COMPREHENSIVE OPERATIONS AND MAINTENANCE PLAN FOR REMEDIAL/CORRECTIVE ACTION PROJECTS SOLUTIA INC., ANNISTON, ALABAMA

Anniston PCB Site,
Anniston Alabama

October 1997
Revision 1.0 – July 1998
Revision 2.0 – April 2003
Revision 3.0 – July 2007
Revision 3.1 – Feb. 2014

TABLE OF CONTENTS

CHAPTER 1.0 PURPOSE AND SCOPE

Section 1.1 PURPOSE

The purpose of this Operations and Maintenance Plan (O&M Plan) is to serve as a stand-alone reference document that can be used by those responsible for the operation and maintenance of the constructed Remedial/Corrective Actions instituted by Solutia Inc. (Solutia) within, and in the vicinity of, its plant in Anniston, Alabama. Procedures for routine operation, inspection, maintenance, and repairs are contained in this document.

A number of protective systems have been installed as part of the Remedial/Corrective Actions. These systems include:

- Protective soil, asphalt, concrete and paint covers;
- Engineered multi-layer covers;
- Security fences, signs and access roads;
- Groundwater interceptor well systems;
- Groundwater monitoring well systems;
- Surface water monitoring systems; and
- Surface water management systems including sediment ponds, piping, erosion control berms, grassed and riprap lined channels.

Section 1.2 SCOPE AND ORGANIZATION

SCOPE

The O&M Plan defines the items to be inspected and provides procedures for scheduling and documenting maintenance and repairs for Remedial/Corrective Actions implemented at the Plant Site and off the Site. The O&M Plan also includes the schedule, list of wells, sample locations, and list of analytes included in the groundwater detection monitoring and corrective action effectiveness program, and the surface water monitoring program at the Plant Site.

O&M PLAN ORGANIZATION

The O&M Plan is intended to be an evergreen document and will be reviewed annually, or more frequently as dictated by facility changes or inspection results, to ensure that it reflects current operation and maintenance procedures and needs. It will be updated on an on-going basis to address new systems and/or Remedial/Corrective Actions as they are implemented. To that effect, the O&M Plan has been organized such that new sections can be easily integrated into the existing document.

The first three chapters following this introduction to the O&M Plan address items that are general in nature and that apply to the various Remedial/Corrective Actions. These sections describe the following:

- O&M parties' responsibilities (Chapter 2.0 – Organization and Documentation Requirements);
- General inspection requirements for covers, surface water management systems, and corrective action systems (Chapter 3.0 – Routine Inspections); and
- General maintenance and repair requirements (Chapter 4.0 – Maintenance/Repair Activities).

The on-site projects (Remedial/Corrective Actions completed contiguous to the Plant Site) are individually addressed in Chapter 5.0 of the O&M Plan and include the following:

- The South Landfill Cover System;
- Solid Waste Management Unit 1 (SWMU 1) Corrective Action Interceptor Well System;
- Waste Management Area I (WMA I) Cover System;
- The South Surface Water Diversion Berm;
- The West End Landfill Cover System and the Alabama Power Switchyard;
- Waste Management Area II (WMA II) Cover System;

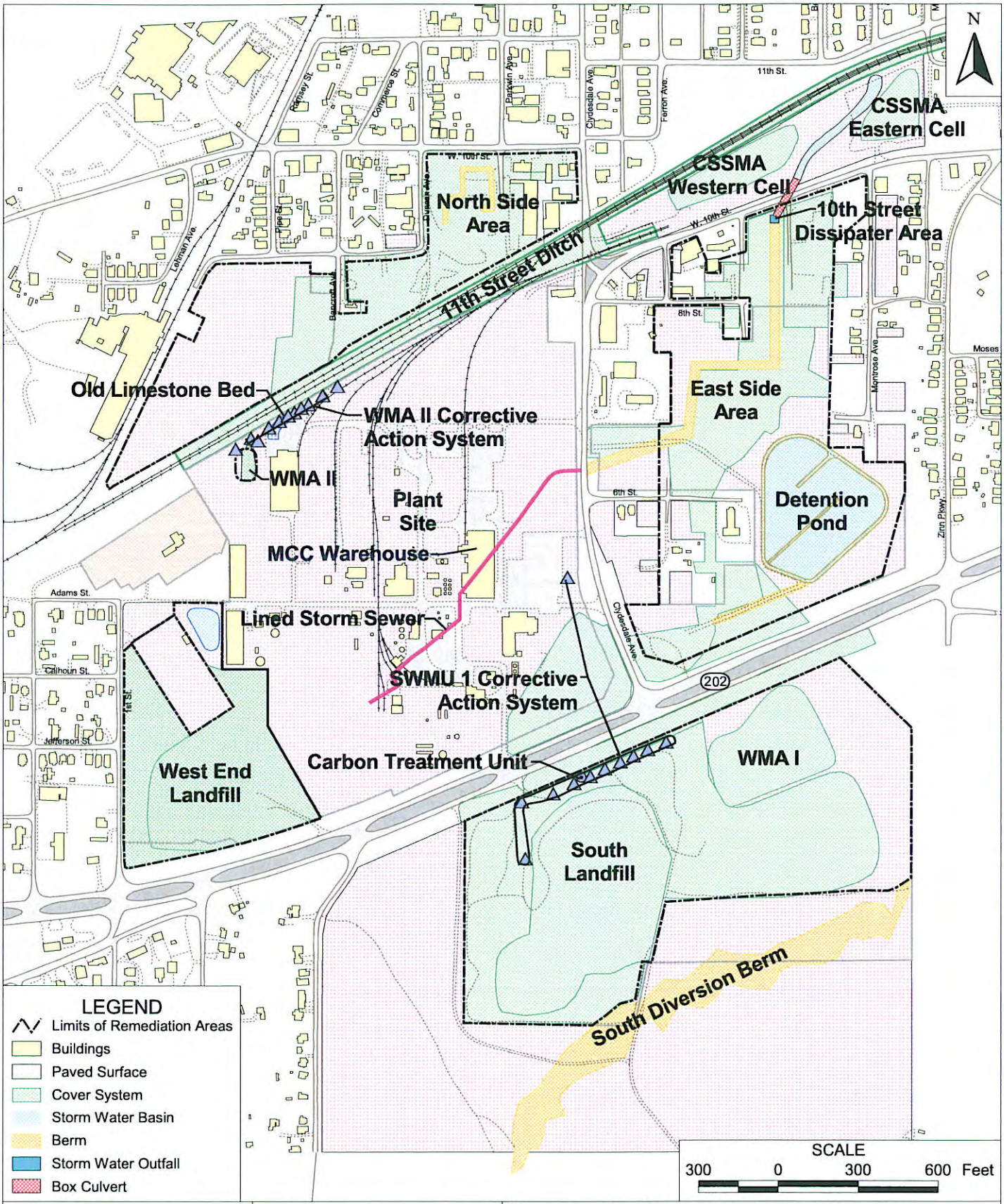
- Old Limestone Bed Cover System;
- WMA II Corrective Action Interceptor Well System;
- The East Side Area Remediation;
- The Detention Pond;
- The 10th Street Dissipater Area;
- The Northside Cover/Extension Area;
- The MCC Warehouse;
- The lined plant sewer system; and
- The Carbon Treatment Unit for the SWMU I Corrective Action System.
- The Walking Trail Area;
- The Former PCB Production Area (SWMU 42);

The areas listed above are shown on Figure 1.2-1.

Groundwater Monitoring is addressed in Chapter 6.0 and Surface Water Monitoring is addressed in Chapter 7.0.

Off-site Remedial/Corrective Actions, which have been completed to date, are individually addressed in Chapter 8.0 of the O&M Plan and include the following:

- Oxford Lake Softball Complex;
- Central Staging and Soil Management Area (also shown on Figure 1.2-1);
- 11th Street Ditch Lining (also shown on Figure 1.2-1);
- Choccolocco Creek Waste Water Treatment Plant Stockpile; and
- State Route 21 Bridge Cover.



Golder Associates

SOLUTIA

Title: On-Site and Adjacent Off-Site Remedial/Corrective Action Areas

Operations & Maintenance Plan

Project/File No:	Produced By:	Checked By:	Reviewed By:	Date:	Figure No:
Q:\...\0116.apr	JES	CMM	SM	14-Apr-2003	1.2-1

Rev. 07/07

CHAPTER 2.0 ORGANIZATION AND DOCUMENTATION REQUIREMENTS

Section 2.1 ORGANIZATION/RESPONSIBILITIES OF PARTIES INVOLVED IN O&M

Overall responsibility for carrying out the O&M Plan is with the Site Remediation Coordinator, Environmental Specialist, or their designee. The Site Remediation Coordinator, Environmental Specialist, or their designee is responsible for ensuring that the inspection, operation, and maintenance requirements for each element are consistent with the O&M Plan.

The field inspector(s) reports to the Site Remediation Coordinator, Environmental Specialist, or their designee. The field inspector(s) is responsible, in addition to any other responsibilities described in this document, for:

- Performing the required inspections;
- Completing the documents required by the O&M Plan;
- Requesting and tracking maintenance and/or repairs identified during inspections; and
- Completing and submitting the O&M Logs documenting the completed activities to the Site Remediation Coordinator, Environmental Specialist, or their designee for final filing.

The Site Remediation Coordinator, Environmental Specialist, or their designee, as well as the field inspector(s), is responsible for knowing and for implementing the responsibilities described in the O&M Plan.

Section 2.2 O&M DOCUMENTATION

Inspections are to be recorded on specific Inspection Log forms, samples of which are included in the O&M Plan. The Inspection Logs document explanations for and the tracking of maintenance and/or repairs deemed required based on the inspection observations.

Items to be inspected at each area or system are listed on the Inspection Logs and shown on the Inspection Log figures, included in the relevant sections of the O&M Plan. The field inspector is to document the condition of the inspection item on the appropriate Inspection Log. Areas, systems, or items requiring maintenance and/or repair are to be clearly identified and, if necessary, discussed with the Site Remediation Coordinator, Environmental Specialist, or their designee. The field inspector is responsible for requesting maintenance and/or repair services. The requests for maintenance and/or repairs are generally submitted as soon as practical, but within one month of the inspection. Emergency or urgent maintenance and/or repairs are to be requested immediately as described in Section 2.3. The date of request for work identified during an inspection is to be documented on the Inspection Log.

On-site mechanical and electrical maintenance and/or repairs are handled by filling out an electronic form into the Plant's SAP Work Order System. This system is set up so that these types of activities are tracked from the work order phase to the completion of the repairs. Off-site maintenance and repairs are contracted out by purchase order requisitions. The field inspector will keep print-outs of the work orders and/or purchase orders and work completion forms with the Inspection Logs that identify the need for a specific repair.

Maintenance/Repair Logs or alternative records will be kept by personnel performing earthwork/landscape maintenance and/or repair activities. Pertinent information such as date, name of operator, equipment used, and reason for the activity will be included. When the activity is completed, the Maintenance/Repair Log and/or alternative records are to be submitted to the field inspector responsible for tracking the O&M activities.

The field inspector is to submit the completed Inspection Log to the Site Remediation Coordinator, Environmental Specialist, or their designee for review and filing. An Inspection Log is considered complete when all items in the log have been addressed, including documentation of maintenance and/or repairs. The Maintenance/Repair Log, the work completion record from the plant's SAP System, and/or other written documents used to track repairs are to be included with the Inspection Log for filing.

Starting in February 2014 with the implementation of Revision 3.1 of this manual, completed Inspection Logs are to be retained permanently in compliance with the Solutia Inc. Records Retention Manual, unless otherwise allowed by Solutia policy provided the document destruction also complies with requirements of other

governing documents such as the Consent Decree (CD) and Partial Consent Decree (PCD) between Pharmacia LLC and Solutia Inc. (Solutia [collectively, P/S]) and the United States EPA. Specifically, the CD/PCD require records to be retained for a period of ten years following notice from EPA of remedial work completion, including a 90-day advance notification to EPA prior to document destruction.

Section 2.3 REPORTING EMERGENCIES

Any evidence indicating that any of the Solutia Remedial/Corrective Action Sites have been damaged or vandalized is to be immediately reported to the Site Remediation Coordinator, Environmental Specialist, or their designee.

If a spill, leak, or other failure of the integrity of a Remedial/Corrective Action system occurs, it will be reported as soon as it is discovered to the Site Remediation Coordinator, Environmental Specialist, or their designee.

CHAPTER 3.0 ROUTINE INSPECTIONS

Section 3.1 GENERAL

Routine inspections of the items included in the O&M Plan are to be conducted by the field inspector(s) at the frequencies listed in Section 3.6.

An area, system, or item identified during an inspection requiring maintenance and/or repair is to be identified clearly through sketches, photographs, or staking / flagging that accompany a detailed description of the issue on the appropriate Inspection Log (see Section 2.2).

Section 3.2 SECURITY, SITE ACCESS CONTROL AND REFERENCE ITEMS INSPECTIONS

INSPECTION ITEMS

Security, site access control, and reference items include fences, gates, locks, access roads, benchmarks, survey monuments, and warning signs. These items are found at the following locations:

- The South Landfill, including WMA I, and the South Diversion Berm;
- WMA II and the Old Limestone Bed;
- The West End Landfill and APCO Switchyard;
- The East Side Area Remediation, including the Detention Pond;
- The 10th Street Dissipater Area;
- The Northside Cover/Extension Area;
- The MCC Warehouse;
- The Walking Trail;
- The Central Staging and Soil Management Area;
- The 11th Street Ditch Lining Project; and,
- The Choccolocco Creek Waste Water Treatment Plant Stockpile.

INSPECTIONS

The following items are to be inspected and, if required, identified for repair:

- Locks: inspect to make sure they are operational and have not been vandalized;
- Warning signs: confirm that signs are still posted and are legible;
- Fencing and Gates: visually inspect the fence perimeter to identify breaks in the fence that may have occurred due to vandalism or fallen trees, and inspect gates to make sure they are operational;
- Access Roads: identify erosion, pot holes, depressions, water ponding, fallen trees, or other conditions that would restrict passage; and,
- Benchmarks and survey monuments: inspect for accessibility and integrity.

Section 3.3 CAP AND COVER SYSTEMS INSPECTIONS

EARTHEN SURFACE SYSTEMS

Earthen surface systems consist of vegetated soil covers placed as, or as part of, the cover over areas where waste or PCB-containing soil has been disposed of in the past or areas where PCB-containing soil has been detected.

Landfills and other areas have been covered with systems that may consist of only a vegetative soil cover or that may also include other layers, both natural and synthetic, with a vegetative soil cover. Cap and cover systems are designed to promote drainage, impede surface water infiltration, and/or isolate PCB-containing soil to prevent potential exposure. Earthen cap and cover systems have been constructed at the following locations:

- The South Landfill, including WMA I, and the South Diversion Berm;
- WMA II;
- The West End Landfill;
- The East Side Area Remediation;
- The 10th Street Dissipater Area;
- The Northside Cover/Extension Area;
- The Walking Trail;
- The Oxford Lakes Softball Complex;
- The Central Staging and Soil Management Area;
- The Choccolocco Creek Waste Water Treatment Plant Stockpile; and
- The State Route 21 Bridge Cover.

EARTHEN SURFACE SYSTEMS INSPECTIONS

A visual inspection of the condition of the cover system's earthen surface is to be performed. The cover inspections are to include observation of the following:

- Poor vegetation (e.g., bare or un-vegetated areas);
- Whether mowing and /or seeding and fertilizing is required;
- Differential settlement producing areas of ponding;
- Significant surface erosion;
- Exposure of underlying geosynthetic layers;
- Significant surface soil cracking (approximately 1 inch or greater in width);

- Toe drains for presence of sediment build-up or other obstructions;
- Outlet areas around toe drains for signs of erosion; and,
- Other disturbances such as fallen trees that may adversely affect cap performance.

ASPHALT SURFACE SYSTEMS

The final surface of some constructed cap and cover systems are paved with asphalt. Asphalt covers can presently be found at:

- The Old Limestone Bed;
- The MCC Warehouse;
- The Northside Cover/Extension Area;
- The Former PCB Production Area; and
- The Oxford Lake Softball Complex.

ASPHALT SURFACE SYSTEMS INSPECTIONS

A visual inspection of the conditions of the cover system's asphalt surface is to be performed. The cover inspections are to include observation of the following:

- Presence of cracks and growth of vegetation in the cracks;
- Presence of potholes; and
- Areas of subsidence that may allow surface water ponding.

CONCRETE/SHOTCRETE SURFACE SYSTEMS

The final surface of some constructed cap and cover systems are covered with concrete/shotcrete. Concrete/shotcrete covers can presently be found at:

- The 11th Street Ditch Lining.

CONCRETE/SHOTCRETE SURFACE SYSTEMS INSPECTIONS

A visual inspection of the condition of the cover system's concrete/shotcrete surface is to be performed. The concrete/shotcrete surface will be inspected for the presence of spalling, cracking, holes, and vegetation growing within the cracks. Rubber curbs and expansion and contraction joints will be inspected for damage and/or vegetation growth.

RIPRAP AND GRAVEL SURFACE SYSTEMS

Riprap and gravel surface systems consist of aggregate covers placed as, or as part of, the cover. Riprap and gravel cover systems have been constructed at the following locations:

- The South Landfill, including WMA I, and the South Diversion Berm;
- Central Staging and Soil Management Area (CSSMA);
- APCO Switchyard;
- The 11th Street Ditch Lining; and,
- The Choccolocco Creek Waste Water Treatment Plant Stockpile.

RIPRAP AND GRAVEL SURFACE SYSTEMS INSPECTIONS

The riprap and gravel lined surfaces will be inspected for erosion, settling, excessive vegetation growth, or exposure of the underlying geotextile, if present.

ENCAPSULATING PAINT COVER SURFACE SYSTEMS

Encapsulation of cleaned concrete or steel surfaces consists of applying two coats of paint with contrasting colors: the first coat is red, and the second coat is gray. The contrasting colors allow for immediate assessment of the integrity of the encapsulation during routine inspections. This type of cover is found at the MCC Warehouse, as described in Section 5.10.

Section 3.4 INTERCEPTOR WELL SYSTEMS INSPECTIONS

INTERCEPTOR WELL SYSTEMS

There are two interceptor well systems. First, the WMA II Corrective Action System, which consists of eleven interceptor wells (IW-16, IW-17, IW-18, IW-19, IW-20, IW-21, IW-22, IW-23, IW-24, IW-25 and DW-1), is located at the north end of the Plant Site. Second, the SWMU 1 Corrective Action System, is located along the western and northern sides of the closed South Landfill and in the Plant Site area. This Corrective Action System consists of eleven recovery wells: IW-2, IW-5, IW-6, IW-7, IW-8, IW-9, IW-10, IW-11, IW-12, IW-13, and IW-14A. Groundwater is automatically pumped from these wells to maintain a localized depression in the surrounding groundwater regime. Extracted groundwater from the SWMU 1 system is routed to the plant's on-site equalization basin, which discharges to the City of Anniston's publicly-owned treatment works (POTW). Extracted groundwater from the WMA II area is pumped into a collection tank and is then pumped to the equalization basin for discharge to the POTW. Prior to discharging to the equalization basin, effluent from recovery well IW-10 is passed through a small carbon treatment system.

INTERCEPTOR WELL INSPECTIONS

Routine inspections of the external and internal conditions of the wells are to be performed as described in Section 5.3 and Section 5.6 of the O&M Plan. The inspections are to be performed in conjunction with inspections performed at WMA I and the WMA II/Old Limestone Bed areas, and are to note the following:

- Condition of concrete pad, inner PVC casing, and outer protective casing;
- Condition of well lock;
- Legibility of the Well Designation;
- Check that the pumps are operating;
- Condition of collection tank at the WMA II area;
- Pumping quantity;
- Control panel (including all lights, displays, and other internal components);
- Ensure that the valve in the containment dike around the collection tank is closed and locked;
- Level sensing devices in the wells; and
- Accessibility.

Groundwater monitoring and maintenance and/or repair of the monitoring wells are described in Chapter 6.0 of the O&M Plan.

Section 3.5 SURFACE WATER MANAGEMENT COMPONENTS INSPECTIONS

SURFACE WATER MANAGEMENT COMPONENTS

The existing water management structures include detention ponds, channels, culverts, berms, inlet and outlet structures, and discharge areas. Surface water control structures and measures have been instituted at many of the Remedial/Corrective Action sites.

SURFACE WATER MANAGEMENT COMPONENTS INSPECTIONS

Surface water management components are to be inspected to evaluate their overall condition, whether there are washouts or excessive erosion, and to identify needed repairs. Observations of surface water management systems are to include those items identified in this section of the O&M Plan.

Ponds

- Nature and quality of vegetative cover on the pond slopes;
- Water elevation in the pond;
- Condition of orifices and spillway structures;
- Condition of inlet and outlet areas to determine whether excessive or accelerated erosion has occurred;
- Outlets should be free flowing and be free of debris; and
- Note outlet valve setting and flow conditions.

Other Surface Water Structures

- Presence of debris, silt or other significant (blocking more than $^1/_5$ of the orifice) blockage at headwalls, inlet and outlet riprapped areas of culverts and/or pipes;
- Condition of downslope pipes;
- Condition of areas around headwalls and manholes to determine whether excessive or accelerated erosion has occurred;
- Condition of manhole covers;
- Blockage or breaks in the channels;
- Standing water in ditches and channels; and
- Other observations to determine whether the surface water drainage system is functioning properly, repairs are needed, and the type of repairs that are appropriate.

Section 3.6 INSPECTION FREQUENCIES

The following table contains the areas and/or items that require inspections and the frequencies that the inspections should occur:

AREA/ITEM	FREQUENCY
South Landfill	Quarterly
WMA I/ SWMU 1 Corrective Action Interceptor Well System	Weekly*
South Surface Water Diversion Berm	Quarterly
West End Landfill/APCO Switchyard	Quarterly
WMA II and WMA II Corrective Action Interceptor Well System	Weekly*
Old Limestone Bed	Quarterly
10th Street Dissipater Area and Covered Area North of 10th Street	Quarterly and after significant storm events**
East Side Remediation/Detention Pond	Quarterly and after significant storm events
Northside Cover/Extension Area	Quarterly
MCC Warehouse	Monthly
In-Plant Sewer Line	Every 5 years
Groundwater Monitoring Wells	Semi-annually
Surface Water Monitoring (NPDES)	Quarterly
Carbon Treatment Unit for SWMU I Corrective Action System	Weekly inspections and quarterly monitoring
Walking Trail	Quarterly
Former PCB Production Area	Quarterly
Oxford Lakes Softball Complex	Semi-annually and after significant storm events
Central Staging and Soil Management Area	Monthly and after significant storm events
11th Street Ditch Lining	Quarterly
Choccolocco Creek Waste Water Treatment Plant Stockpile	Monthly and after significant storm events
State Route 21 Bridge Cover	Annually

*Post-Closure Care in the RCRA Part B Permit requires that these areas be inspected weekly and be mowed and fertilized as needed to maintain a healthy growth and to minimize erosion as described in the O&M Plan.

**Significant storm events are defined in this manual as storms of greater than 3 inches of precipitation in a 24 hour period.

