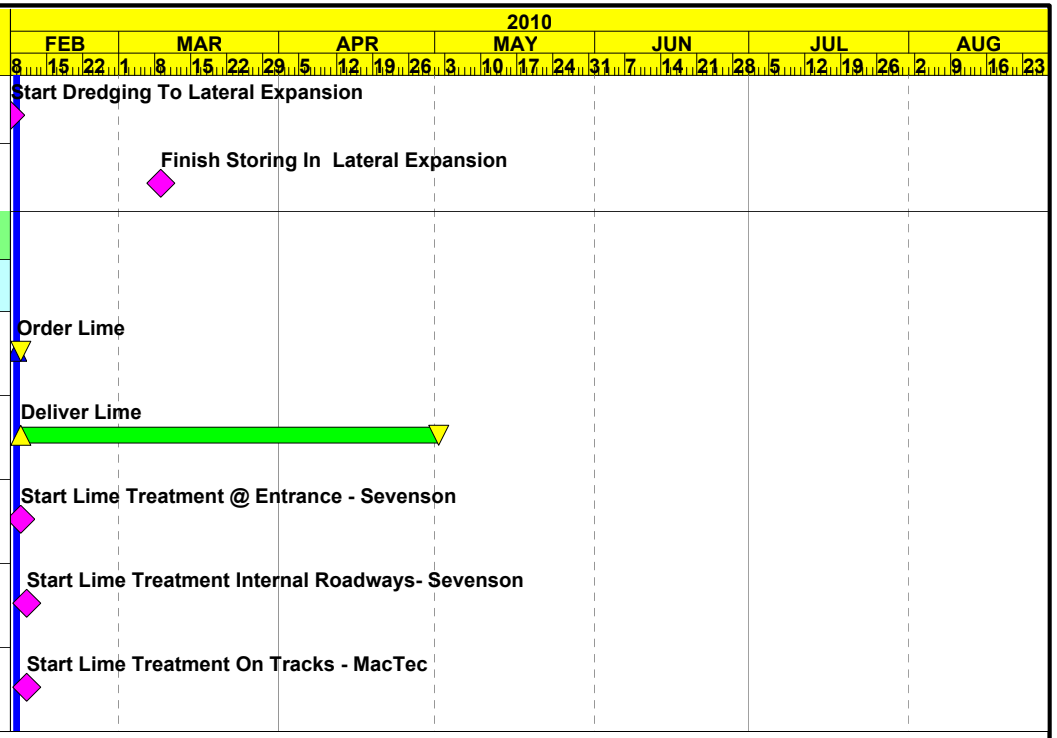
TVA / CIVIL PROJECTS

BALL FIELD PROCESSING OUTAGE

Classic Schedule Layout 1

Date	Revision	Checked	Approved

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish
LED400	Start Dredging To Lateral Expansion	0	0	100	08FEB10A	
LED450	Finish Storing In Lateral Expansion	0	0	0		08MAR10
Lime Treatment						
Day Shift						
LT500	Order Lime	1	1	0	09FEB10A	09FEB10
LT510	Deliver Lime	81	81	0	10FEB10	01MAY10
LT520	Start Lime Treatment @ Entrance - Sevenson	0	0	0	10FEB10*	
LT530	Start Lime Treatment Internal Roadways- Sevenson	0	0	0	11FEB10*	
LT540	Start Lime Treatment On Tracks - MacTec	0	0	0	11FEB10*	



Start Date	08FEB10
Finish Date	01MAY10
Data Date	09FEB10
Run Date	09FEB10 15:30

Early Bar
Progress Bar
Critical Activity

BFPO

TVA / CIVIL PROJECTS

BALL FIELD PROCESSING OUTAGE

Classic Schedule Layout 1

Date	Revision	Checked	Approved