CHAPTER 4.0 MAINTENANCE/REPAIR ACTIVITIES

Section 4.1 GENERAL

Procedures for providing maintenance of various Remedial Actions/Corrective Measures, and for repairing deficiencies identified during routine inspections, are discussed in this Chapter of the O&M Plan. The field inspector is to record, initiate, and track needed maintenance and/or repairs until they are completed.

Maintenance and/or repairs are to be documented and tracked from request through satisfactory completion. Documentation (such as a Maintenance/Repair Log, an SAP System completion report, or other records) of the maintenance request, execution, and satisfactory completion process should be attached to the Inspection Log that initially identified the need for maintenance and/or repairs. A Maintenance/Repair Log is included at the end of this Section.

Section 4.2 SECURITY, SITE ACCESS CONTROL AND REFERENCE ITEMS MAINTENANCE

No regular maintenance is scheduled for the security and reference items. Repairs are to be made as necessary to correct items identified during routine inspections or at other times.

Possible repairs are:

- Replacement of gate locks;
- Repairs to fencing and gates;
- Replacement of signs;
- Replacement of benchmarks or survey monuments;
- Placement of soil in areas where there is a breach below the fence;
- Placement of coarse aggregate material and/or regrading to eliminate low spots or potholes resulting in ponded water or other conditions restricting the use of access roads; and
- Removing fallen trees from access roadways and top of fences.

Section 4.3 CAP AND COVER SYSTEMS MAINTENANCE

EARTHEN SURFACES

Cap and cover systems with vegetated surfaces are to be mowed and fertilized on an as-needed basis or as otherwise required by the O&M Plan. Paths for access to wells and/or other monitoring locations are to be mowed to a height of about 6-inches and maintained at about the same height during each mowing. Grass clippings may be left on the ground. Repairs are to be performed to the items identified during routine inspections or identified at other times.

Possible repairs are:

- Reseeding and fertilizing areas having insufficient vegetation;
- Correcting erosion damage by placement and compaction of soil and revegetation;
- Repairing surface damage caused by fallen trees, which may include removal of the tree and attached roots, placement and compaction of low-permeability cover soil and surface re-vegetation;
- Repairing cracks in soil covers that might allow excess infiltration. Repairs are to be accomplished by excavating along the crack to a depth of 6 inches below the crack, replacing and recompacting the existing cap materials in the excavated crack area. Where necessary, additional material is to be added to achieve the proper grade. Re-vegetate the repaired area;
- Should the geomembrane or geosynthetic drainage layer be exposed, the area will be repaired by placing and compacting a layer of soil on top of the exposed area. Gravel or riprap material are not to be placed in direct contact with a geomembrane;
- Removing sediment and/or other obstruction of toe drains;
- Removing sediment or replacing riprap at toe drain outlets;
- Repairing damage or disturbances by people or equipment;
- Removing undesirable vegetation growing on the access roads; and
- Removing woody vegetation.

Mowing and Fertilizing

Mowing and fertilizing of vegetated surfaces are to be performed as follows:

Spring Maintenance:

- Mow grass as needed.
- Fertilize as needed.

Fall Maintenance:

- Mow grass as needed.
- Fertilize as needed.

The amount and composition of required fertilizer can be indicated by soil testing if required.

ASPHALT SURFACES

Maintenance requirements for asphalt covers will include recoating the covered surface once every two years or as otherwise required to minimize infiltration and maintain surface integrity. Repairs are to be performed to items identified during routine inspections or identified at other times.

Possible repairs are:

- Fill in holes or depressions in the surface; and
- Remove vegetation growing through cracks.

CONCRETE/SHOTCRETE SURFACES

There are no specific maintenance requirements for concrete covers. These covers will be visually inspected and repaired as required to minimize infiltration and maintain surface integrity. A description of possible problems and repairs are listed below.

- If excessive cracking or spalling is observed in the concrete that may compromise its structural integrity, appropriate repairs will be made. Cracks may be repaired using a variety of products depending on the size and severity of the crack. Any vegetation will be removed and the crack will be cleaned so it is free of accumulated debris, washed out and allowed to dry. The crack may need to be deepened or widened to achieve bonding and penetration as required by the individual repair product. A grout or epoxy repair product may be used as appropriate. A bonding agent may also be required. All crack repair products will be installed in accordance with the manufacturer's recommendations.

- If there is a breach in a concrete cover that includes an underlying geocomposite and the geocomposite is exposed, the geocomposite will be inspected for damage. The concrete will first be saw cut to create a clean edge. The geocomposite will then be patched as appropriate in accordance with the manufacturer's instructions. Once the geocomposite is repaired, the concrete will be replaced. Rubber curbs observed to be damaged will be replaced and the repaired curb

will be bolted to the concrete liner. Expansion joints or contraction joints will be installed as appropriate, dependent on the size of the repair area. Contraction joints will be located on 20-foot centers, and expansion joints will be located on 60-foot centers.

- If any required repairs are located in an area of flowing water, a temporary dam will be constructed upstream of the repair location. Water will be pumped from upstream of the temporary dam to a location downstream of the repair area. If soils below the concrete liner are exposed during repair activities, it is imperative that contact with water be prevented.

- If excessive vegetation growth is observed in expansion joints or curbs, vegetation will be removed manually. If necessary, a herbicide may be applied to the expansion joints and curbs. It is imperative that any herbicide used be approved by the United States Environmental Protection Agency (USEPA) and the Alabama Department of Environmental Management (ADEM) for use in waterways and be applied in accordance with the manufacturer's instructions.

RIPRAP AND GRAVEL SURFACES

There are no specific maintenance requirements for riprap and gravel covers. These covers will be visually inspected and repaired as required to maintain surface integrity. A description of possible problems and repairs are listed below.

- If riprap is eroded, the underlying geotextile will be inspected and repaired, if needed. Damaged geotextile will be replaced with a nonwoven geotextile. If excessive settlement is observed, additional riprap will be installed. Riprap will be sized as required for the specific application. If excessive vegetation is observed, the vegetation will be removed by hand or a herbicide may be applied. It is imperative that any herbicide used be approved by the EPA and ADEM for use in waterways and be applied in accordance with the manufacturer's instructions.

- If gravel is eroded or the underlying geotextile exposed, additional gravel will be installed to maintain the thickness of the gravel layer as appropriate for the application. If the geotextile is torn or otherwise breached, gravel will be temporarily removed and the breached geotextile will be replaced with a minimum 6-inch overlap with the surrounding geotextile. The damaged geotextile will be replaced with a nonwoven geotextile. Gravel will be sized as required for the specific application.

ENCAPSULATING PAINT COVER

Any paint-encapsulated concrete or steel surfaces where the red paint begins to show will be marked and painted with gray paint.

Section 4.4 INTERCEPTOR WELL SYSTEMS MAINTENANCE

There are no regularly scheduled maintenance activities for the two interceptor well systems; the SWMU I Corrective Action System and the WMA II Corrective Action System (see Section 3.4). However, as part of routine operations, pumping quantities and pressure gauges are to be read on a weekly basis. When pumping quantities are read, the field inspector is to note whether the pumping system and the pumps are working properly or are in need of repair or replacement. In addition, the field inspector is to immediately notify the Site Remediation Coordinator, Environmental Specialist, or their designee should cracks or leaks be found in the collection tank at the WMA II Corrective Action System, the valve in the secondary containment dike not be locked, or the red pump beacon light be on.

Groundwater monitoring and maintenance and/or repair of the monitoring wells are described in Chapter 6.0 of the O&M Plan.

Section 4.5 SURFACE WATER MANAGEMENT COMPONENTS MAINTENANCE

Maintenance and/or repairs to the surface water management system are to be determined by the inspections described in Section 3.5.

Possible repairs and action items are identified in the following subsections:

Ponds:

- Repairing vegetation on pond slopes;
- Repairing erosion in pond inlet and discharge areas;
- Regrading or replacing of riprap used as outlet protection as a result of erosion, settlement or damage;
- Adjusting the outlet valve to increase or decrease outflow from pond;
- Replacing and repairing damaged risers and/or outlet pipes;
- Cleaning out sediment/silt/trash in riser pipes; and
- Removing leaves, grass clippings, excessive silt deposits, excessive vegetative growth, or any other debris in outlet areas, which may significantly impede flow.

Other Surface Water Structures:

- Repairing erosion in ditches, berms, headwall areas, culvert openings and discharge areas, perimeter conveyance channels, etc., with similar materials and vegetative covers;
- Regrading or replacing channel liner to restore positive flow. Damage to channel liners may be the result of erosion, settlement, or other blockage;
- Replacing and repairing damaged pipes/culverts;
- Cleaning out sediment/silt/trash from headwall areas;
- Cleaning out sediment/silt/trash in pipes/culverts; and
- Removing leaves, grass clippings, excessive silt deposits, excessive vegetative growth, or any other debris from drainage channels, outlet perimeter conveyance channels, and culverts, headwall areas, etc., which significantly impede flow.

Maintenance/Repair Log*

Date of Work Request:_____ Work Requested By:_____

	On-Site RA Projects	Off-Site RA Projects
Location of Work: (circle one)	The South Landfill Cover System;	Oxford Lakes Softball Complex
	The SWMU 1 Corrective Action Interceptor Well System;	Central Staging and Soil Management Area
	WMA I Cover System;	11th Street Ditch Lining
	The South Surface Water Diversion Berm;	Choccolocco Creek Waste Water Treatment Plant Stockpile
	West End Landfill Cover System;	State Route 21 Bridge Cover
	APCO Switchyard	
	WMA II Cover System;	
	Old Limestone Bed Cover System;	
	WMA II Corrective Action Interceptor Well System;	
	The East Side Area Remediation;	
	The Detention Pond;	
	The 10th Street Dissipater Area;	
	The Northside Cover / Extension Area	
	MCC Warehouse	
	Lined Plant Storm Sewer	
	Carbon Treatment Unit for SWMU I	
	The Walking Trail	
	The Former PCB Production Area	

Name of Operator: _____

Date of Maintenance/Repair Activity: _____

Equipment/Materials Used: _____

_____

Activity Performed: _____

_____

_____

Operator Signature _____

Once repairs are completed, return form to the field inspector.

CHAPTER 5.0 O&M FOR ON-SITE REMEDIAL/CORRECTIVE ACTION PROJECTS

Section 5.1 GENERAL

This section of the O&M Plan describes the Remedial/Corrective Action projects that are contiguous to the Plant Site, and specifically addresses the O&M requirements for each. These Remedial/Corrective Actions include the following completed projects:

- The South Landfill Cover System;
- The SWMU 1 Corrective Action Interceptor Well System;
- WMA I Cover System;
- The South Surface Water Diversion Berm;
- The West End Landfill and APCO Switchyard Cover System;
- WMA II Cover System;
- Old Limestone Bed Cover System;
- WMA II Corrective Action Interceptor Well System;
- The East Side Area Remediation;
- The Detention Pond;
- The 10th Street Dissipater Area;
- The Northside Cover/Extension Area;
- The MCC Warehouse;
- The lined plant sewer system;
- The Carbon Treatment Unit for SWMU I Corrective Action System.
- The Walking Trail; and
- The Former PCB Production Area

Section 5.2 SOUTH LANDFILL

The South Landfill is located south of State Highway 202 across from the Plant Site. The location of the South Landfill is shown on Figure 5.2-1. The South Landfill consists of ten individual cells and was used for disposal of production wastes, demolition materials, and trash from the facility. Two of the landfill cells, Cells 4E and 5E, were operated as hazardous waste disposal cells under RCRA and are collectively referred to as WMA I. Operation and maintenance activities for WMA I are described in Section 5.3. The South Landfill was initially capped with an all soil cover but an upgrade of the cap system utilizing geosynthetic components was added in 1998.

The South Landfill area has two different cover systems. One includes an HDPE geomembrane and the other consists of an all-soil cover system. The approximate extent of the combined systems is shown on Figure 5.2-1.

The systems are:

1. South Landfill HDPE geomembrane cap system (from top to bottom):
    - Six inches of topsoil with vegetative cover;
    - Eighteen inches of cover soil;
    - Geocomposite drainage layer;
    - Geomembrane – 40 mil thick textured HDPE geomembrane; and
    - Six inches of soil fill.

2. South Landfill all-soil cap system (from top to bottom):
    - Twelve inches of compacted soil with vegetative cover;
    - Non-woven geotextile; and
    - Former soil surface.

In some areas, the all soil cap system consists of an earthen cover with varying thickness of clay topped by a vegetative cover.

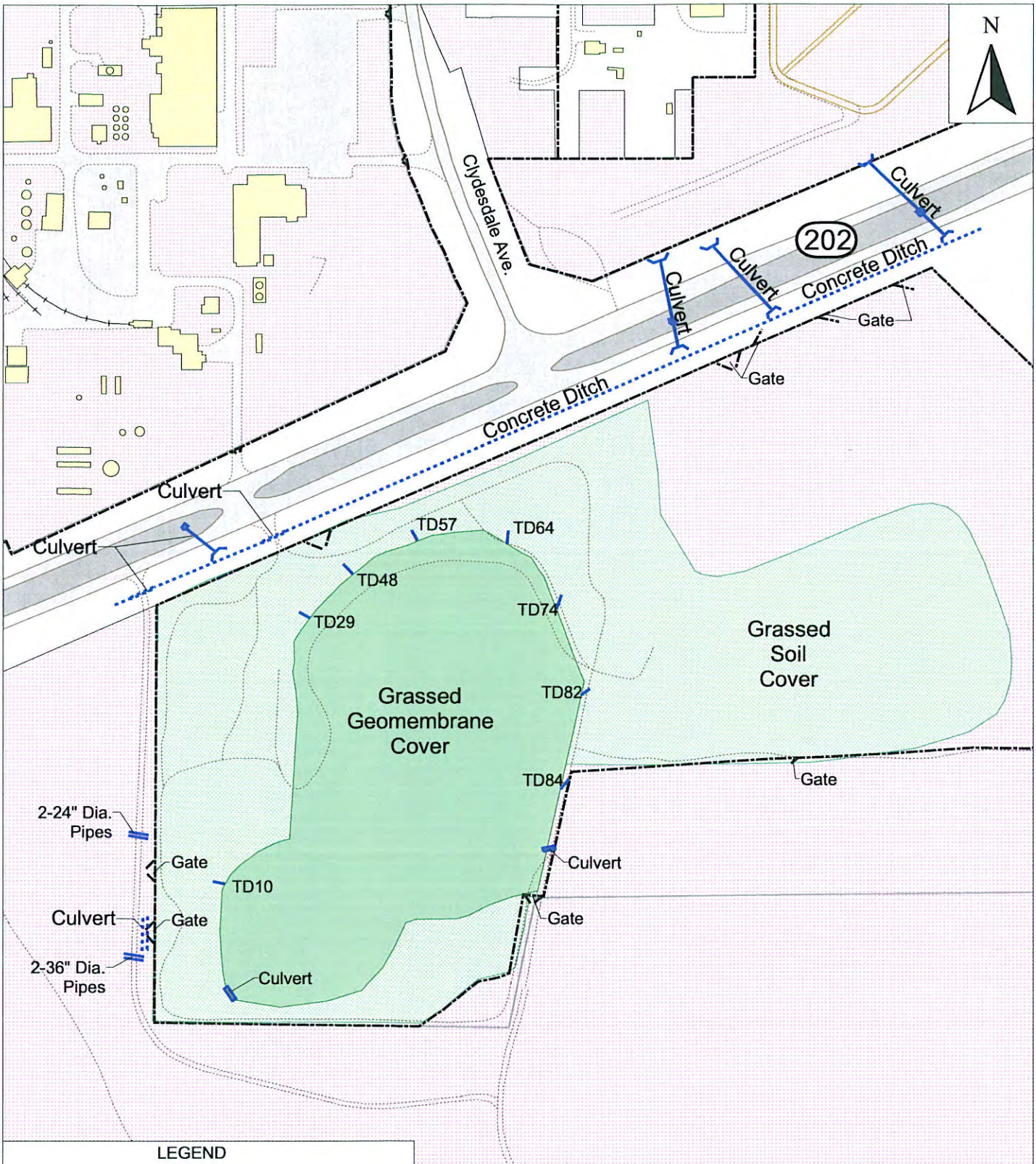
The South Landfill is to be inspected according to the inspection schedule in Section 3.6. The inspection is to include:

- Security/access control fence and benchmarks as described in Section 3.2;
- Landfill cover system as described in Section 3.3;
- Surface water control concrete ditch parallel to the south side of State Highway 202 as described in Section 3.5; and
- The inlet and outlet headwalls and culverts beneath State Highway 202 and east of its intersection with Clydesdale Avenue as described in Section 3.5; and
- Miscellaneous culverts, ditches, and riprap check dams located around the south landfill as described in Section 3.5.

The South Landfill inspection is to be documented on Inspection Log No. 5.2-1.

Documentation of the closure of the South Landfill is included in the report titled, "Final Report for the Detention, Cap and Cover Project at the Solutia Anniston Facility."

South Landfill Toe Drain and Check Dam



Golder Associates

SOLUTIA

Title:

South Landfill

Operations & Maintenance Plan

Project/File No:	Produced By:	Checked By:	Reviewed By:	Date:	Figure No:
Q:\...\0116.apr	JES	CMM	SM	14-Apr-2003	5.2-1

Rev. 07/07

SOUTH LANDFILL
(Quarterly Inspection)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Cap & Cover System	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Is there erosion evident?	Yes		No		"
	C4	Are any geosynthetic materials visible?	Yes		No		"
	C5	Is there settlement or subsidence evident?	Yes		No		"
Toe Drains	TD1	Are any toe drains clogged or blocked?	Yes		No		(If Yes, describe below)
	TD2	Is there sediment buildup at toe drains?	Yes		No		"
	TD3	Is there erosion around the toe drains?	Yes		No		"
Security & Site Access	S1	Are access roads in good condition?	Yes		No		(If No, describe below)
	S2	Is there any breach of fence?	Yes		No		(If Yes, describe below)
	S3	Is there any erosion along the fence line?	Yes		No		"
	S4	Are signs visible and in good condition?	Yes		No		(If No, describe below)
	S5	Are gates functioning properly?	Yes		No		"
	S6	Are gates locked?	Yes		No		"
	S7	Locks in good condition (signs of rust, etc.)?	Yes		No		"
	S8	Are benchmarks in good conditions?	Yes		No		"
	S9	Do locks work?	Yes		No		"
Surface Water Control Features along Hwy 202	D1	Debris, obstructions or cracks in concrete channel?	Yes		No		(If Yes, describe below)
	D2	Debris, obstructions or sediments at pipe inlets (obstructing more than $^1/_5$ of the diameter or the pipe)?	Yes		No		"
	D3	Sediment buildup in channel or inlets?	Yes		No		"
	D4	Is there erosion around the pipe inlets?	Yes		No		"
	D5	Are check dams intact?	Yes		No		(If No, describe below)
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS*

Describe any items requiring work. Mark the location of the item on the South Landfill figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013		Added Revision Log

Section 5.3 WASTE MANAGEMENT AREA I (WMA I) / SWMU 1 CORRECTIVE ACTION INTERCEPTOR WELL SYSTEM

WMA I and the SWMU 1 Corrective Action Interceptor Well System are located south of State Highway 202 across from the Plant Site. WMA I consists of cells 4E and 5E of the South Landfill. WMA I is a RCRA regulated disposal unit that was certified closed under the RCRA Part B Permit on August 30, 1989. The 30-year post-closure care activities commenced with this effective starting date.

The WMA I inspection includes the Interceptor Well system located along the north and west sides of the South Landfill (SWMU 1 Corrective Action System). The locations of the interceptor wells are shown on Figure 5.3-1. As shown on the drawing, one of the interceptor wells (IW-14A) is located north of State Highway 202, near the Plant Entrance.

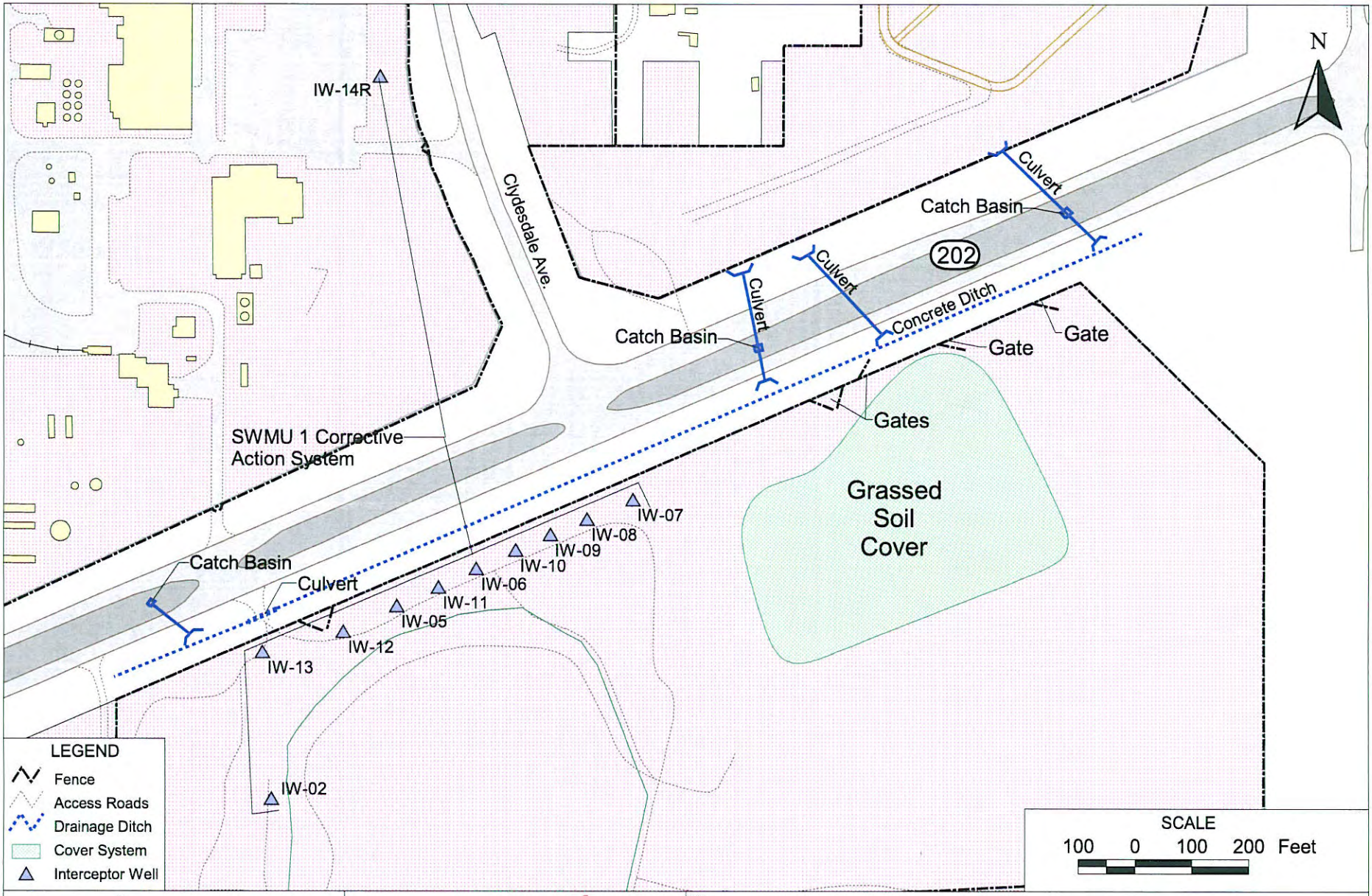
The cap and cover system for WMA I is as follows (from top to bottom):

- Twenty four inches of topsoil and vegetation;
- Geotextile fabric layer;
- Twelve inch thick sand drainage layer; and
- Twenty four-inch thick, compacted clay base.

WMA I and the SWMU 1 Corrective Action Interceptor Well System are to be inspected in accordance with the schedule provided in Section 3.6. The inspections will be performed as described in Section 3.3 and Section 3.4 of the O&M Plan, and as per the requirements stated for post-closure care of this area in the current RCRA Part B Permit Application. A copy of the relevant post-closure care monitoring and inspection requirements is provided for reference in Appendix 5-1 at the end of this Chapter. Post-closure care requirements from the RCRA Part B Permit Application state that this area is to be mowed and fertilized as necessary as described in Section 4.3 of the O&M Plan.

The location of WMA I and the SWMU 1 Corrective Action Interceptor Well System is shown on Figure 5.3-1. The WMA I inspection is to be documented on Inspection Log No. 5.3-1, and the SWMU 1 Corrective Action Interceptor Well System inspection is to be documented on Inspection Log No. 5.3-2.

Groundwater monitoring and maintenance and/or repair of the monitoring wells are described in Chapter 6.0 of the O&M Plan.



Golder Associates

SOLUTIA

Title:

WMA I & SWMU 1 Corrective Action System

Operations & Maintenance Plan

Project/File No:	Produced By:	Checked By:	Reviewed By:	Date:	Figure No:
Q:\...\0116.apr	JES	CMM	JM	14-Apr-2003	5.3-1

Rev. 07/07

WMA 1
(Monthly Inspection)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Cap & Cover System	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Is there erosion evident?	Yes		No		"
	C4	Is there settlement or subsidence evident?	Yes		No		"
Site Access & Security Items*	S1	Are access roads in good condition?	Yes		No		(If No, describe below)
	*Security Items for this area are inspected **quarterly** during the South Landfill inspections.						
Ditches and Drainage Channels*	*Ditches and Drainage Channels for this area are inspected **quarterly** during the South Landfill inspections.						
Pipes / Culverts*	*Pipes/Culverts for this area are inspected **quarterly** during the South Landfill inspections.						
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"
	V3	Date of last mowing:	Date of last fertilization:				

MAINTENANCE / REPAIR REQUIREMENTS*

Describe any items requiring work. Mark the location of the item on the WMA I figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013		Added Revision Log

SWMU 1 CORRECTIVE ACTION INTERCEPTOR WELL SYSTEM
(Weekly Inspection)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

(Revised Form 02-03-04)

NUMBER OF WELL	NUMBER OF COUNTS	IS WELL LOCKED?		IS FLOAT VISIBLE?		DOES PUMP RESPOND TO KEY SWITCH?		DOES COUNTER RESPOND TO KEY SWITCH?		DOES PUMP RESPOND FLOAT SWITCH?		DOES COUNTER RESPOND FLOAT SWITCH?		RESET TO ZERO?		ARE REPAIRS NEEDED?		Comments
		YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	
IW-2																		
IW-13																		
IW-12																		
IW-5																		
IW-11																		
IW-6																		
IW-10										← SENSOR →								
IW-9																		
IW-8																		
IW-7																		

	Gallons	IS WELL LOCKED?		DOES PUMP RESPOND TO KEY SWITCH?		DOES COUNTER RESPOND TO KEY SWITCH?		ARE REPAIRS NEEDED?		Comments
		YES	NO	YES	NO	YES	NO	YES	NO	
IW-14R										

CONDITION OF PIPING MANIFOLD:	GFI: ON OFF	CARBON DRUMS:

Well No. or Item	REPAIR COMMENTS	SKETCH

Rev #	Date	Item No.	Item
3.1	2013		Added Revision Log

Section 5.4 SOUTH SURFACE WATER DIVERSION BERM

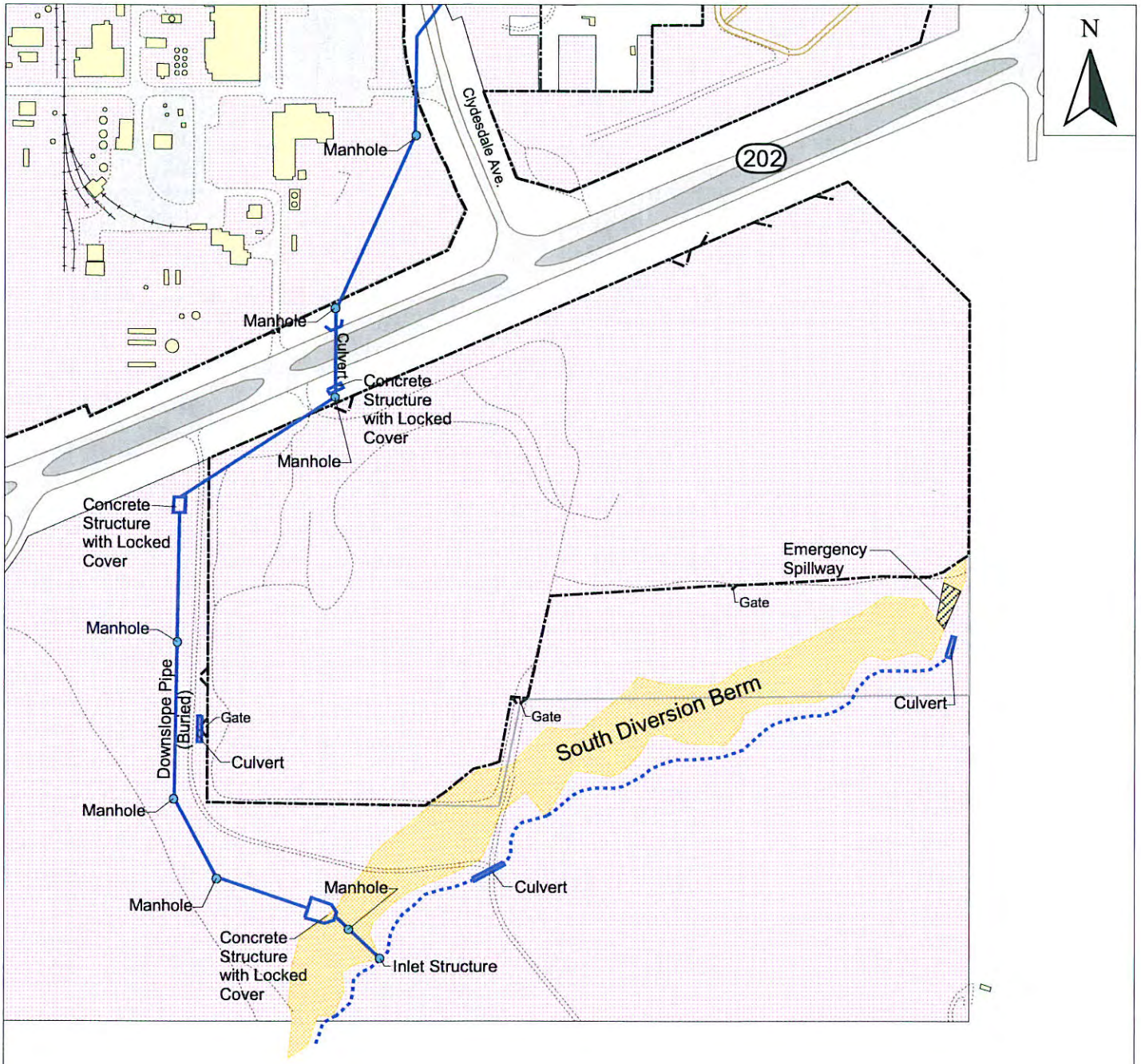
The South Surface Water Diversion Berm (Diversion Berm) is located south of the South Landfill and WMA I along Coldwater Mountain. The Diversion Berm was constructed to divert storm water run-on coming from areas upstream of the South Landfill.

The Diversion Berm system is to be inspected according to the schedule in Section 3.6. The Diversion Berm slopes and vegetative cover will be inspected according to Section 3.3 and Section 3.5 of the O&M Plan. The Diversion Berm inspection includes the following:

- The Diversion Berm structure with interior culverts and emergency spillway;
- The outlet structure, including piping and manholes (downslope pipe); and
- The culvert beneath State Highway 202.

The locations of the Diversion Berm system inspection items are shown on Figure 5.4-1. The Diversion Berm inspection is to be documented on Inspection Log No. 5.4-1. Documentation of the construction of the South Surface Water Diversion Berm is included in the report titled, "Final Report for the Detention, Cap and Cover Project at the Solutia Anniston Facility."

Emergency Spillway Structure



LEGEND

- Fence
- Access Roads
- Berm
- Drainage Ditch

SCALE

200 0 200 400 Feet

Golder Associates

SOLUTIA

Title:

South Surface Water Diversion Berm

Operations & Maintenance Plan

Project/File No:	Produced By:	Checked By:	Reviewed By:	Date:	Figure No:
Q:\...\0116.apr	JES	CMM	SM	14-Apr-2003	5.4-1

Rev. 07/07

SOUTH SURFACE WATER DIVERSION BERM
(Quarterly Inspection)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Side Slopes	SS1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	SS2	Is there soil cracking evident?	Yes		No		"
	SS3	Is there erosion evident?	Yes		No		"
	SS4	Is there settlement or subsidence evident?	Yes		No		"
Site Access	S1	Are access roads in good condition?	Yes		No		(If No, describe below)
Ditches and Drainage Channels	D1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	D2	Is there sediment buildup?	Yes		No		"
Pipes / Culverts & Headwalls	P1	Debris, obstructions or sediments at pipe inlets (obstructing more than $^1/_5$ of the diameter or the pipe)?	Yes		No		(If Yes, describe below)
	P2	Is there erosion around the inlets / outlets?	Yes		No		"
	P3	Any cracks or settlement at inlets / outlets?	Yes		No		"
	P4	Are manhole covers in good condition?	Yes		No		(If No, describe below)
Emergency Spillway	ES1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	ES2	Is there sediment buildup in spillway?	Yes		No		"
	ES3	Are there any cracks or settlement?	Yes		No		"
	ES4	Any sign of use?	Yes		No		"
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS*

Describe any items requiring work. Mark the location of the item on the South Diversion Berm figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013		Added Revision Log

Section 5.5 WEST END LANDFILL AND APCO SWITCHYARD

The West End Landfill is located in the western portion of the Plant Site adjacent to State Highway 202. The West End Landfill is a closed waste disposal area consisting of a single cell covering approximately six acres. An upgrade of the cap and cover system and a new sediment pond were constructed in 1995-1996. There is also an APCO switchyard located in the northern portion of this property. PCBs have been found in the soil underlying the switchyard. Solutia maintains a substantial gravel cover over the area in coordination with APCO. The area is enclosed with a chain link fence, which remains locked to prevent unauthorized entry or trespass.

The West End Landfill area has two different cover systems. One system includes an HDPE geomembrane and the other is an all-soil system. The approximate extent of the combined systems is shown on Figure 5.5-1.

The West End Landfill cap and cover system consist of (from top to bottom):

- Vegetation
- Eighteen inch thick soil cover layer;
- Geosynthetic drainage layer that outlets to the landfill cover ditch along the north, and west sides of the landfill;
- Geomembrane – 60 mil thick textured HDPE geomembrane; and
- Six-inch thick compacted clay foundation layer.

There are no specific locations at the West End Landfill to inspect the outlets of the cover system drainage layer. However, the landfill perimeter ditch must be maintained free of sediment to prevent clogging of the erosion control mats that line the ditch. As the drainage layer outlets under these mats, sediment build up in the ditch will impede the free flow of water from the cover system.

The West End Landfill adjacent area soil cap system consists of (from top to bottom):

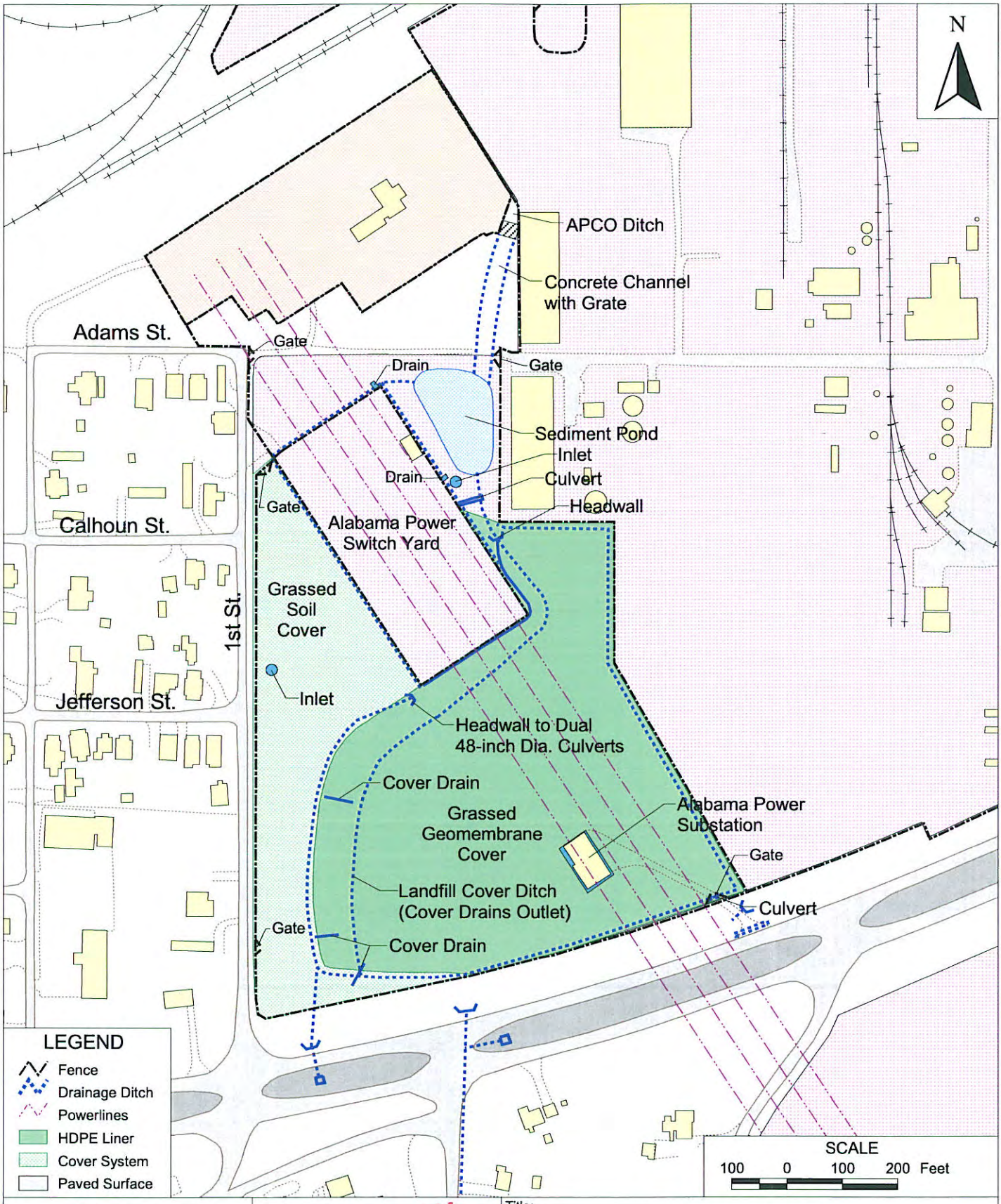
- Eighteen inches of compacted soil with vegetative cover; and
- Former soil surface.

The West End Landfill and surface water management structures, including the concrete channel and grate northeast of the landfill, are to be inspected as described in Section 3.2, Section 3.3, Section 3.5, and Section 3.6 of the O&M Plan. The surface water pond north of the landfill is to be inspected as described in Section 3.5. The APCO Switchyard is to be inspected as described in Section 3.2, and Section 3.3.

Locations of the West End Landfill and APCO Switchyard inspection items are show on Figure 5.5-1. The inspection is to be documented on Inspection Log No. 5.5-1. Documentation of the closure of the West End Landfill is included in the report titled, "Detailed Design Report for the West End Landfill Cover Revisions." The inspection of the APCO Switchyard is to be documented on Inspection Log No. 5.5-2.

Vegetated Side Slope and 48-inch Diameter Culverts Headwall

West End Pond Area



Golder Associates

SOLUTIA

Title:

West End Landfill

Operations & Maintenance Plan

Project/File No:	Produced By:	Checked By:	Reviewed By:	Date:	Figure No:
Q:\...\0116.apr	JES	CMM	SM	14-Apr-2003	5.5-1

Rev. 07/07

WEST END LANDFILL
(Quarterly Inspection)

INSPECTOR: _____ _____
Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Cap & Cover System	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Damage around power poles?	Yes		No		"
	C4	Is there erosion evident?	Yes		No		"
	C5	Are any geosynthetic materials visible?	Yes		No		"
	C6	Is there settlement or subsidence evident?	Yes		No		"
Security Items	S1	Is there any breach of fence?	Yes		No		(If Yes, describe below)
	S2	Is there any erosion along the fence line?	Yes		No		"
	S3	Are signs visible and in good condition?	Yes		No		(If No, describe below)
	S4	Are gates functioning properly?	Yes		No		"
	S5	Are gates locked?	Yes		No		"
	S6	Locks in good condition (signs of rust, etc.)?	Yes		No		"
	S7	Do locks work?	Yes		No		"
Ditches and Drainage Channels	D1	Debris or obstruction in channels?	Yes		No		(If Yes, describe below)
	D2	Is there sediment buildup in channels?	Yes		No		"
	D3	Debris or obstruction in grate?	Yes		No		"
	D4	Any cracks in concrete channel or grate?	Yes		No		"
Pipes / Culverts & Headwalls	P1	Debris, obstructions or sediments at pipe inlets (obstructing more than $^1/_5$ of the diameter or the pipe)?	Yes		No		(If Yes, describe below)
	P2	Is there erosion around the inlets / outlets?	Yes		No		"
	P3	Any cracks or settlement at inlets / outlets?	Yes		No		"
Pond Crest & Side Slopes	PS1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	PS2	Is there soil cracking evident?	Yes		No		"
	PS3	Is there erosion evident?	Yes		No		"
	PS4	Is there settlement or subsidence evident?	Yes		No		"
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"

Mosquito Control: _____
(Note if mosquito dunks have been placed in the pond and number of mosquito dunks used)

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on the West End Landfill figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013		Added Revision Log

Operation and Maintenance Inspection Log 5.5-2

APCO SWITCHYARD
(Quarterly Inspection)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Security Items	S1	Is there any breach of fence?	Yes		No		(If Yes, describe below)
	S2	Is there any erosion along the fence line?	Yes		No		"
	S3	Are signs visible and in good condition?	Yes		No		(If No, describe below)
	S4	Are gates functioning properly?	Yes		No		"
	S5	Are gates locked?	Yes		No		"
	S6	Locks in good condition (signs of rust, etc.)?	Yes		No		"
	S7	Do locks work?	Yes		No		"
Gravel Cover	GC1	Is gravel eroded or washed out?	Yes		No		(If Yes, describe below)
	GC2	Is there settlement or subsidence evident?	Yes		No		"
	GC3	Is there plant growth in or around gravel?	Yes		No		"
	GC4	Is there any noticeable staining or evidence of spills?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on the APCO Switchyard figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure	Date of Request	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013	All	Form Created

Section 5.6 WASTE MANAGEMENT AREA II (WMA II), OLD LIMESTONE BED, AND WMA II CORRECTIVE ACTION INTERCEPTOR WELL SYSTEM

WMA II, the Old Limestone Bed, and the WMA II Corrective Action Interceptor Well System are located in the northwest portion of the Plant Site. WMA II was a non-disposal surface impoundment closed as a landfill cell under the RCRA Part B Permit. ADEM certified this area closed in July 1988. The 30-year post-closure care activities commenced with this effective starting date. WMA II consists of a fenced-in grass mound area with a soil and vegetative cover. The Old Limestone Bed was closed as a landfill in 1982 under an ADEM-approved closure plan. The Old Limestone Bed area is presently covered with an asphalt and concrete cover. The WMA II / Old Limestone Bed area has a groundwater corrective action system consisting of eleven interceptor wells (IW-16 through IW-25, and DW-1), a collection tank and associated piping (WMA II Corrective Action system).

WMA II is to be inspected in accordance with the schedule provided in Section 3.6. The inspection will be performed as described in Section 3.2, and Section 3.3 of the O&M Plan, and as per the requirements stated for post-closure care of this area in the current RCRA Part B Permit Application. A copy of the relevant post-closure care monitoring and inspection requirements is provided for reference in Appendix 5-1 at the end of this Chapter. Post-closure care requirements from the RCRA Part B Permit Application states that this area is to be mowed and fertilized as necessary as described in Section 4.3 of the O&M Plan.

The Old Limestone Bed and the WMA II Corrective Action Interceptor Well System are to be inspected in accordance with the schedule provided in Section 3.6. The inspection is to include:

- Security/access control fence and benchmarks as described in Section 3.2;
- Asphalt and concrete cover systems as described in Section 3.3;
- Interceptor Well System as described in Section 3.4; and
- Surface water control features as described in Section 3.5.

In addition to items listed above, the inspection of the Old Limestone Bed and the WMA II Corrective Action Interceptor Well System is to include:

- Benchmark No. 29;
- Groundwater collection tank;
- Containment dikes, valves and pipes; and

- Functioning of the interceptor well system pump beacon warning light, which will be on if there is a malfunctioning of the system.

Post-closure care requirements under the current RCRA Part B Permit Application require that the asphalt cover for the Old Limestone Bed be re-coated or sealed every two years.

Locations of WMA II, the Old Limestone Bed, and WMA II Corrective Action Interceptor Well System inspection items are shown on Figure 5.6-1. The WMA II and the Old Limestone Bed inspection is to be documented on Inspection Log No. 5.6-1, and the WMA II Corrective Action Interceptor Well System inspection is to be documented on Inspection Log No. 5.6-2.

Groundwater monitoring and maintenance and/or repair of the monitoring wells are included in Chapter 6.0 of the O&M Plan.

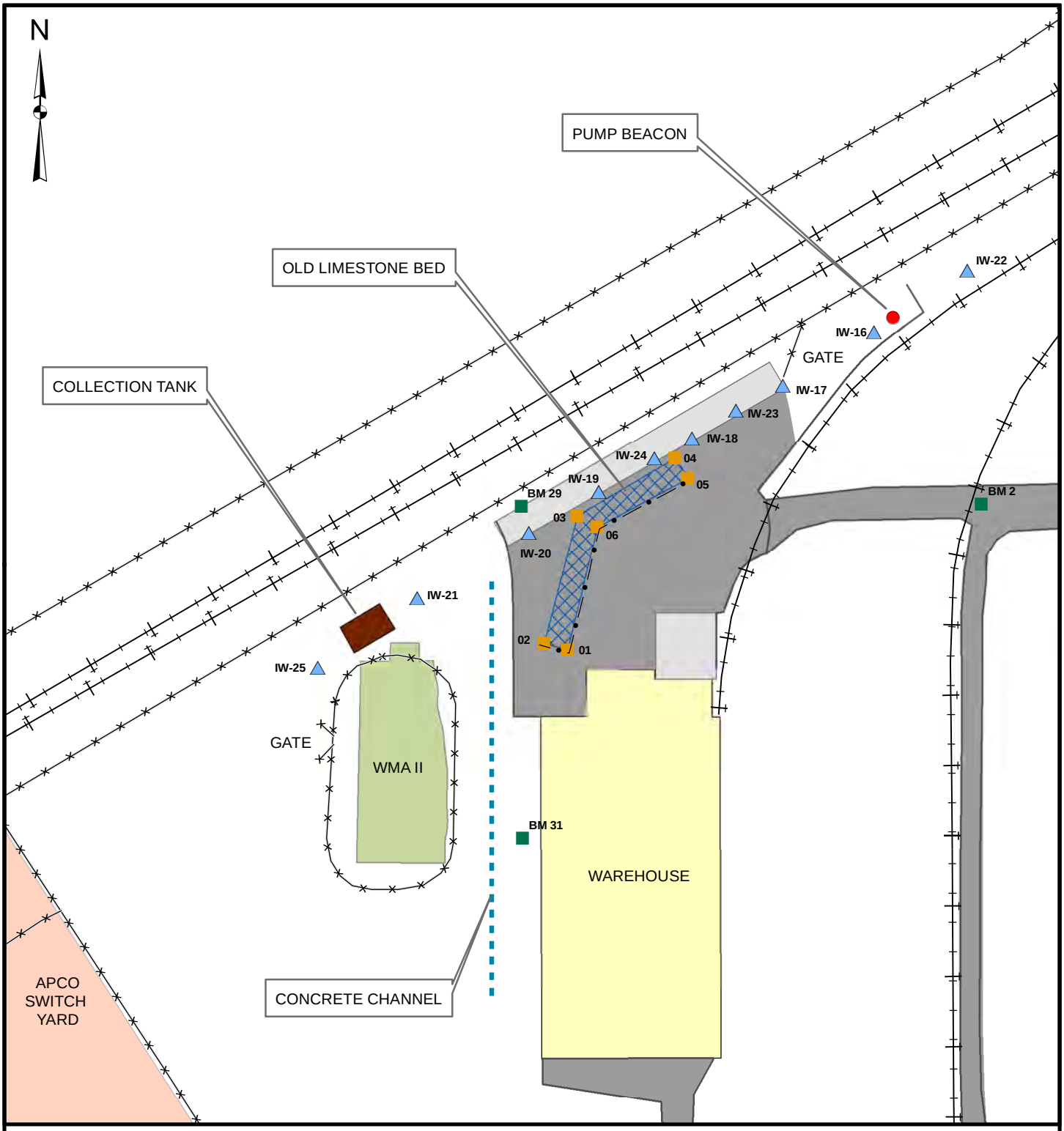
WMA II Fenced Area

Interceptor Wells System

Collection Tank

Pump Beacon Warning Light

Benchmark No. 29



LEGEND

- BENCHMARK / MONUMENT
- OBSLI BENCHMARK / MONUMENT
- INTERCEPTOR WELL
- FENCE
- CONCRETE SURFACE
- ASPHALT SURFACE
- GRASSED COVER SYSTEM
- OLD LIMESTONE BED
- BOLLARDS WITH CHAIN AND SIGNAGE

100 0 100 Feet

PROJECT

SOLUTIA

TITLE

WMA II, OLD LIMESTONE BED, & WMA II CORRECTIVE ACTION SYSTEM OPERATIONS & MAINTENANCE PLAN

Golder Associates

PROJECT No.	1239004OM1-2013A		FILE No.	1239004-W002 OLBSI.mxd
DESIGN	-	-	SCALE: AS SHOWN	REV. 3.1
GIS	RJC	1/10/2014		
CHECK	CMM	1/10/2014		
REVIEW	GLH	1/10/2014		

5.6-1

Map Document: Q:\PROJECTS\2012\123-9004 SolutiaW - O & M\Active Drawings\1239004-W002 OLBSI.mxd / Modified 1/10/2014 9:47:04 AM by rsmalley / Exported 1/10/2014 9:47:20 AM by rsmalley

WMA II AND OLD LIMESTONE BED
(Monthly/Quarterly Inspection)

INSPECTOR: _____
Print Name

_____
Signature

Date of Inspection: _____

Check appropriate inspection:

☐ **WMA II Monthly Inspection**
☐ **OLB Quarterly Inspection**
☐ **Both**

	Item & Item No.		Checklist					
Monthly Inspection	WMA II Cap & Cover System	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
		C2	Is there soil cracking evident?	Yes		No		"
		C3	Is there erosion evident?	Yes		No		"
		C4	Is there settlement or subsidence evident?	Yes		No		"
		C5	Run-off being directed away from the area?	Yes		No		(If No, describe below)
		C6	Run-on being directed away from the area?	Yes		No		"
	Benchmark (BM No. 29)	BM1	Is benchmark in good condition?	Yes		No		(If No, describe below)
		BM2	Is benchmark clear and visible?	Yes		No		"
	WMA II Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
		V2	Does grass appear unhealthy?	Yes		No		"
Monthly Inspection	Security Items - Inspect both the WMA II and the property fence	S1	Is there any breach of fence?	Yes		No		(If Yes, describe below)
		S2	Is there any erosion along the fence line?	Yes		No		"
		S3	Are signs visible and in good condition?	Yes		No		(If No, describe below)
		S4	Are gates functioning properly?	Yes		No		"
		S5	Are gates locked?	Yes		No		"
		S6	Locks in good condition (signs of rust, etc.)?	Yes		No		"
		S7	Do locks work?	Yes		No		"
Quarterly Inspection	OLB Asphalt/Concrete Cover System	AC1	Is asphalt/concrete cracked or torn up anywhere?	Yes		No		(If Yes, describe below)
		AC2	Is there settlement or subsidence evident?	Yes		No		"
		AC3	Is there plant growth in or around asphalt/concrete?	Yes		No		"
		AC4	Benchmarks (2, 29 & 31) in good condition?	Yes		No		(If No, describe below)
		AC5	Benchmarks (2, 29 & 31) clear and visible?	Yes		No		"
		AC6	Are bollards and chains in good condition?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS*

Describe any items requiring work. Mark the location of the item on the WMA II and OLBCAS figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Date asphalt surface last re-coated or sealed: _____

3.1

Form Revision Log

Rev #	Date	Item No.	Item
3.1A	2013	AC4 - AC6	OLB Asphalt / Concrete Cover Systems Added
3.1B	2013		Added Revision Log

WMA II CORRECTIVE ACTION SYSTEM
(Weekly Inspection)

INSPECTOR: _____ _____
Print Name *Signature*

Date of Inspection: _____

NUMBER OF WELL	METER READING/ NUMBER OF COUNTS	IS WELL LOCKED?		IS FLOAT VISIBLE?		DOES PUMP RESPOND TO KEY SWITCH?		DOES METER RESPOND TO KEY SWITCH?		DOES PUMP RESPOND TO FLOAT SWITCH?		RESET TO AUTO?		ARE REPAIRS NEEDED?	
		YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
IW-25															
IW-24															
IW-23															
IW-22															
IW-21															
IW-20															
IW-19															
IW-18															
IW-17															
IW-16															

NUMBER OF WELL	IS WELL LOCKED?		CONDITION OF FILTER		COMPRESSOR CONDITION		TIMER CONDITION	
	YES	NO	CLEAN	DIRTY	OK	REPAIR	OK	REPAIR
DW-1								

TOTALIZER READING:

SKETCH

CONDITION OF GROUNDWATER COLLECTION TANK & DIKE 007:		
Are there any defects in the Tank?	YES	NO
Are the pipes connected to the tank leaking or cracked?	YES	NO
Is dike drain valve locked?	YES	NO
Is dike drain valve sign in place?	YES	NO
Pump Beacon Warning Light:: ON (If "ON" explain below) OFF		

Well or Item	REPAIR COMMENTS	DATE REPAIRS COMPLETED*

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013		Added Revision Log

Section 5.7 EAST SIDE REMEDIATION / DETENTION POND AREA

The East Side Area Remediation / Detention Pond Area is bounded to the north by 10th Street, to the east by Montrose Avenue, to the south by State Highway 202, and to the west by Clydesdale Avenue. The East Side Area consists of cover systems (vegetation, soil, and geotextile) intended to reduce exposure to PCB-containing soil. The Detention Pond is located in the southeastern portion of the East Side Area near the intersection of State Highway 202 and Zinn Parkway. The Detention Pond was constructed to reduce the potential for flooding of the East Side Area, by retarding surface water flow from the South Landfill areas. A berm constructed downstream of the Detention Pond also provides flood protection in case the Detention Pond overflows. A secondary emergency spillway has been built on this berm. A concrete inlet collects and discharges surface water from the area between the Detention Pond and the berm.

The East Side Remediation/Detention Pond is to be inspected in accordance with the schedule listed in Section 3.6 and after significant storm events. The inspection is to include:

- Security/access control fence as described in Section 3.2;
- The East Side Area cover systems as described in Section 3.3;
- The Detention Pond as described in Section 3.5;
- The emergency spillways, culverts, pipe inlet area, piping, and cleanouts as described in Section 3.5; and
- Culvert outlets and headwalls located along the northern side of State Highway 202 as described in Section 3.5.

Detention Pond inspection items include the side slope vegetation, the principal spillway, pond outlet, the emergency spillway, pond inlet, access ramp, and the adjacent culvert and pipe inlet.

Maintenance of the pond will include mosquito control using Mosquito Dunks®. These are thrown into the water once a month, or as needed, and will effectively treat (i.e. eliminate mosquitoes) up to 100 square feet of surface water regardless of the water depth. Dunks may be broken into pieces to treat small areas. Unused and dried out Dunks will retain their potency indefinitely. Manufacturing information about the Mosquito Dunks® is included with this section.

Locations of the East Side Remediation Area/Detention Pond inspection items are shown on Figure 5.7-1. The East Side Remediation Area inspection is to be documented on Inspection Log No. 5.7-1.

Documentation of the construction of the East Side Remediation/Detention Pond Area is included in the report titled, "Final Report for the Detention Cap and Cover Project at the Solutia Anniston Facility."

The inspection of the 10th Street Dissipater Concrete Structure located in the northern portion of the East Side Area is addressed separately in Section 5.8 of the O&M Plan.

Detention Pond

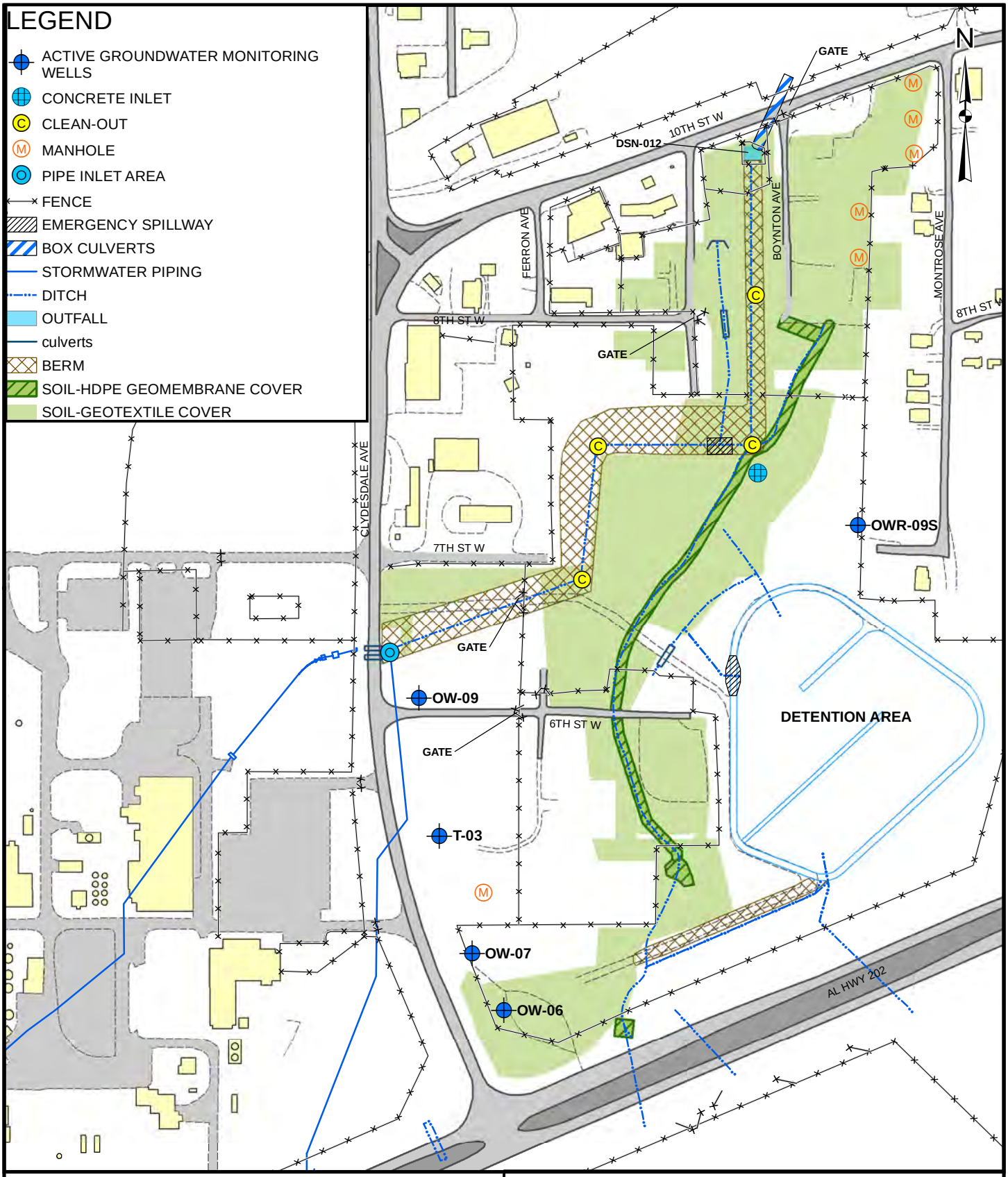
Detention Pond Principal Spillway at Permanent Pool

Detention Pond Emergency Spillway

East Side Covered Area looking at Detention Pond Outlets

East Side Area Basin Emergency Spillway

East Side Area Basin Outlet Structure



Map Document: Q:\PROJECTS\2012\123-9004 SolutiaW - O & M\Active Drawings\1239004-W004 Eastside.mxd / Modified 1/10/2014 9:49:52 AM by rsmalley / Exported 1/10/2014 9:50:04 AM by rsmalley

PROJECT

SOLUTIA

TITLE

EASTSIDE AREA OPERATIONS & MAINTENANCE PLAN

Golder Associates

PROJECT No.	1239004OM1-2013A		FILE No.	1239004-W004 Eastside.mxd
DESIGN	-	-	SCALE: AS SHOWN	REV. 3.1
GIS	RJC	1/10/2014		
CHECK	CMM	1/10/2014		
REVIEW	GLH	1/10/2014		

5.7-1

EAST SIDE REMEDIATION/DETENTION POND AREA
(Inspect quarterly and after significant storm events)

INSPECTOR: _____ _____
Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Security Items	S1	Is there any breach of fence?	Yes		No		(If Yes, describe below)
	S2	Is there any erosion along the fence line?	Yes		No		"
	S3	Are signs visible and in good condition?	Yes		No		(If No, describe below)
	S4	Are gates functioning properly?	Yes		No		"
	S5	Are gates locked?	Yes		No		"
	S6	Locks in good condition (signs of rust, etc.)?	Yes		No		"
	S7	Do locks work?	Yes		No		"
Pond/Berm Crest & Side Slopes	PS1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	PS2	Is there soil cracking evident?	Yes		No		"
	PS3	Is there erosion evident?	Yes		No		"
	PS4	Is there settlement or subsidence evident?	Yes		No		"
Covered Areas	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Is there erosion evident?	Yes		No		"
	C4	Is there settlement or subsidence evident?	Yes		No		"
Ditches and Drainage Channels	D1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	D2	Is there sediment buildup?	Yes		No		"
Pipes / Culverts and Headwalls	P1	Debris, obstructions or sediments at pipe inlets (obstructing more than $^1/_5$ of the diameter or the pipe)?	Yes		No		(If Yes, describe below)
	P2	Is there erosion around the inlets / outlets?	Yes		No		"
	P3	Any cracks or settlement at inlets / outlets?	Yes		No		"
Pond Outlets	PO1	Is there debris or obstruction at pond outlet?	Yes		No		(If Yes, describe below)
	PO2	Are orifices clogged or not free flowing?	Yes		No		"
	PO3	Any cracks or settlement at outlet?	Yes		No		"
	PO4	What is the water level and flow relative to outlet orifices and/or top of pond. Describe below.					
Emergency Spillways	ES1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	ES2	Is there sediment buildup in spillway?	Yes		No		"
	ES3	Are there any cracks or settlement?	Yes		No		"
	ES4	Any sign of use?	Yes		No		"
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"

Water Level / Flow Conditions: Water Level: _____
(Note number of orifices that are open)

Mosquito Control: _____
(Note if mosquito dunks have been placed in the pond and number of mosquito dunks used)

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on the East Side Area figure as necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013		Added Revision Log

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

POST OFFICE BOX 301463 36130-1463 • 1400 COLISEUM BLVD. 36110-2059

MONTGOMERY, ALABAMA

WWW.ADEM.STATE.AL.US

(334) 271-7700

JAMES W. WARR
DIRECTOR

DON SIEGELMAN
GOVERNOR

Facsimiles: (334)
Administration: 271-7950
General Counsel: 394-4332
Air: 279-3044
Land: 279-3050
Water: 279-3051
Groundwater: 270-5631
Field Operations: 272-8131
Laboratory: 277-6718
Mining: 394-4326
Education/Outreach: 394-4383

January 6, 2003

CRAIG R. BRANCHFIELD
MANAGER REMEDIAL PROJECTS
SOLUTIA INC
702 CLYDESDALE AVE
ANNISTON AL 36201-5328

RE: Mosquito Controls for Detention Basin

Dear Mr. Branchfield:

This letter is in reply to your letter dated September 10, 2002, regarding the use of Mosquito Dunk© in the storm water detention basin which discharges through outfall DSN 012.

The Department tentatively approves the use of Mosquito Dunk© as long as it is applied in accordance to the manufacturer's specifications and the application follows the ADPH's guidelines for mosquito control.

Should you have any questions concerning this matter, please contact me at 334-271-7945.

Sincerely,

Sheri Festoso

Sheri Festoso
Industrial Section
Water Division

Birmingham Branch
110 Vulcan Road
Birmingham, Alabama 35209-4702
(205) 942-6168

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, Alabama 35603-1333
(256) 353-1713

Mobile Branch
2204 Perimeter Road
Mobile, Alabama 36615-1131
(251) 450-3400

Mobile – Coastal
4171 Commanders Drive
Mobile, Alabama 36615-1421

Summit Chemical .. responsible solution

MOSQUITO DUNKS®

kill mosquito larvae in the Water Gard & other standing water around the hon before they are old enough to bite.

Water gardens and Ponds

Rain Barrels

Clogged Gutters

Old Tires

Flower Pots

Tree Holes

Bird Bath

Dunks Work!

Used by professionals for more that a decade, Mosquito Dunks® have proven their value in destroying Mosquitoes - by killing the larvae before they mature into biting adult pests. Dunks, along with B.t.i. Briquets, are the only *sustained-release* B.t.i. mosquito larvicides available.

Made with natural B.t.i., Mosquito Dunks represent a major breakthrough for people and the environment when compared with the traditional toxic chemical approach to mosquito control.

Dunks Are Simple!

Once a month float a Dunk in the W Garden and every place water accumul around your home - you'll be rid mosquitoes for the whole season. Each D will effectively treat up to 100 square fee surface water regardless of depth. Du may be broken to treat small areas.

Unused and dried out Dunks retain t potency indefinitely. That's a great shelf li

Merchandising With a Big Bite!

Item #102-12
2 Dunks carded
12 Cards per Cs./1.25 Lbs.
Size: 5 3/4 x 6 1/2 x 9 7/8"
0-18506 00102-5

Item #110-12
6 Dunks carded
12 Cards per Cs./4 Lbs.
Size: 9 7/8 x 5 3/4 x 12. 5/8"
0-18506 00110-5

Item #102-24
2 Dunks carded
12 Cards per strip
12 Strips per Cs./2.5 Lbs.
Size: 6 x 33 1/2 x 2 1/2"
0-18506 00102-5

Jumbo Pack Item #111
20 Dunks per Blister. 5 Lbs.
5 Blister cards per Cs. 13x 3/4 x 5"

NEW!
For the Water Garden

Cover up your Dunk with a Waterlily.

Kill mosquitoes and add a splash of color to the pond.

Item #118-12
2 Dunks with 1 Lily carded
12 Cards per PK./1.75 Lbs.
Size: 7 x

Item #110-12
6 Dunks carded
12 Cards per Cs./4 Lbs.
Size: 9 7/8 x 5 3/4 x 12. 5/8"
0-18506 00110-5

Section 5.8 10TH STREET DISSIPATER AREA

The 10th Street Dissipater Area consists of a concrete structure (dissipater), pipes, and box culverts as shown in Figure 5.8-1 that collects surface flow from the Plant Site and South Landfill that flows by pipes through the East Side Area. Water comes into the concrete dissipater though six 36-inch diameter, one 24-inch diameter, and one 18-inch diameter pipes. The water collected is then discharged through a weir to a drop box that directs the water to box culverts constructed under West 10th Street. These culverts direct the water to a drainage ditch on the northern side of West 10th Street. The area adjacent to this ditch has been covered with an earthen cover.

The 10th Street Dissipater Area is to be inspected in accordance with the schedule listed in Section 3.6 and after significant storm events. The inspection is to include:

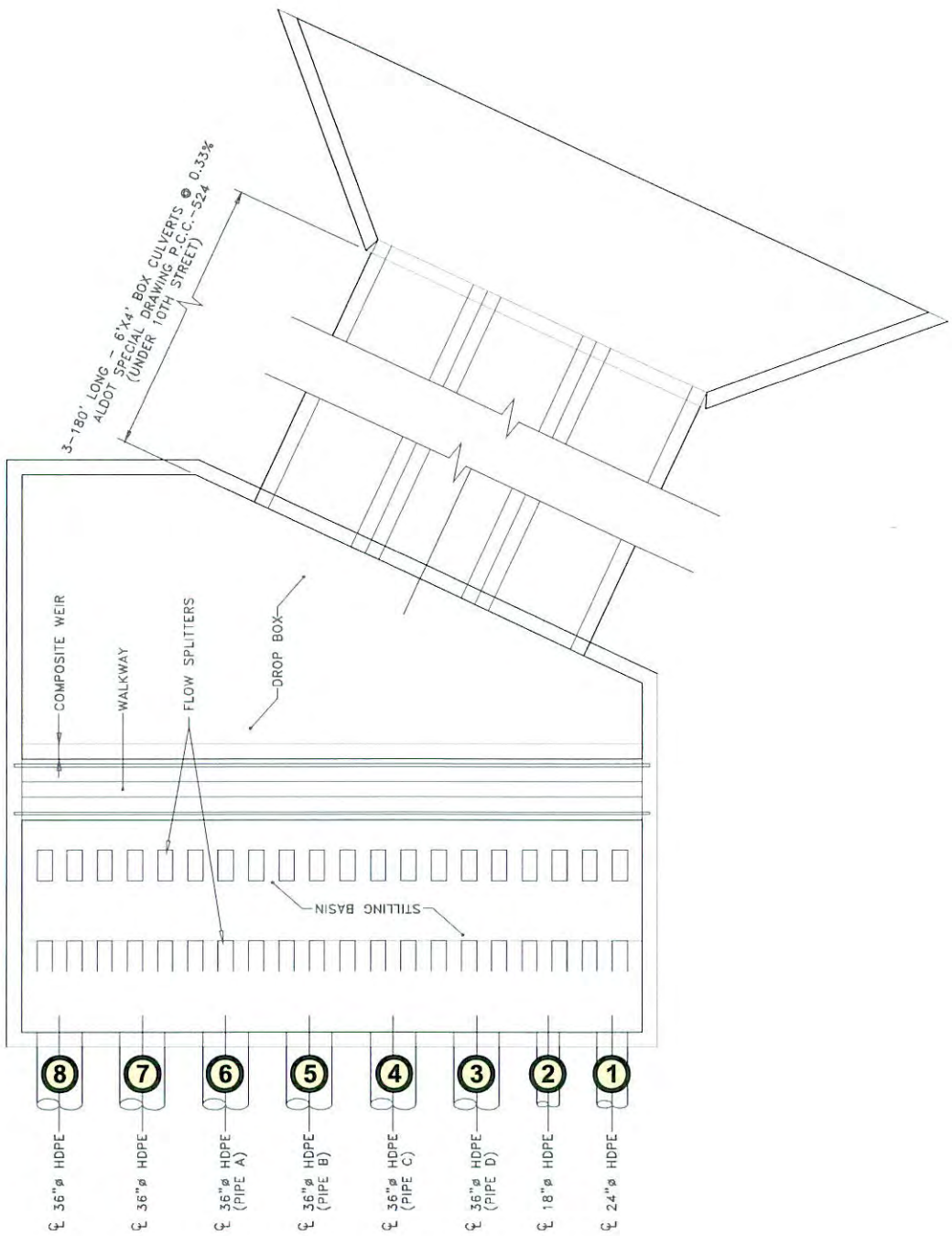
- Security/access control fence and signs as described in Section 3.2; and
- The culverts, pipe inlet area, piping, manholes, and the 10th Street Dissipater Box that were constructed to dissipate energy from storm water flowing from the Plant site and surrounding areas as described in Section 3.5.

The 10th Street Dissipater Area inspection is to be documented on Inspection Log No. 5.8-1. Documentation of the construction of the 10th Street Dissipater area is included in the report titled, "Final Report for the Detention, Cap and Cover Project at the Solutia Anniston Facility."

10th Street Dissipater Stilling Basin

Dissipater Weir Structure

Box Culverts under West 10th Street



1	East Detention Area Drainage
2	Detention Pond Drainage
3	South Diversion Berm
4	Hwy. 202, Eastside, Clydesdale Ave. & Plantside Drainage
5 & 6	Front Plant Discharge
7 & 8	Lower Detention Basin Drainage

Golder Associates

SOLUTIA

Title:

10th Street Dissipater

Operations & Maintenance Plan

Project/File No:	Produced By:	Checked By:	Reviewed By:	Date:	Figure No:
Q:\...\0116.apr	JES	CMM	SM	14-Apr-2003	5.8-1

Rev. 07/07

10th STREET DISSIPATER
(Inspect quarterly and after significant storm events)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Security Items	S1	Is there any breach of fence?	Yes		No		(If Yes, describe below)
	S2	Is there any erosion along the fence line?	Yes		No		"
	S3	Are signs visible and in good condition?	Yes		No		(If No, describe below)
	S4	Are gates functioning properly?	Yes		No		"
	S5	Are gates locked?	Yes		No		"
	S6	Locks in good condition (signs of rust, etc.)?	Yes		No		"
	S7	Do locks work?	Yes		No		"
10th Street Dissipater	DS1	Is there any debris or obstructions?	Yes		No		(If Yes, describe below)
	DS2	Is there sediment buildup in dissipater?	Yes		No		"
	DS3	Are there any cracks or settlement?	Yes		No		"
	DS4	Is there spalling of concrete near pipe inlets?	Yes		No		"
	DS5	Is there erosion around dissipater?	Yes		No		"
Pipes / Culverts & Headwalls	P1	Debris, obstructions or sediments at pipe inlets (obstructing more than $^1/_5$ of the diameter or the pipe)?	Yes		No		(If Yes, describe below)
	P2	Is there erosion around the inlets / outlets?	Yes		No		"
	P3	Any cracks or settlement at inlets / outlets?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on the 10th Street Dissipator figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013		Added Revision Log

Section 5.9 NORTHSIDE COVER / EXTENSION AREA

The Northside Cover / Extension Area is approximately bounded to the north by West 10th Street, to the east by Clydesdale Avenue, to the south by the Norfolk Southern Railroad tracks, and 200 feet west of Bancroft Avenue. The Northside Cover / Extension Area consists of an asphalt and a soil cover system constructed to reduce the potential for exposure to PCB-containing soil. The cover systems for the Northside Cover / Extension Area are:

Northside Cover / Extension Asphalt Cover (From Top to Bottom):

- Three inch asphalt surface;
- Six inches of dense graded aggregate; and
- Geotextile or HDPE geomembrane layer.

Northside Cover / Extension Soil Cover (From Top to Bottom):

- 14 inches of soil with vegetative cover; and
- Geotextile or HDPE geomembrane layer.

Two drainage ditches on the Northside Cover / Extension area were also covered. A drainage ditch that previously ran through the property was covered by geotextile and backfilled with as much as 3 to 5 feet of clean fill. A 40-mil HDPE geomembrane liner was then placed over the ditch area and covered with 14 inches of soil cover. A smaller ditch segment located north of the railroad tracks was lined with a 40-mil HDPE geomembrane liner, 12 inches of soil, and 4 inches of concrete.

In addition to the covered areas, a 42-inch diameter HDPE pipeline was constructed to convey surface water from the south end of the area to an existing culvert that runs along the north side of West 10th Street. An impoundment has been created by constructing a low berm along West 10th Street, Parkwin Avenue, and Duncan Avenue. This area collects stormwater runoff from the covered area, as well as the overflow from the 42-inch diameter pipe that cannot be accommodated during high flow conditions by the culvert along West 10th Street. The berm is equipped with an emergency spillway, and there is an inlet/outlet structure in the impounded area designed to discharge stormwater collected behind the berm to the storm sewer system running eastwards along West 10th Street.

The Northside Cover / Extension Area is to be inspected in accordance with the schedule listed in Section 3.6. The inspection will performed as described in Section 3.2, Section 3.3, and Section 3.5 of the O&M Plan.

Locations of the Northside Cover / Extension Area inspection items are shown on Figure 5.9-1. The inspection items are to be documented on Inspection Log No. 5.9-1. Documentation of the construction of the Northside Cover/Extension Area is included in the report titled, "Northside Cover Extension Interim Measures Report and Northside Cover Extension Interim Measures Report Addendum."

Northside Impoundment Area (Emergency Spillway and Outlet/Inlet Structure)

Northside Cover Area

LEGEND

- FENCE
- ACTIVE GROUNDWATER MONITORING WELLS
- OUTLET/MANHOLE COVER
- BOX CULVERT
- DRAINAGE DITCH
- 42" DIAMETER HDPE PIPE
- EMERGENCY SPILLWAY
- CONCRETE COVER
- PERIMETER BERM
- SOIL GEOTEXTILE COVER
- SOIL-HDPE GEOMEMBRANE MULTI-LAYER COVER
- ASPHALT AND NON-WOVEN GEOTEXTILE MULTI-LAYER COVER; ASPHALT COVER REPAIR AREA
- ASPHALT AND HDPE GEOMEMBRANE MULTI-LAYER COVER

200 0 200

Feet

PROJECT

SOLUTIA

TITLE

NORTHSIDE AREA / EXTENSION AREA OPERATIONS & MAINTENANCE PLAN

Golder Associates

PROJECT No.	1239004OM1-2013A		FILE No.	1239004-W003 Northside.mxd
DESIGN	-	-	SCALE: AS SHOWN	REV. 3.1
GIS	RJC	1/10/2014		
CHECK	CMM	1/10/2014		
REVIEW	GLH	1/10/2014		

5.9-1

Map Document: Q:\PROJECTS\2012\123-9004 SolutiaW - O & M\Active Drawings\1239004-W003 Northside.mxd / Modified 1/10/2014 9:48:57 AM by rsmalley / Exported 1/10/2014 9:49:08 AM by rsmalley

NORTHSIDE COVER/EXTENSION AREA
(Quarterly Inspection)

INSPECTOR: _____ _____
Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Security Items	S1	Is there any breach of fence?	Yes		No		(If Yes, describe below)
	S2	Is there any erosion along the fence line?	Yes		No		"
	S3	Are gates functioning properly?	Yes		No		(If No, describe below)
	S4	Are gates locked?	Yes		No		"
	S5	Locks in good condition (signs of rust, etc.)?	Yes		No		"
	S6	Do locks work?	Yes		No		"
Cap & Cover System (HDPE Lined area)	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Is there erosion evident?	Yes		No		"
	C4	Is there settlement or subsidence evident?	Yes		No		"
Asphalt Cover System	AC1	Is asphalt cracked or torn up anywhere?	Yes		No		(If Yes, describe below)
	AC2	Is there settlement or subsidence evident?	Yes		No		"
	AC3	Is there plant growth in or around asphalt?	Yes		No		"
Covered Areas	CA1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	CA2	Is there soil cracking evident?	Yes		No		"
	CA3	Is there erosion evident?	Yes		No		"
	CA4	Is there settlement or subsidence evident?	Yes		No		"
Berm Crest & Side Slopes	PS1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	PS2	Is there soil cracking evident?	Yes		No		"
	PS3	Is there erosion evident?	Yes		No		"
	PS4	Is there settlement or subsidence evident?	Yes		No		"
Ditches and Drainage Channels	D1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	D2	Is there sediment buildup?	Yes		No		"
Pipes / Culverts and Headwalls	P1	Debris, obstructions or sediments at pipe inlets (obstructing more than $^1/_5$ of the diameter or the pipe)?	Yes		No		(If Yes, describe below)
	P2	Is there erosion around the inlets / outlets?	Yes		No		"
	P3	Any cracks or settlement at inlets / outlets?	Yes		No		"
Pond Outlets	PO1	Is there debris or obstruction at pond outlet?	Yes		No		(If Yes, describe below)
	PO2	Are orifices clogged or not free flowing?	Yes		No		"
	PO3	Any cracks or settlement at outlet?	Yes		No		"
	PO4	What is the water level and flow relative to outlet orifices and/or top of pond?					
DESCRIBE:		None					
Emergency Spillways	ES1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	ES2	Is there sediment buildup in spillway?	Yes		No		"
	ES3	Are there any cracks or settlement?	Yes		No		"
	ES4	Any sign of use?	Yes		No		"
Vegetative Cover	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS

3.1

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013		Added Revision Log

Section 5.10 MCC WAREHOUSE

The MCC Warehouse is a pre-engineered, single span, rigid frame steel building constructed on a concrete slab on grade, located adjacent to the main entrance to the Plant site. The concrete foundation walls are exposed around the perimeter of the building. Two concrete square drainage ditches are located along the exterior foundation wall and drain to a catch basin at the southeast corner of the building. A rail spur is located along the west side of the building and is used for the delivery of raw material and shipment of finished goods. The rail spur is approximately 18 feet wide and is bounded on the east by the warehouse foundation wall and on the south and west by a concrete retaining wall.

The Remedial Actions implemented at the MCC Warehouse included:

- Replacement of the lower 12 feet of siding panels along the entire length of the south end wall, and portions of the east sidewall and west sidewall lengths. An additional 20 feet of steel siding was replaced from the east wall, north of the loading dock in the southeast corner of that wall;
- Decontamination and encapsulation of the interior concrete floor surface for a width of 5 feet, along the entire interior perimeter of the building;
- Decontamination and encapsulation of the exterior concrete foundation walls adjacent to areas described above and two concrete drainage ditches along the exterior of the south and east walls; and
- Asphalt capping of a rail spur adjacent to the west wall.

Encapsulation of cleaned concrete surfaces consisted of applying two coats of paint with contrasting colors: first coat is red, and second coat is gray. The contrasting colors allow for immediate assessment of the integrity of the encapsulation during inspections.

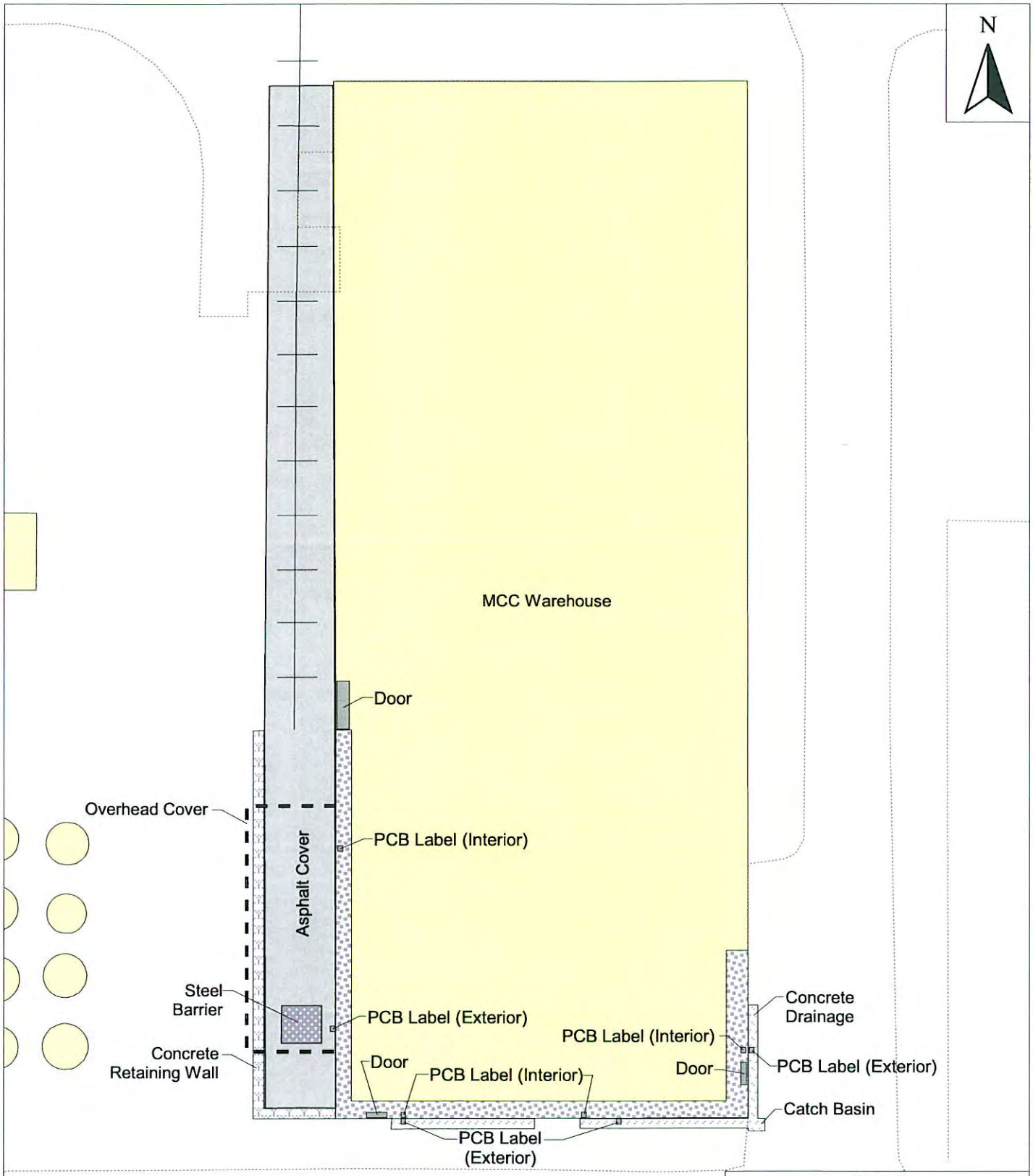
The cap over the rail spur consists of 6 to 12 inches of dense graded aggregate topped by 2 inches of asphalt pavement.

The MCC Warehouse is to be inspected in accordance with the schedule listed in Section 3.6. The inspection will performed as described in Section 3.2, Section 3.3, and Section 3.5 of the O&M Plan.

Locations of the MCC Warehouse inspection items are shown on Figure 5.10-1. The inspection items are to be documented on Inspection Log No. 5.10-1. Documentation of the remediation of the MCC Warehouse is included in the Report titled, “MCC Warehouse Interim Measures Report,” dated September 2002.

Warehouse Painted Foundation Walls and Ditches

Rail Spur West of Warehouse



Golder Associates

SOLUTIA

Title:

MCC Warehouse

Operations & Maintenance Plan

Project/File No:	Produced By:	Checked By:	Reviewed By:	Date:	Figure No:
Q:\...\0116.apr	JES	CMN	SM	14-Apr-2003	5.10-1

Rev. 07/07

MCC WAREHOUSE
(Quarterly Inspection)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Asphalt Cover on Rail Spur	AC1	Is asphalt cracked or torn up anywhere?	Yes		No		(If Yes, describe below)
	AC2	Is there settlement or subsidence evident?	Yes		No		"
	AC3	Is there plant growth in or around asphalt?	Yes		No		"
	AC4	Is there any noticeable staining or evidence of spills?	Yes		No		"
Painted Surfaces	P1	Is there any red paint showing on the walls or ditches?	Yes		No		(If Yes, describe below)
	P2	Is there any noticeable staining or evidence of spills?	Yes		No		"
USEPA PCB "M_L" Label	L1	Are "M_L" labels legible on concrete surface?	Yes		No		(If No, describe below)

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on the MCC Warehouse figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log

Form Revision Log

Rev #	Date	Item No.	Item
3.1A	2011	AC4	Asphalt Cover System Added
3.1B	2012	P2	Painted Surface Added
3.1C	2013		Added Revision Log

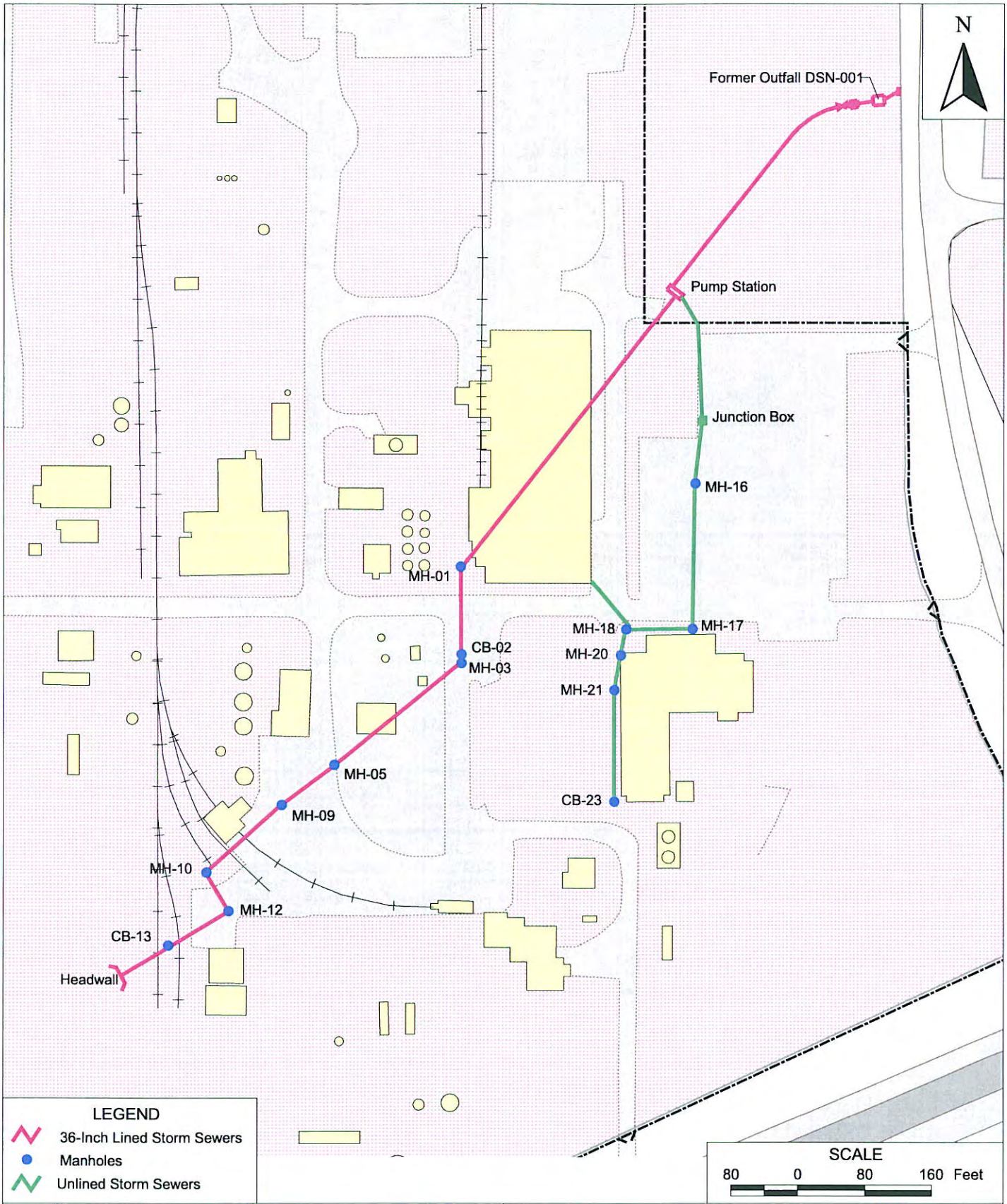
Section 5.11 LINED PLANT STORM SEWER

Approximately 2,000 feet of the Plant's storm sewer piping has been lined with a polyurethane coating which forms a jointless, cured-in-place solid tube. This work was done to rehabilitate some of the older pipes that were found to be leaking.

The storm sewer line is to be inspected in accordance with the schedule listed in Section 3.6. The inspection will be done with a video camera specifically designed and used to inspect the interior condition of buried pipes.

The location of the lined pipe is shown on Figure 5.11-1. The video inspection is to be documented on Inspection Log No. 5.11-1.

Plant Storm Sewer Pipe Drop Inlet Area



Golder Associates

SOLUTIA

Title:

Storm Sewer System

Operations & Maintenance Plan

Project/File No:	Produced By:	Checked By:	Reviewed By:	Date:	Figure No:
Q:\...\0116.apr	JES	CMM	SM	14-Apr-2003	5.11-1

Rev. 07/07

PLANT STORM SEWER VIDEO INSPECTION
(Inspect every 5 years)

INSPECTOR: _____

Date of Inspection: _____

Segment Number: _____ Host Pipe Diameter: _____ Segment Length: _____

COMMENTS: _____

_____

_____

_____

_____

Type:
1. Clay
2. Concrete
3. Iron
4. PVC
5. Steel
6. Asbestos
7. Other _____

STATION			External Rehabilitation						Service Problems			General			Flow	Remarks
		Service Position (Left, Right, Top)	Collapsed Pipe	Broken or Shattered Pipe	Cracked Pipe	Deteriorated Pipe	Dropped Joint or Sheared Pipe	Roots at Joint (Light, Med. Or Heavy)	Leaking Service	Service Protruding Into Line	Roots in Service (Light, Med. Or Heavy)	Swag in Line	Camera in Water	Camera will not pass	I/I Located (gpm)	
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																

_____ MH No.

_____ direction of flow

>>>>>>

>>>>>>

>>>>

_____ direction of camera

_____ Depth

_____ MH No.

_____ Depth

Video Tape _____

Page Number: _____

Inspector Signature: _____

Section 5.12 CARBON TREATMENT UNIT FOR SWMU 1 CORRECTIVE ACTION SYSTEM

The carbon treatment unit for the SWMU 1 Corrective Action System is located south of State Highway 202 across from the Plant Site and north of the South Landfill. The location of the treatment unit is shown on Figure 1.2-1. The system consists of a carbon treatment unit used to treat groundwater pumped from recovery well IW-10. The carbon treatment unit is housed in a pre-fabricated shed that was constructed on a concrete pad. The shed is equipped with a heat lamp, and all external piping is heat traced and insulated. The system consists of two activated carbon drums installed in series. The discharge line from recovery well IW-10 has been directed to this carbon system. After passing through the system, the effluent from the carbon unit is directed back to the original manifold for eventual discharge to the plant's equalization basin. A back–flow preventer has been installed after the second drum to prevent effluent from the other wells from being pumped through the system. In-line pressure gauges have been installed before each drum to monitor for potential plugging, and a sample port was included to monitor potential breakthrough in the first drum. Shut-off valves have been installed before the first drum and after the second drum. Additionally, a series of three-way valves have been installed before and after each drum. This combination of valves allows for either drum to be bypassed, both drums to be bypassed, or the whole system to be shut down during drum exchange and system maintenance.

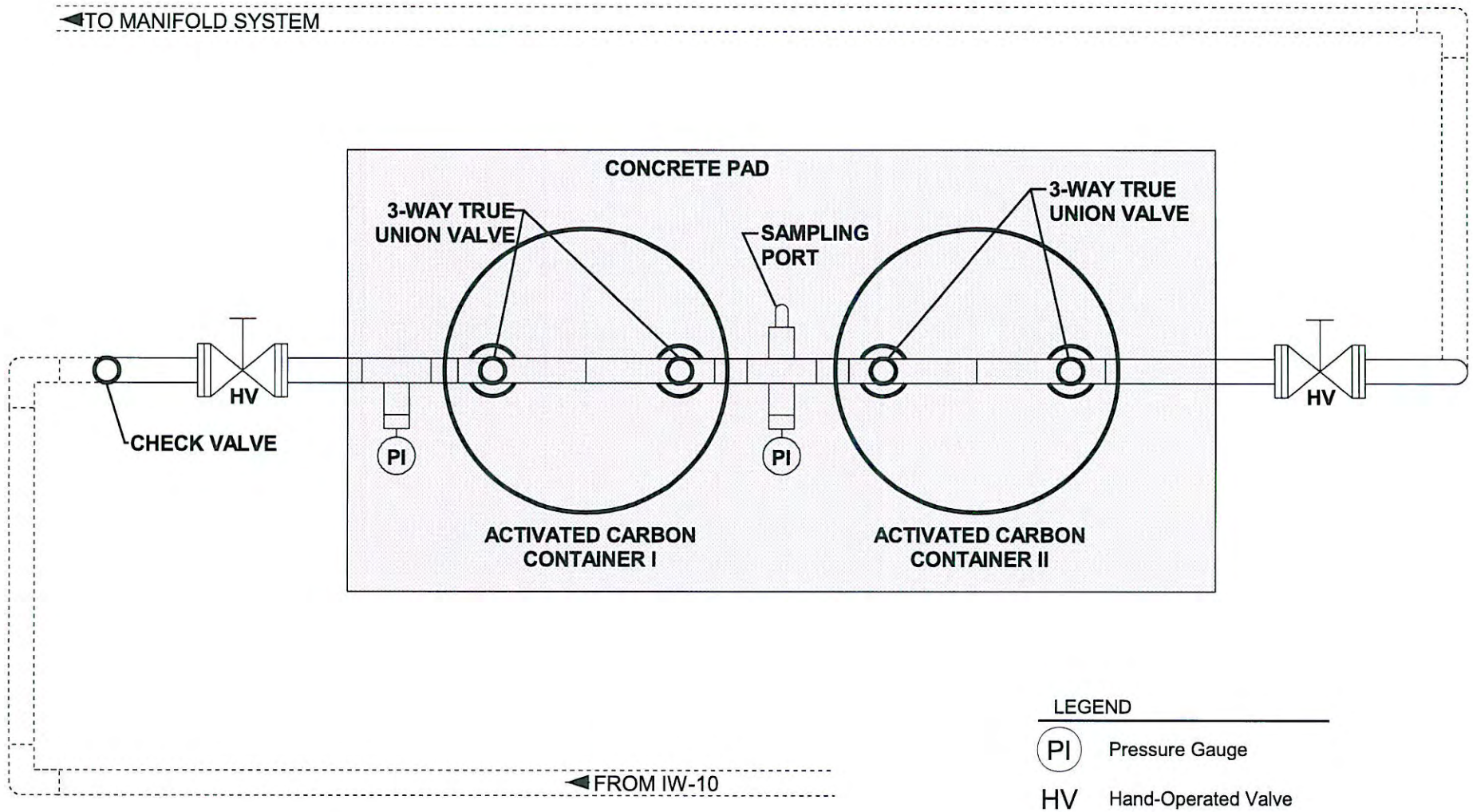
The carbon treatment unit is to be inspected according to the schedule in Section 3.6. Breakthrough monitoring of PCBs will be done on a quarterly basis. When breakthrough on the first drum or fouling on either drum has occurred, a new drum will be installed. The treatment unit inspection includes the following:

- The piping and connections for the carbon treatment system; and
- The pressure gauges to monitor for fouling.

A layout for the carbon treatment unit is shown on Figure 5.12-1. The carbon treatment unit inspection is to be documented on Inspection Log No. 5.3-2. Documentation of the construction and O&M requirements for the Carbon Treatment Unit is included in the Section C – Exhibit 7 of the Post-Closure Permit Application.

Carbon Treatment Drums in Pre-Fabricated Shed

Recovery Well IW-10



LEGEND

PI	Pressure Gauge
HV	Hand-Operated Valve

NOTES:
- All fittings are true union connections or flanges.
- Piping materials are PVC schedule 40 of appropriate dimensions.

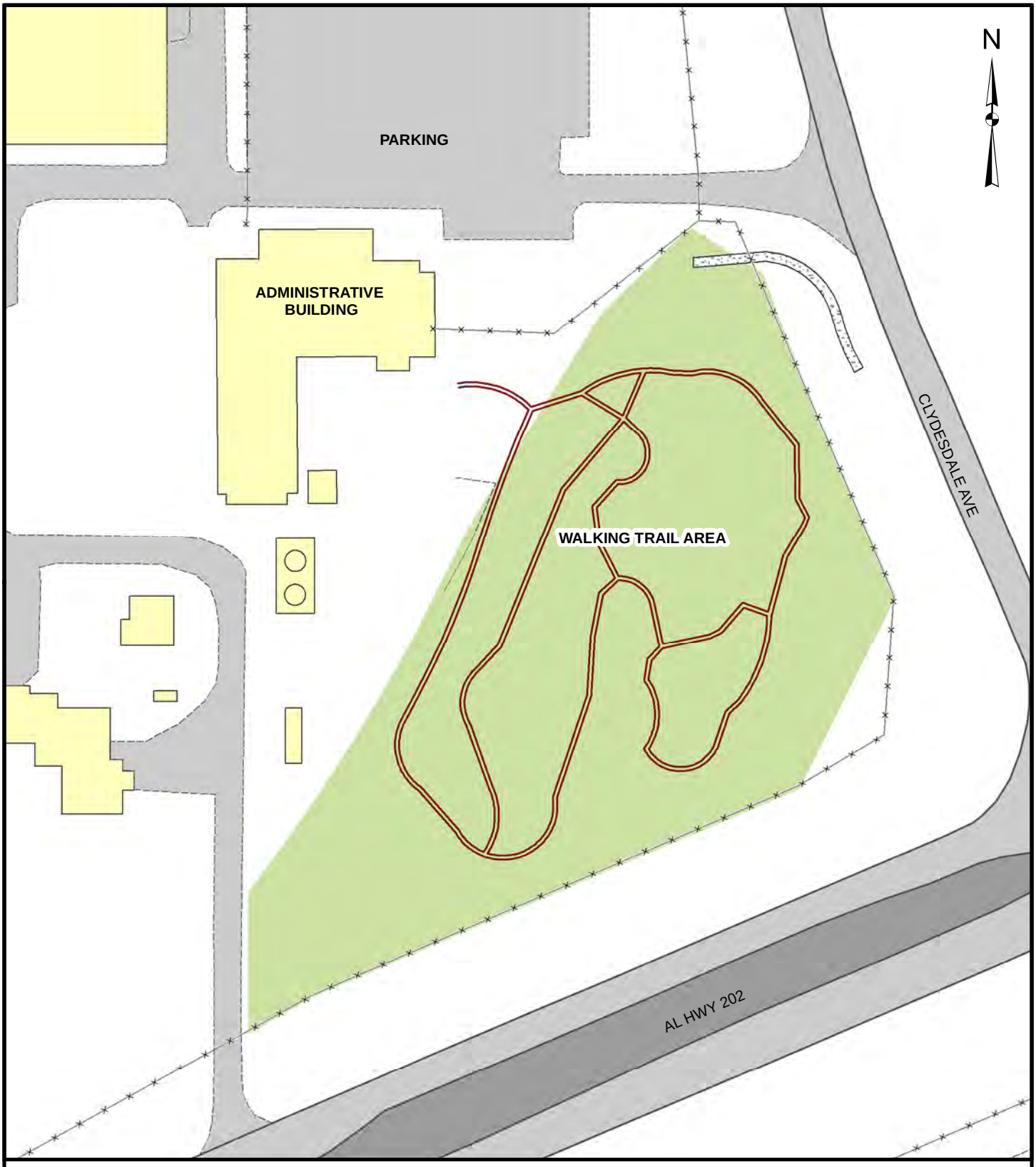
Golder Associates	SOLUTIA	Title: Carbon Treatment Unit for SWMU I Corrective Action System Operations & Maintenance Plan			
Project/File No: Q:\...\0116.apr	Produced By: JES	Checked By: CMM	Reviewed By: SM	Date: 10-July-2007	Figure No: 5.12-1

Section 5.13 THE WALKING TRAIL

The Walking Trail is located in the southeast corner of the plant site. The area was covered with a soil/geotextile layer in May 1997. This remedial action was completed as part of the Eastside Area construction of the Detention, Cap, and Cover project. The cover construction consisted of placing a 6-ounce per square yard, non-woven geotextile in cleared areas to both mark and separate the boundary between the imported soil cover and in-place soils. Once geotextile was in place, a minimum of 14-inches of clean soil was placed and vegetated across unwooded areas. Within wooded areas, clean soil was placed around trees and surface roots as possible.

The Walking Trail is to be inspected in accordance with the schedule listed in Section 3.3 and after significant storm events.

The Walking Trail inspection is to be documented on Inspection Log No. 5.13-1. Documentation of the construction of the Walking Trail area is included in the report titled, "Final Report for the Detention, Cap and Cover Project at the Solutia Anniston Facility."



LEGEND

- FENCE
- WALKING TRAIL
- CONCRETE FLUME
- SOIL-GEOTEXTILE COVER

100 0 100 Feet

PROJECT

SOLUTIA

TITLE

WALKING TRAIL OPERATIONS & MAINTENANCE PLAN

Golder Associates

PROJECT No.	1239004OM1-2013A		FILE No.	1239004-W005 WalkingTrail.mxd
DESIGN	-	-	SCALE: AS SHOWN	REV. 3.1
GIS	RJC	1/10/2014		
CHECK	CMM	1/10/2014		5.13-1
REVIEW	GLH	1/10/2014		

Map Document: Q:\PROJECTS\2012\123-9004 SolutiaW - O & MActive Drawings\1239004-W005 WalkingTrail.mxd / Modified 1/10/2014 9:50:52 AM by rsmalley / Exported 1/10/2014 9:51:03 AM by rsmalley

Operation and Maintenance Inspection Log 5.13-1

THE WALKING TRAIL AREA
(Quarterly Inspection)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Security Items	S1	Are signs visible and in good condition?	Yes		No		(If No, describe below)
	S2	Are gates functioning properly?	Yes		No		"
	S3	Are gates locked?	Yes		No		"
	S4	Locks in good condition (signs of rust, etc.)?	Yes		No		"
	S5	Do locks work?	Yes		No		"
	S6	Is fence in good condition?	Yes		No		
Cover System	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Is there erosion evident?	Yes		No		"
	C4	Is there settlement or subsidence evident?	Yes		No		"
	C5	Is there exposed geotextile?	Yes		No		"
Ditches and Drainage Channels	D1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	D2	Is there sediment buildup?	Yes		No		"
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on the Walking Trail figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for	Date Maintenance / Repair Work

* Attach completed Maintenance / Repair Log

Form Revision Log

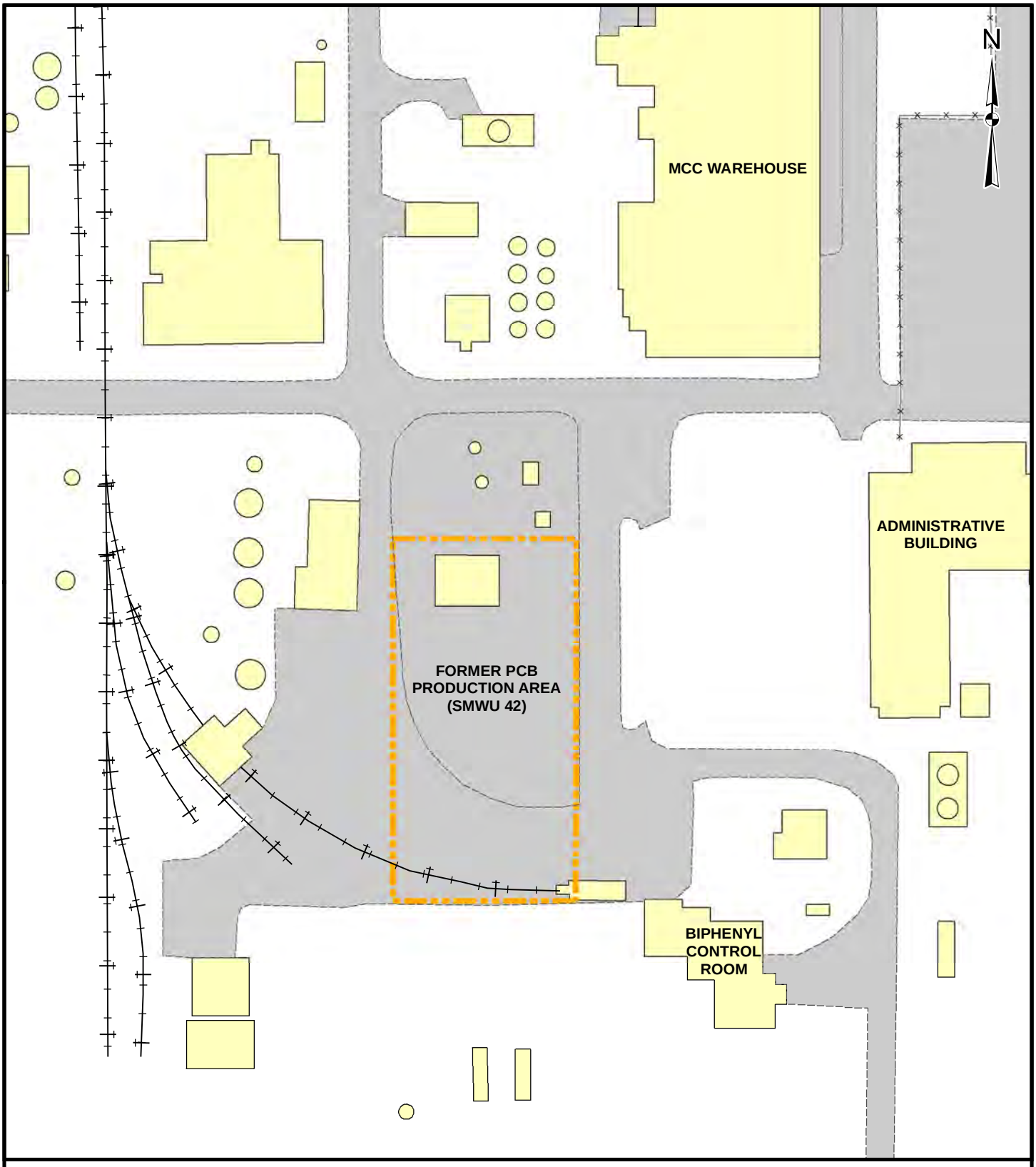
Rev #	Date	Item No.	Item
3.1	2013	All	Form Created

Section 5.14 FORMER PCB PRODUCTION AREA

The Former PCB Production Area was located in the south central portion of the Facility, as shown on Figure 5.7.1. PCBs were manufactured at the Facility from 1929 to 1971. Wastes from the unit were disposed of in the West End Landfill prior to 1960 and in the South Landfill after 1960. The PCB Production area was decommissioned in 1972. Decommissioning activities included removal of buildings and plant production equipment. The concrete floor, perimeter foundations, and underlying elements remained in place. A layer of asphalt was constructed in this area in the mid-1980s. In the 1990s, the area was capped with a supplemental asphalt cover 1 to 2 inches thick.

The Former PCB Production Area is to be inspected in accordance with the schedule listed in Section 3.6. The inspection is to include inspecting the existing asphalt covers system as described in Section 3.3.

The Former PCB Production Area inspection is to be documented on Inspection Log No. 5.14-1.



LEGEND

FENCE

ASPHALT

100 0 100 Feet

PROJECT

SOLUTIA

TITLE

FORMER PCB PRODUCTION AREA (SMWU 42) OPERATIONS & MAINTENANCE PLAN

Golder Associates

PROJECT No.	1239004OM1-2013A		FILE No.	1239004-W006 SMWU42.mxd
DESIGN	-	-	SCALE: AS SHOWN	REV. 3.1
GIS	RJC	1/10/2014		
CHECK	CMM	1/10/2014		
REVIEW	GLH	1/10/2014		

5.14-1

Map Document: Q:\PROJECTS\2012\123-9004 SolutiaW - O & MActive Drawings\1239004-W006 SMWU42.mxd / Modified 1/10/2014 9:51:52 AM by rsmalley / Exported 1/10/2014 9:51:59 AM by rsmalley

Operation and Maintenance Inspection Log 5.14.1

FORMER PCB PRODUCTION AREA
(Quarterly Inspection)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Asphalt Cover	AC1	Is asphalt cracked or torn up anywhere?	Yes		No		(If Yes, describe below)
	AC2	Is there settlement or subsidence evident?	Yes		No		"
	AC3	Is there plant growth in or around asphalt?	Yes		No		"
	AC4	Is there any noticeable staining or evidence of spills?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on the Former PCB Production Area figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log

Form Revision Log

Rev #	Date	Item No.	Item
3.1	2013	All	Form Created

Appendix 5-1. – RCRA Part B Permit Application

Post-Closure Care Monitoring and Inspection Requirements

SECTION B

SPECIFIC REQUIREMENTS

B-1 **POST-CLOSURE PLAN GENERAL REQUIREMENTS**

The Post-Closure Plan and Cost Estimate are required by ADEM Administrative Code R. 335-14-5-.07(9)(a) and ADEM Administrative Code R. 335-14-5-.08(5)(a). This document was originally part of Monsanto-Anniston's Part B Permit Application and conditionally attached to its issued permit. It is herewith being modified to satisfy the post-closure permit requirements.

Monsanto-Anniston has two (2) separate areas subject to post-closure care requirements. The areas involved include: a non-disposal surface impoundment closed as a landfill cell under RCRA Part B Permit; and a hazardous waste landfill, Cells 4E and 5E, closed under RCRA Part B Permit. The fully permitted surface impoundment was closed in 1988 and certified by ADEM in July 1988, after which time post-closure care commenced. Landfill cells 4E and 5E were closed in 1989 and regulatory certification received on August 30, 1989, and the landfill post-closure care period has begun.

The closed facilities will be inspected weekly and maintained in an undisturbed state throughout the 30-year post-closure care period, or for a shorter period if justified and approved by the Director of ADEM. Groundwater monitoring will follow the approved detection monitoring program as detailed in Section C. This program requires semi-annual determination of site specific parameters at specified background levels in the monitor wells. The procedures to be followed are in accordance with permit conditions and with groundwater monitoring attachments to the permit, also included herewith as Section C, modified to indicate post-closure status.

The physical integrity of the closed permitted units will be monitored routinely and maintained as necessary. The covers and side slopes will be monitored for indication of erosion, cracking, subsidence and bare spots. Additionally, approximately 7,000 linear feet of fence and all gates will be inspected and maintained to ensure a secure site.

There are five (5) copies of this post-closure care plan which will be maintained "evergreen". There are

copies of the plan on file at: EPA Regional Office in Atlanta, Georgia; ADEM Office in Montgomery; Monsanto's Corporate Office in St. Louis; and two (2) copies at Monsanto-Anniston. All copies will be updated whenever necessary due to changes in the specific requirements.

This plan maintenance will be handled by the Environmental Department, Monsanto Company, 300 Birmingham Highway, Anniston, Alabama 36201. The Environmental representative can be reached at 205-231-8492.

B-2 SPECIFIC POST-CLOSURE PLAN REQUIREMENTS

B-2a Landfills

The vegetative cover on the surface impoundment (WMA-II), closed as a landfill cell, will be mowed and fertilized as needed to maintain a healthy growth and to minimize erosion. Additionally, the cover system will be inspected weekly during the post-closure period. A copy of the inspection log that will be maintained is included as Figure B-1. Things that will be typically checked during the weekly inspections are:

extent of vegetation (bare spots); cracks; erosion; and subsidence. Noted problems will be corrected as soon as possible. Additionally, the area surrounding the closed impoundment will be inspected to verify that run-on and run-off are directed away from the cover system to maintain positive drainage. As part of the sampling detailed in Section C, the depth of water in the wells will be determined by measuring the depths to the water surface and to the bottom of the well. In doing this, any silting that has occurred in the well can be detected and maintenance needs determined.

Groundwater monitoring for WMA-II will be conducted according to the corrective action monitoring program outlined in Section C. Monitoring will involve sampling and analysis from the upgradient and down-gradient monitoring wells semi-annually during the post closure period. The methods of sampling and analysis will be the same as those described in Section C.

The closed surface impoundment (WMA-II) is within the manufacturing site portion of the Monsanto-Anniston facility. As such, maintenance of the perimeter fence, gates, and warning signs will be part of the overall

plant site security maintenance program. Likewise, plant site benchmarks, used to identify and locate the closed area, will be inspected semi-annually and their existence maintained throughout the post-closure period.

The vegetative cover on the closed landfill cells 4E and 5E (WMA-I) will be mowed and fertilized as needed to maintain a healthy growth and to minimize erosion. Additionally, the cover system will be inspected weekly during the remainder of the post-closure care period. A copy of the post closure inspection log that will be maintained is included as Figure B-2. Things that will be typically checked during the weekly inspections are: extent of vegetation (bare spots); soil cracking; erosion; and subsidence. Noted problems will be corrected as soon as possible. As part of the sampling detailed in Section C, the depth of water in the wells will be determined by measuring the depths to the water surface and to the bottom of the well. In doing this, any silting that has occurred in the well can be detected and maintenance needs determined.

Potential settlement of the waste material in WMA-I could necessitate periodic dressing of the final cover. Based on prior experience, post-closure settlement is expected to be minimal and fairly uniform across the area. This will be monitored by the inspection program. For the purposes of this Post-Closure Plan and Cost Estimate, Monsanto-Anniston's premise is that spot dressing of 3 percent of the cover area will be required at 5-year intervals during the post-closure period.

Groundwater monitoring for WMA-I will be conducted according to the detection monitoring program outlined in Section C. Monitoring will involve sampling and analysis from the upgradient and down-gradient monitoring wells semi-annually during the post closure period. The methods of sampling and analysis will be the same as those described in Section C.

The closed landfill security is maintained by a perimeter fence with appropriate warning signs and locked gates. The fence, signs, gates, and locks will be kept in good repair through a semi-annual inspection during the post-closure care period. Additionally,

permanently surveyed benchmarks, located in the landfill area and used to identify and locate the closed cells will be inspected and maintained, as necessary, semi-annually for the duration of the post-closure care period. Required and noted repairs will be made as soon as possible.

CHAPTER 6.0 GROUNDWATER MONITORING

Section 6.1 GENERAL

Two long-term groundwater-monitoring programs have been implemented to assess the effectiveness of the remedial action activities and to provide sentinel monitoring for the detection of groundwater constituents at the Plant Site boundaries. These programs are 1) the Groundwater Detection Monitoring Program, and 2) the WMA II Corrective Action Effectiveness Program.

The Groundwater Detection Monitoring Program monitors the closed WMA I area. The WMA I monitoring system consists of three point-of-compliance wells (MW-11A, MW-12A, and MW-13A) and one background well (MW-1B). Wells MW-11A, MW-12A, and MW-13A are located hydraulically downgradient from WMA I, and monitor groundwater within the bedrock.

The Corrective Action Effectiveness Program consists of two separate interceptor well and observation well monitoring systems. The WMA II Corrective Action System consists of eleven recovery wells (IW-16, IW-17, IW-18, IW-19, IW-20, IW-21, IW-22, IW-23, IW-24, IW-25 and DW-1) and eleven monitoring wells (MW-1B, MW-8, MW-9A, MW-15, MW-16, MW-20A, OW-19, OW-21A, OW-22, OW-24, and SBP-5) and is located at the north end of the Plant Site.

The SWMU 1 Corrective Action System is located along the western and northern sides of the closed South Landfill and in the Plant Site area. The Corrective Action System consists of 11 recovery wells: IW-2, IW-5, IW-6, IW-7, IW-8, IW-9, IW-10, IW-11, IW-12, IW-13, and IW-14A; and eight monitoring wells: MW-1B, OW-02, OW-04, OW-06A, OW-07, OW-08A, OW-15, and OW-16A.

In each program, samples are collected for analysis of specific volatile organic compounds (VOCs), PCBs, semi-volatile organic compounds (SVOCs), organophosphorous pesticides, and metals. Groundwater monitoring is performed semi-annually for each program, generally scheduled during the spring and fall of the year.

The following sections describe the monitoring programs and the inspection and maintenance of the groundwater monitoring systems.

Section 6.2 GROUNDWATER MONITORING PROGRAM

GROUNDWATER LEVEL MONITORING

Groundwater levels are measured in the monitoring wells, piezometers, and interceptor wells during semi-annual water level measurement events. The monitoring wells, piezometers, and interceptor wells are listed in Table 6-1 and the locations of these wells and piezometers are included on Figure 6.1-1. The water level data is entered into the Geographic Information System (GIS) database and retained for subsequent inclusion in the semi-annual Groundwater Detection Monitoring and Corrective Action Effectiveness Report. The monitoring wells, piezometers, and interceptor wells are to be inspected annually for integrity as described in Section 6.3 of the O&M Plan. The interceptor wells are inspected weekly as part of the SWMU 1 and WMA II Corrective Action Systems as described in Section 3.4.

GROUNDWATER MONITORING SAMPLING AND ANALYSES

Groundwater sampling and analyses is to be performed semi-annually for the Groundwater Detection Monitoring program and the Corrective Action Effectiveness Programs. The locations of the groundwater monitoring wells for these programs are included on Figure 6.1-1. Table 6-2 lists the wells in each of the programs, and Table 6-3 lists the constituents to be analyzed. In Table 6-3, the annual frequency is the spring sampling event and the semi-annual frequency is the fall event. There are notes at the bottom of Table 6-3 providing information on blank and duplicate samples, sample filtering, and parameters measured in the field. Sampling and documentation of each sample are performed according to the established Solutia sampling protocol.

Each program employs the same background well (MW-1B), therefore this well is only sampled once during each semi-annual event. The background well is sampled for the constituents listed for the Corrective Action Monitoring Program, since this list also includes the constituents of the detection monitoring program. The data from the background well is used for each program as applicable.

The background, detection monitoring, and corrective action monitoring wells are micro-purged and sampled in accordance with the Sampling and Analysis Quality Assurance/Quality Control Plan (SAQCP). Groundwater samples will be collected at the end of purging at the same micro-purging flow rate to minimize the sediment disturbance in each monitoring well.

Unfiltered samples are collected for VOC, SVOC, and organophosphorous pesticide analyses. However, both filtered and unfiltered samples are collected from select wells and analyzed for PCBs, cobalt, and mercury analyses. The sampling team is to verify which samples are to be filtered with the Site

Remediation Coordinator, Environmental Specialist, or their designee before sampling. Filtering of groundwater samples collected from the specified wells will be performed using 0.1 micron in-line filters. In accordance with Solutia's response to comments on the Draft RFI/CS Report submitted to ADEM on October 29, 1999, the 0.1 micron filters is to consist of non-oleophilic and non-reactive materials (such as nylon or Teflon®).

Section 6.3 GROUNDWATER MONITORING WELL INTEGRITY AND SECURITY INSPECTIONS

The groundwater monitoring wells, piezometers, and interceptor wells are to be inspected at least annually. The inspections include examining and noting the following:

- Condition of the concrete pad, inner PVC casing, and outer protective casing;
- Condition of the well caps and lock;
- Legibility of the well designation;
- Depth of well;
- Notation of any siltation at the bottom of the well; and
- Accessibility.

Inspections of groundwater monitoring wells, piezometers, and interceptor wells can be recorded on the included Well Integrity and Water Level Log.

Section 6.4 GROUNDWATER MONITORING WELL, PIEZOMETER, AND INTERCEPTOR WELL MAINTENANCE

Maintenance of the groundwater monitoring wells, piezometers, and interceptor wells is to be performed on an as-needed basis as determined during annual inspections. Such maintenance may include:

- Replacing weathered or missing locks;
- Repairing the concrete pad;
- Re-labeling the well/piezometer number if the label has weathered;
- Re-developing or removing by other means silt that may have accumulated at the bottom of the well/piezometer; or
- Considering replacing the well/piezometer if a blockage has occurred or if the well/piezometer is damaged beyond repair by mowers, construction equipment, or other reasons. If inspection indicates that a well/piezometer should be replaced notify the Site Remediation Coordinator, Environmental Specialist, or their designee. Replacement takes specialty contractors and the regulatory authorities should be notified. In addition, water levels and/or groundwater samples may have to be obtained as part of the replacement process.

The maintenance and repair tasks performed on the groundwater monitoring wells and piezometers are to be documented on a Repair/Maintenance Log.

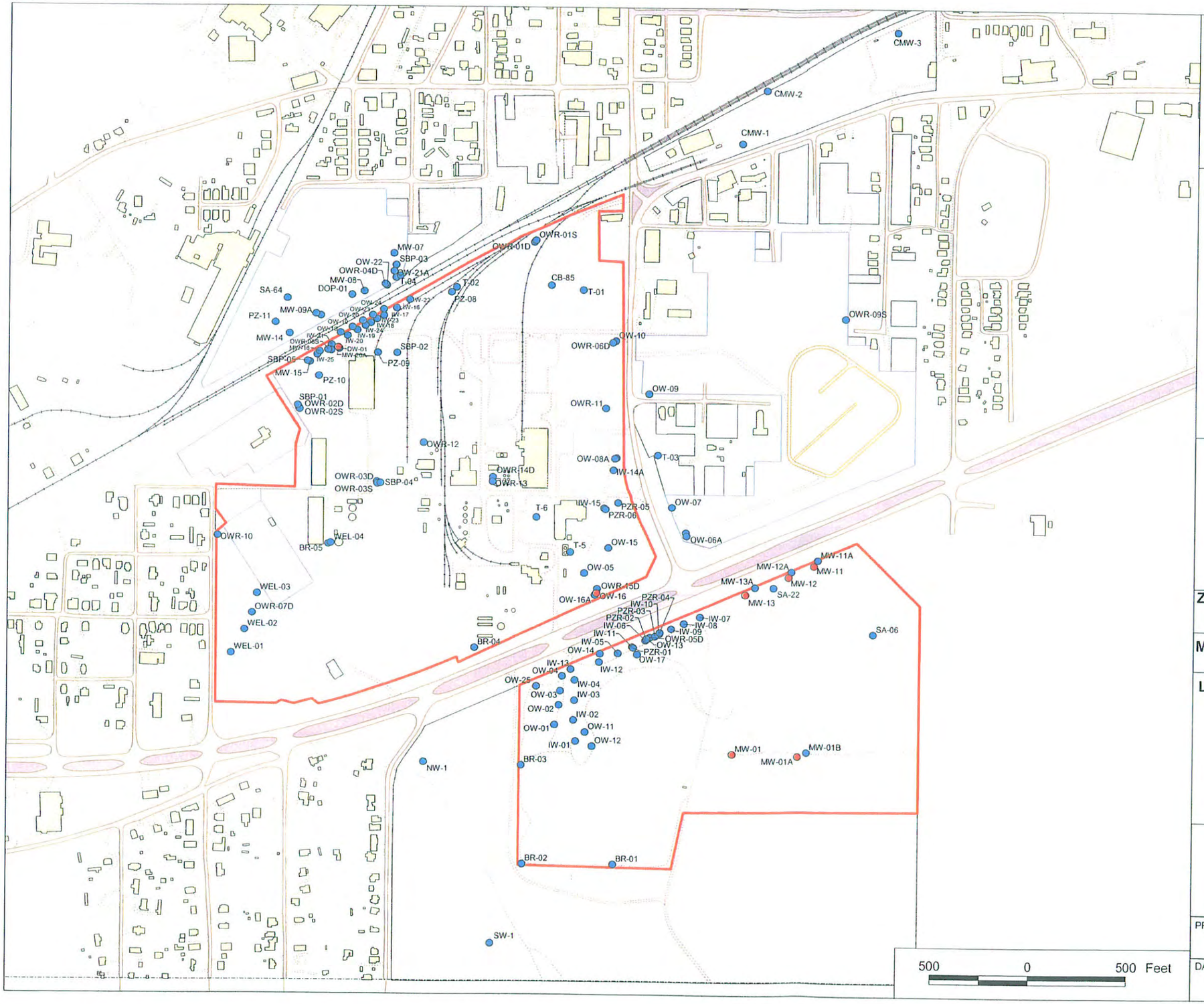
Section 6.5 WELL PURPOSE

Section 6.1 lists all the wells associated with the Groundwater Detection Monitoring Program and the Corrective Action Effectiveness Program. In total, there are 43 wells associated with these programs. The remaining Plant Site wells included in the attached tables and figures are not included in the RCRA Groundwater Program. These wells were installed for various historical investigations and are included as part of the O&M Plan since each of these wells is inspected to monitor well integrity in accordance with Section 6.3.

Well Locations

Operations & Maintenance Plan

Solutia Inc., Anniston, Alabama

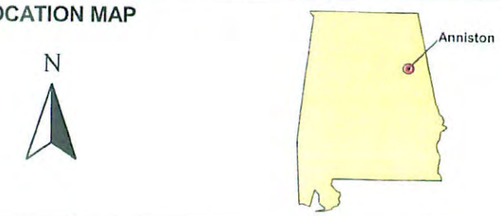


LEGEND

- On-Site Boundary
- Major Roads
- Minor Roads
- Drainage Basin
- Railroads
- Facility Boundary
- Buildings
- Alabama Power
- Solutia Inc.
- Paved Surface
- Water level taken
- Water level not taken

ZONE	SOURCE
Alabama East 101	Golder Associates (on-site base map) USGS 1:2400 Quad Maps
MAP PROJECTION	**DATUM**
US State Plane	NAD83

LOCATION MAP



SOLUTIA

Golder Associates

PRODUCED BY:	CHECKED BY:	REVIEWED BY:
MRM	KP 6/13/07	SM

DATE:	PROJECT No:	FILE No:	FIGURE NO.
06/13/07	943-3680	9433680H001	6.1-1

TABLE 6.1
Monitoring Well and Interceptor Well Water Level Log

Date Measured:					
Well No.	**TOC Elevation (ft. MSL)**	**Depth to Water (ft. BTOC)**	**Approximate Stick-up (ft.)**	**Water-Level Elevation (ft. MSL)**	**Well Depth (ft. BGS)**
Observation Wells					
OW-01	812.71		1.25		25
OW-02	807.69		1.75		24
OW-03	805.25		3.20		24
OW-04	798.57		1.50		27
OW-05	773.02		2.33		65
OW-06A	791.62		2.75		43
OW-07	785.82		4.35		43
OW-08A	749.16		2.84		22
OW-09	738.36		2.40		40
OW-10	736.87		2.16		40
OW-11	825.36		1.00		14
OW-12	835.34		3.50		35
OW-13	805.16		1.80		43
OW-14	806.98		3.75		46
OW-15	766.90		2.84		40
OW-16A	779.74		2.00		30
OW-17	812.29		2.00		47
OW-18	750.47		2.95		28
OW-19	748.72		2.50		33
OW-20	747.62		2.48		23
OW-21A	744.46		2.56		35
OW-22	745.57		3.50		35
OW-23	747.53		2.83		23
OW-24	746.15		2.47		29
OW-25	800.21		2.50		37
Bedrock Wells					
BR-01	897.46		4.45		311
BR-02	865.22		4.20		181
BR-03	827.58		2.80		258
BR-04	790.74		2.00		220
BR-05	764.10		0.80		149
Site Assessment Wells					
SA-06	815.56		2.00		50
SA-22	792.84		2.84		24
SA-64	748.65		2.42		24
SA-85 (CB-85)	736.37		2.75		30
Shallow Bedrock Wells					
SBP-01	758.17		2.62		157
SBP-02	749.40		2.33		140
SBP-03	744.41		3.35		102
SBP-04	761.3		2.33		148
SBP-05	755.88		2.33		140
West End Landfill Wells					
WEL-01	778.8		1.58		33
WEL-02	775.35		1.67		35
WEL-03	771.73		2.33		35
WEL-04	765.94		2.80		51

TABLE 6.1
Monitoring Well and Interceptor Well Water Level Log

Date Measured:					
Well No.	**TOC Elevation (ft. MSL)**	**Depth to Water (ft. BTOC)**	**Approximate Stick-up (ft.)**	**Water-Level Elevation (ft. MSL)**	**Well Depth (ft. BGS)**
Monitoring Wells					
MW-01B	881.59		1.50		63
MW-07	744.18		3.17		24
MW-08	746.80		3.50		27
MW-09A	751.02		3.02		33
MW-11A	784.13		1.00		114
MW-12A	785.69		2.00		112
MW-13A	782.01		2.67		110
MW-14	751.30		2.16		28
MW-15	756.19		3.67		25
MW-16	755.70		3.08		68
MW-20A	752.90		1.25		24
Piezometers					
PZ-08	750.51		2.67		50
PZ-09	749.71		2.33		40
PZ-10	756.06		2.08		50
PZ-11	750.71		1.62		45
RFI Piezometers					
PZR-01	806.91		NM		60
PZR-02	805.86		NM		60
PZR-03	805.05		NM		60
PZR-04	803.94		NM		60
PZR-05	755.73		NM		45
PZR-06	757.09		NM		45
Other Wells					
DOP-1	747.49		3.71		270
RFI Observation Wells					
OWR-01D	739.59		2.00		65
OWR-01S	738.89		2.00		35
OWR-02D	756.99		2.00		108
OWR-02S	757.46		2.25		35
OWR-03D	759.76		2.00		65
OWR-03S	760.48		1.92		35
OWR-04D	746.03		4.00		80
OWR-05D	804.93		2.00		65
OWR-06D	736.79		2.00		65
OWR-07D	774.49		2.00		65
OWR-08S	755.17		2.00		35
OWR-09S	753.09		2.00		50
OWR-10	769.95		2.95		49
OWR-11	745.16		2.86		35
OWR-12	763.20		2.60		37
OWR-13	769.45		2.65		36
OWR-14D	779.61		2.50		81
OWR-15D	778.94		2.50		64
Temporary Wells					
T-1	731.47		1.30		40
T-2	749.13		2.00		44
T-3	746.09		1.00		25
T-4	742.18		1.10		25
T-5	767.16		2.10		128
T-6	759.95		-0.20		125

TABLE 6.1
Monitoring Well and Interceptor Well Water Level Log

Date Measured:					
Well No.	**TOC Elevation (ft. MSL)**	**Depth to Water (ft. BTOC)**	**Approximate Stick-up (ft.)**	**Water-Level Elevation (ft. MSL)**	**Well Depth (ft. BGS)**
Interceptor Wells					
IW-1	821.18				26
IW-2	815.27				25
IW-3	810.59				25
IW-4	799.88				25
IW-5	805.46				68
IW-6	803.84				68
IW-7	794.63				40
IW-8	798.02				40
IW-9	801.03				50
IW-10	801.93				68
IW-11	804.62				68
IW-12	797.86				50
IW-13	795.74				50
IW-14A	746.70				49
IW-15	756.73				45
IW-16	746.82				46
IW-17	746.65				48
IW-18	748.63				49
IW-19	749.31				49
IW-20	750.70				50
IW-21	752.45				50
IW-22	743.23				40
IW-23	745.20				50
IW-24	745.86				40
IW-25	751.96				40

Notes:

1) TOC Elevations taken from well survey conducted in April 1997 and following completion of wells installed after 1997.

2) NM = Not measured

3) BGS = Below ground surface

4) BTOC = Below top of casing

5) MSL = Mean sea level

TABLE 6.2
Monitoring Well Designations

Well Name	Program (2)	Well Type	Unit(s) Being Monitored
MW-01B	D, CA	Background	WMA I, WMA II
MW-08	CA	Boundary	WMA II
MW-09A	CA	Boundary	WMA II
MW-11A	D	Point of Compliance	WMA I
MW-12A	D	Point of Compliance	WMA I
MW-13A	D	Point of Compliance	WMA I
MW-15	CA	Point of Compliance & Effectiveness	WMA II, SWMU 8, SWMU 9
MW-16	CA	Point of Compliance & Effectiveness	WMA II, SWMU 8, SWMU 9
MW-20A	CA	Point of Compliance & Effectiveness	WMA II, SWMU 8
OW-02	CA	Effectiveness	SWMU 1
OW-04	CA	Effectiveness	SWMU 1
OW-06A	CA	Effectiveness	SWMU 1
OW-07	CA	Effectiveness	SWMU 1
OW-08A	CA	Effectiveness	SWMU 1
OW-15	CA	Effectiveness	SWMU 1
OW-16A	CA	Effectiveness	SWMU 1
OW-19	CA	Boundary	WMA II
OW-21A	CA	Boundary	WMA II
OW-22	CA	Boundary	WMA II
OW-24	CA	Boundary	WMA II
SBP-05	CA	Effectiveness	WMA II, SWMU 8, SWMU 9

Notes:

1) Wells OW-6, OW-8, and OW-16 were replaced with wells OW-6A, OW-8A, and OW-16A in March 1998.

2) Monitoring Program Designations:

D = Detection Monitoring Program

CA = Correction Action and Effectiveness Program

TABLE 6.3
Constituent Monitoring Frequency

Constituent	Detection Monitoring Program (Well Group 1)	Corrective Action Program (Well Group 2)	Corrective Action Program (Well Group 3)
Chlorobenzene	—	Semi-annual	Annual
Cobalt	Annual	Semi-annual	Annual
1,2-Dichlorobenzene	Annual	Annual	Annual
1,4-Dichlorobenzene	Annual	Annual	Annual
Parathion	Semi-annual	Semi-annual	Annual
Mercury	—	Annual	Annual
4-Nitrophenol	Semi-annual	Semi-annual	Annual
Pentachlorophenol	—	Annual*	—
PCBs (Polychlorinated biphenyls)	Semi-annual	Semi-annual	Annual
Tetraethyldithiopyrophosphate (Sulfotepp)	—	Semi-annual	Annual
o,o,o-Triethylphosphorothioate	Semi-annual	Semi-annual	Annual
2,4,6-Trichlorophenol	—	Annual*	—

NOTES:

1) Well Group 1: MW-01B, -11A, -12A, -13A
2) Well Group 2: MW-01B, -15, -16, -20A, SBP-05, OW-02, -04, -06A, -07, -08A, -15, -16A
3) Well Group 3: MW-08, -09A, OW-19, -21A, -22, -24

* Pentachlorophenol and 2,4,6-Trichlorophenol will be analyzed for MW-20A only.

Well MW-01B is the background well for the Detection and Corrective Action Monitoring programs. As such, it is sampled only once each sampling event for the longest parameter list.

Annual samples are collected during the spring sampling event.
Semi-annual samples are collected during the fall sampling event.

For each sampling event, include the following:

Trip blank is included for VOC analysis
One duplicate for each of the Detection Monitoring and Corrective Action Programs.
Field blank, matrix spike, and matrix spike duplicate
Field parameters include pH, conductivity, oxidation-reduction potential, turbidity, dissolved oxygen, temperature, color, odor, and general sample appearance.
Collect unfiltered samples for VOCs, SVOCs, PCBs, and metals.
Filtered samples are collected for some PCBs and metals. Verify with Site Remediation Coordinator, Environmental Specialist or their designee before sampling.

TABLE 6.4
MONITORING WELL AND INTERCEPTOR WELL INTEGRITY LOG

Facility Name: Solutia Anniston Facility
Project Name: Well Integrity Check
Project Number:

Weather:
Field Personnel:
Water Level Measuring Method:

WELL I.D.	Date	Measured Depth to Water from TOC Current Reading	Measured Total Depth from TOC Current Reading	Measured Depth to Water from TOC Previous Reading	Measured Total Depth from TOC Previous Reading	Measured Depth to Water from TOC Previous Year Reading	Well Free of Sediment?	Well Located in Dry Area?	Well Readily Accessible?	Well Identified with Protective Posts	Well Properly Labeled?	Well Casing Free of Kinks or Bends?	Protective Casing Secure in Ground?	Well Area Free of Overgrowth	Functioning Locking Cap?	Cap Free of Rust?	Vented Well or Cap?	Annular Space Filled with Sand or Gravel?	Weep Hole at Base of Protective Casing?	COMMENTS
OW Wells																				
OW-01										N/A										
OW-02										N/A										
OW-03										N/A										
OW-04										N/A										
OW-05										N/A										
OW-06A										N/A										
OW-07										N/A										
OW-08A																				
OW-09																				
OW-10																				
OW-11										N/A										
OW-12							N/A			N/A	N/A							N/A		
OW-13										N/A										
OW-14										N/A										
OW-15										N/A										
OW-16										N/A										
OW-16A										N/A										
OW-17										N/A										
OW-18										N/A										
OW-19										N/A										
OW-20										N/A										
OW-21A										N/A										
OW-22										N/A										
OW-23										N/A										
OW-24										N/A										
OW-25										N/A										

TABLE 6.4
MONITORING WELL AND INTERCEPTOR WELL INTEGRITY LOG

Facility Name: Solutia Anniston Facility
Project Name: Well Integrity Check
Project Number: _____

Weather: _____
Field Personnel: _____
Water Level Measuring Method: _____

WELL I.D.	Date	Measured Depth to Water from TOC Current Reading	Measured Total Depth from TOC Current Reading	Measured Depth to Water from TOC Previous Reading	Measured Total Depth from TOC Previous Reading	Measured Depth to Water from TOC Previous Year Reading	Well Free of Sediment?	Well Located in Dry Area?	Well Readily Accessible?	Well Identified with Protective Posts	Well Properly Labeled?	Well Casing Free of Kinks or Bends?	Protective Casing Secure in Ground?	Well Area Free of Overgrowth	Functioning Locking Cap?	Cap Free of Rust?	Vented Well or Cap?	Annular Space Filled with Sand or Gravel?	Weep Hole at Base of Protective Casing?	COMMENTS
BR Wells																				
BR-01										N/A										
BR-02										N/A										
BR-03										N/A										
BR-04										N/A										
BR-05										N/A										
SA WELLS																				
SA-06										N/A			N/A					N/A	NA	
SA-22										N/A			N/A					N/A	N/A	
SA-64										N/A								N/A	N/A	
SBP Wells																				
SBP-01																				
SBP-02																				
SBP-03																				
SBP-04																				
SBP-05																				
WEL Wells																				
WEL-01																				
WEL-02																				
WEL-03																				
WEL-04																				

TABLE 6.4
MONITORING WELL AND INTERCEPTOR WELL INTEGRITY LOG

Facility Name: Solutia Anniston Facility
Project Name: Well Integrity Check
Project Number: _____

Weather: _____
Field Personnel: _____
Water Level Measuring Method: _____

WELL I.D.	Date	Measured Depth to Water from TOC Current Reading	Measured Total Depth from TOC Current Reading	Measured Depth to Water from TOC Previous Reading	Measured Total Depth from TOC Previous Reading	Measured Depth to Water from TOC Previous Year Reading	Well Free of Sediment?	Well Located in Dry Area?	Well Readily Accessible?	Well Identified with Protective Posts	Well Properly Labeled?	Well Casing Free of Kinks or Bends?	Protective Casing Secure in Ground?	Well Area Free of Overgrowth	Functioning Locking Cap?	Cap Free of Rust?	Vented Well or Cap?	Annular Space Filled with Sand or Gravel?	Weep Hole at Base of Protective Casing?	COMMENTS
MW Wells																				
MW-01B										**N/A**										
MW-07										**N/A**										
MW-08										**N/A**										
MW-09A										**N/A**										
MW-11A										**N/A**										
MW-12A										**N/A**										
MW-13A										**N/A**										
MW-14										**N/A**										
MW-15																				
MW-16																				
MW-20A																				
PZ Piezometers																				
PZ-08																				
PZ-09																				
PZ-10																				
PZ-11										**N/A**										

TABLE 6.4
MONITORING WELL AND INTERCEPTOR WELL INTEGRITY LOG

Facility Name: Solutia Anniston Facility
Project Name: Well Integrity Check
Project Number:

Weather:
Field Personnel:
Water Level Measuring Method:

WELL I.D.	Date	Measured Depth to Water from TOC Current Reading	Measured Total Depth from TOC Current Reading	Measured Depth to Water from TOC Previous Reading	Measured Total Depth from TOC Previous Reading	Measured Depth to Water from TOC Previous Year Reading	Well Free of Sediment?	Well Located in Dry Area?	Well Readily Accessible?	Well Identified with Protective Posts	Well Properly Labeled?	Well Casing Free of Kinks or Bends?	Protective Casing Secure in Ground?	Well Area Free of Overgrowth	Functioning Locking Cap?	Cap Free of Rust?	Vented Well or Cap?	Annular Space Filled with Sand or Gravel?	Weep Hole at Base of Protective Casing?	COMMENTS
T Wells																				
T-1										N/A										
T-2										N/A									N/A	
T-3										N/A										
T-4										N/A								N/A		
T-5																				
T-6										N/A								N/A	N/A	
T-8										N/A										
T-9										N/A										
T-10										N/A										
T-11																				
T-12										N/A										

TABLE 6.4
MONITORING WELL AND INTERCEPTOR WELL INTEGRITY LOG

Facility Name: Solutia Anniston Facility
Project Name: Well Integrity Check
Project Number: _____

Weather: _____
Field Personnel: _____
Water Level Measuring Method: _____

WELL I.D.	Date	Measured Depth to Water from TOC Current Reading	Measured Total Depth from TOC Current Reading	Measured Depth to Water from TOC Previous Reading	Measured Total Depth from TOC Previous Reading	Measured Depth to Water from TOC Previous Year Reading	Well Free of Sediment?	Well Located in Dry Area?	Well Readily Accessible?	Well Identified with Protective Posts	Well Properly Labeled?	Well Casing Free of Kinks or Bends?	Protective Casing Secure in Ground?	Well Area Free of Overgrowth	Functioning Locking Cap?	Cap Free of Rust?	Vented Well or Cap?	Annular Space Filled with Sand or Gravel?	Weep Hole at Base of Protective Casing?	COMMENTS
OWR Wells																				
OWR-01D																				
OWR-01S																				
OWR-02D																				
OWR-02S																				
OWR-03D																				
OWR-03S																				
OWR-04D										**N/A**										
OWR-05D																				
OWR-06D																				
OWR-07D										**N/A**										
OWR-08S										**N/A**										
OWR-09S										**N/A**										
OWR-10										**N/A**										
OWR-11																				
OWR-12										**N/A**										
OWR-13																				
OWR-14D																				
OWR-15D										**N/A**										

TABLE 6.4
MONITORING WELL AND INTERCEPTOR WELL INTEGRITY LOG

Facility Name: Solutia Anniston Facility
Project Name: Well Integrity Check
Project Number: _____

Weather: _____
Field Personnel: _____
Water Level Measuring Method: _____

WELL I.D.	Date	Measured Depth to Water from TOC Current Reading	Measured Total Depth from TOC Current Reading	Measured Depth to Water from TOC Previous Reading	Measured Total Depth from TOC Previous Reading	Measured Depth to Water from TOC Previous Year Reading	Well Free of Sediment?	Well Located in Dry Area?	Well Readily Accessible?	Well Identified with Protective Posts	Well Properly Labeled?	Well Casing Free of Kinks or Bends?	Protective Casing Secure in Ground?	Well Area Free of Overgrowth	Functioning Locking Cap?	Cap Free of Rust?	Vented Well or Cap?	Annular Space Filled with Sand or Gravel?	Weep Hole at Base of Protective Casing?	COMMENTS
PZR Wells																				
PRZ-01										N/A										
PRZ-02										N/A										
PRZ-03										N/A										
PRZ-04										N/A										
PRZ-05										N/A										
PRZ-06										N/A										
SSSMA Wells																				
NW-1																				
SW-1																				
CSSMA Wells																				
CMW-1																				
CMW-2																				
CMW-3																				
MISC Wells																				
CB-85 (SA-85)										N/A										
DOP-1										N/A										
East SSSMA																				
West SSSMA																				

TABLE 6.4
MONITORING WELL AND INTERCEPTOR WELL INTEGRITY LOG

Facility Name: Solutia Anniston Facility
Project Name: Well Integrity Check
Project Number:

Weather:
Field Personnel:
Water Level Measuring Method:

WELL I.D.	Date	Measured Depth to Water from TOC Current Reading	Measured Total Depth from TOC Current Reading	Measured Depth to Water from TOC Previous Reading	Measured Total Depth from TOC Previous Reading	Measured Depth to Water from TOC Previous Year Reading	Well Free of Sediment?	Well Located in Dry Area?	Well Readily Accessible?	Well Identified with Protective Posts	Well Properly Labeled?	Well Casing Free of Kinks or Bends?	Protective Casing Secure in Ground?	Well Area Free of Overgrowth	Functioning Locking Cap?	Cap Free of Rust?	Vented Well or Cap?	Annular Space Filled with Sand or Gravel?	Weep Hole at Base of Protective Casing?	COMMENTS
Interceptor Wells																				
IW-01										N/A							N/A	N/A	N/A	
IW-02										N/A							N/A	N/A	N/A	
IW-03										N/A							N/A	N/A	N/A	
IW-04							N/A			N/A							N/A	N/A	N/A	
IW-05										N/A							N/A	N/A	N/A	
IW-06										N/A							N/A	N/A	N/A	
IW-07										N/A							N/A	N/A	N/A	
IW-08										N/A							N/A	N/A	N/A	
IW-09										N/A							N/A	N/A	N/A	
IW-10										N/A							N/A	N/A	N/A	
IW-11										N/A							N/A	N/A	N/A	
IW-12										N/A							N/A	N/A	N/A	
IW-13										N/A							N/A	N/A	N/A	
IW-14A										N/A							N/A	N/A	N/A	
IW-15										N/A							N/A	N/A	N/A	
IW-16										N/A							N/A	N/A	N/A	
IW-17										N/A							N/A	N/A	N/A	
IW-18										N/A							N/A	N/A	N/A	
IW-19										N/A							N/A	N/A	N/A	
IW-20										N/A							N/A	N/A	N/A	
IW-21										N/A							N/A	N/A	N/A	
IW-22										N/A							N/A	N/A	N/A	
IW-23										N/A							N/A	N/A	N/A	
IW-24										N/A							N/A	N/A	N/A	
IW-25										N/A							N/A	N/A	N/A	

Notes:
Y - Yes
N- No
N/A - Not Applicable

GROUNDWATER SAMPLING FORM

Project Number _____ Page _____ of _____

Project Name/Site Name Solutia, Anniston, AL -

Well ID _____ COC ID #1 _____ = Original Sample

Event _____ COC ID #2 _____ = Duplicate

Date _____ COC ID #3 _____ = Field Blank

Begin Time _____ COC ID #4 _____ = MS/MSD

End Time _____ COC ID #5 _____ = Original Sample - Filtered

Sampler(s) _____ COC ID #6 _____ = Dupilicate - Filtered

Weather _____

SAMPLING DATA / FIELD PARAMETERS

Temperature (°C) _____ Color _____

pH (Standard Unit) _____ Appearance _____

Turbidity (NTU) _____ DO (mg/L) _____

Conductivity (µmhos/cm) _____ ORP (mV) _____

Sampling Method/Material _____

CONTAINER AND ANALYSES DESCRIPTION

COLLECTED	CONTAINER AND ANALYSES	NOTES
	40 ml glass vial with HCl for VOA analysis	
	1 L glass vial with no preservative for SVOA analysis (8270)	
	1 L glass vial with no preservative for Organophos. Pest. Analysis (8141)	
	1 L glass vial with no preservative for PCB analysis	
	1 L glass vial with no preservative for PCB analysis (filtered)	
	500 ml plastic with HNO3 for metals analysis (see COC for exact metals)	
	500 ml plastic with HNO3 for metals analysis (filtered)	

REMARKS

_____

_____

_____

_____

PARAMETER LIST

METALS

Mercury- Y N, Cobalt- Y N

VOCs

Chlorobenzene- Y N

SVOCs

4-Nitrophenol- Y N, o,o,o-Triethylphosphorothioate- Y N, 1,2-dichlorobenzene- Y N, 1,4-dichlorobenzne- Y N, 2,4,6-trichlorophenol- Y N, pentachlorophenol- Y N.

ORGANOPHOSPHOROUS PESTICIDES

Sulfotepp- Y N, Parathion- Y N.

PCBs- Y N.

Field Crew: _____

LOW FLOW MONITORING WELL PURGING LOG

Project Number _____ Page _____ of _____

Project Name - Location Solutia, Anniston, AL - _____

Well ID: _____ Date: _____ Water Level: _____ Time (Water Level): _____

Purging Time:
On @ _____
Off @: _____

Evacuation Method: _____

Well Depth: _____

Volume in Well (gal): _____

Screen Depth: _____

Evacuation Rate (gal/min): _____

Purging Personnel: _____

Total Volume Removed (gal): _____

PURGING DATA AND FIELD PARAMETERS

Date/Time:	Temperature (C):	pH:	Turbidity (NTU):	Spec. Cond. (umhos/cm):	DO (mg/L):	ORP (mV):	Volume: (Gallons)	Other:

Field Crew: _____

NOTES:

Stabilization Requirements as per the EPA SOP for Low-Flow/Minimal Drawdown GW Sample Collection
Three successive readings every 3 to 5 minutes to include:

pH =	+/- 0.1 Standard Units
Specific Conductance =	+/- 3 percent
ORP =	+/- 10 mV
Dissolved Oxygen =	+/- 0.3 mg/L
Turbidity =	+/- 10 percent (when turbidity is greater than 10 NTUs)

CHAPTER 7.0 SURFACE WATER DISCHARGE MONITORING

Section 7.1 NPDES MONITORING PROGRAM

Surface water/stormwater monitoring is to be conducted as prescribed under NPDES Permit No. AL0001201 (current version). Part I of the NPDES Permit that lists discharge limitations and monitoring requirements. The only outfall to be monitored is DSN 012, and its location is shown on Figure 7.1-1.

Samples and measurements are to be representative of the volume and nature of the monitored discharge in accordance with the provisions of the NPDES permit.

MONITORING FREQUENCY AND CONSTITUENTS

The frequency and list of constituents for DSN 012 are included in Table 7.1-1.

The storm water samples are to be collected from the discharge resulting from a storm event that is greater than 0.1 inches which produces sufficient volume at the DSN-012 discharge for collection of a representative sample as defined in the current NPDES permit. The total volume of storm water discharged for each event sampled must be monitored, including the date, duration (in hours), and amount of rainfall (in inches). The duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event must be a minimum of 72 hours.

RECORDING OF MEASUREMENTS AND TEST RESULTS

For each measurement or sample taken, record the following information:

- The facility name and location, point source number, date, time and exact place of sampling;
- The name(s) of person(s) who obtained the samples or measurements;
- The dates and times the analyses were performed;
- The name(s) of the person(s) who performed the analyses;
- The analytical techniques or methods used, including source of method and method number; and
- The results of all required analyses.

MONITORING EQUIPMENT AND INSTRUMENTATION

All equipment and instrumentation is to be installed, maintained, and calibrated in accordance with the manufacturer instructions.

REPORTING OF RESULTS

Discharge monitoring reports (DMRs) are forms provided by ADEM, and are required to be submitted and received by ADEM no later than the 28th day of the month following the reporting period according to the following schedule:

> QUARTERLY MONITORING is to be done during the first complete calendar quarter following the effective date of the current NPDES permit, and once during each quarter thereafter. Quarterly monitoring may be done anytime during the quarter, unless restricted elsewhere in the current NPDES permit, but it should be reported on the 28th day of the month following the quarterly reporting period (i.e., April 28 for the first period ending in March, July 28th for the period ending in June, October 28th for the period ending in September, and January 28th of the following year for the period ending in December).

The DMRs must be legible and bear an original signature of a "responsible official" or a "duly authorized representative" of such official as defined in ADEM Administrative Code Rule 335-8-6-.09 and is to bear the following certification:

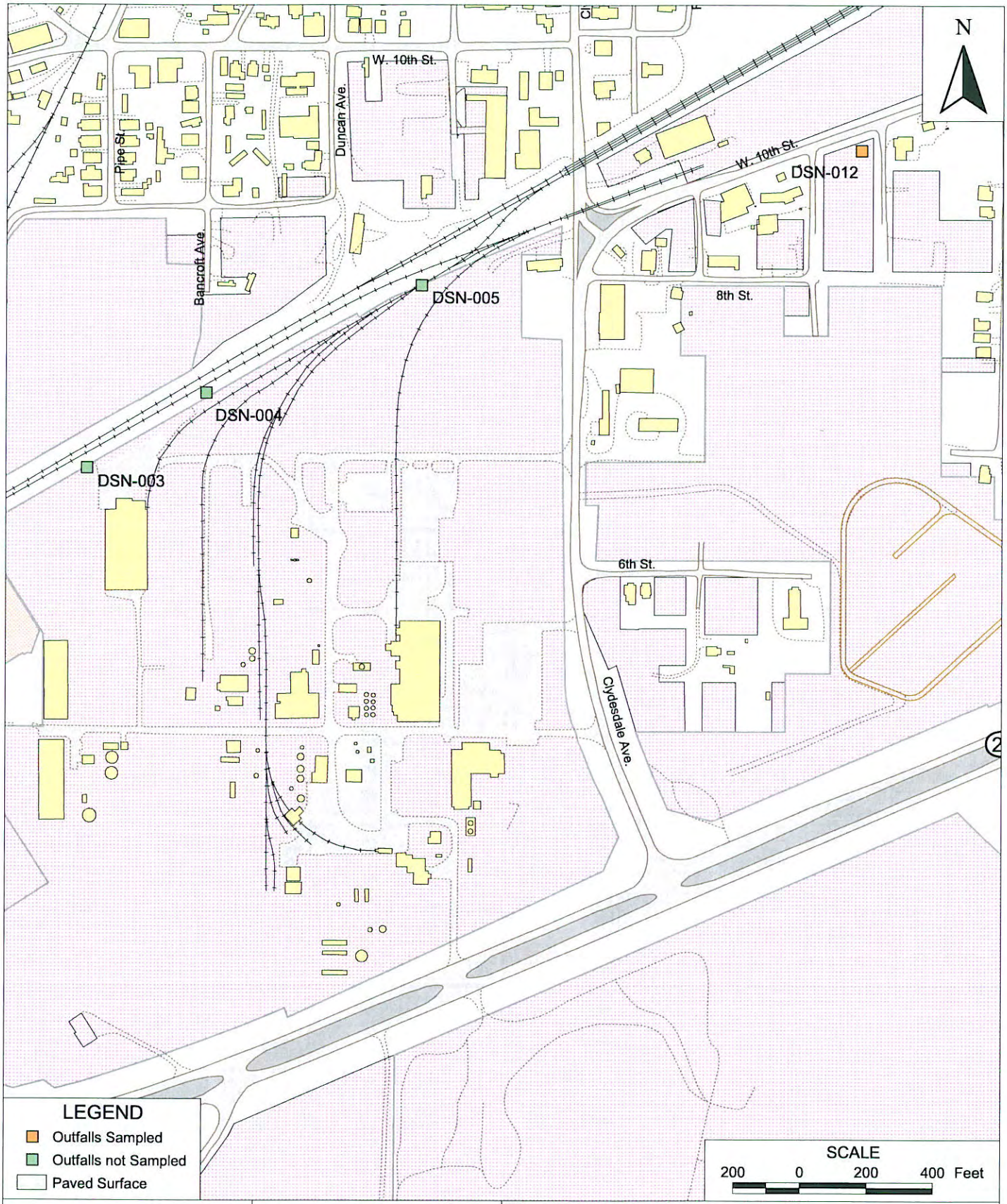
> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

NONCOMPLIANCE NOTIFICATION

If for any reason, the discharge does not comply with any daily minimum or maximum discharge limitations for an effluent characteristic specified in the current NPDES permit, verbally report the occurrence and circumstances of such discharge to ADEM within 24-hours after noting the discharge. Use a copy of the Noncompliance Notification Form provided with the NPDES permit (copy included for reference after Table 7.1-1) to prepare a written notice to submit to ADEM. This form is to be submitted no later than five (5) days after the verbal notice was given.

RECORDS

Records are to be retained of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, for a period of at least three years from the date of the sample measurement, report, or application. These records are to be kept at the Plant Site.



Golder Associates / SOLUTIA			Title: Storm Water Outfalls Operations & Maintenance Plan		
Project/File No: Q:\...\0116.apr	Produced By: JES	Checked By: CMM	Reviewed By: SM	Date: 14-Apr-2003	Figure No: 7.1-1

Rev. 07/07

TABLE 7.1-1

SURFACE WATER DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTLET DSN 0I2: STORM WATER FROM CLOSED LANDFILL, FROM THE THERMINOL PRODUCTION AREA, BIPHENYL PRODUCTION AREA, BOILER AREAS, EMPLOYEE PARKING LOT AND GROUNDWATER :

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS [1]	
		Daily Minimum	Daily Maximum	Monthly Average [2]	Measurement Frequency	Sample Type
Flow	MGD	-	Monitor	-	Quarterly	Instantaneous
PH	s.u.	-	Monitor	-	Quarterly	Grab
Biochemical Oxygen Demand, 5-day	mg/l	-	Monitor	-	Quarterly	Grab
Chemical Oxygen Demand	mg/l	-	Monitor	-	Quarterly	Grab
Oil and Grease	mg/l	-	15	-	Quarterly	Grab
Total Suspended Solids	mg/l	-	Monitor	-	Quarterly	Grab
Total Dissolved Solids	mg/l	-	Monitor	-	Quarterly	Grab
PCB-1016	ug/l	-	Monitor	-	Quarterly	Grab
PCB-1221	ug/l	-	Monitor	-	Quarterly	Grab
PCB-1232	ug/l	-	Monitor	-	Quarterly	Grab
PCB-1242	ug/l	-	Monitor	-	Quarterly	Grab
PCB-1248	ug/l	-	Monitor	-	Quarterly	Grab
PCB-1254	ug/l	-	Monitor	-	Quarterly	Grab
PCB-1260	ug/l	-	Monitor	-	Quarterly	Grab
Total PCBs	ug/l	-	Monitor	-	Quarterly	Grab

****THE DISCHARGE SHALL HAVE NO SHEEN AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS, OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**

[1] Samples collected to comply with the monitoring requirements specified above will be collected at the following location: At the nearest accessible location just prior to discharge and alter final treatment. Unless otherwise specified, composite samples will be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal lime intervals. All composite samples will be collected for the total period of discharge not to exceed 24 hours.

[2] Monthly average limits apply only when a parameter is monitored more than once in a month.

DSN012 STORM-WATER SAMPLING LOG

FACILITY NAME:	Solutia	DATE:	
SAMPLING TIME:	(24 Hour)	SEASON:	
TIME OF FIRST FLOW AT OUTFALL:	(24 Hour)		
FORM OF PRECIPITATION:	RAIN/SNOW		
MATERIAL:		WATER CONDITION:	
FLOW MEASURING TECHNIQUE:	Instantaneous (Manual)		
WATER DEPTH AT "V" WEIR:	Feet =	Inches	
DURATION OF STORM:	Minutes		
FLOW CHART CONVERSION:	Million Gallons Per Day		
	Cubic Feet Per Day		
MAX. FLOW RATE DURING EVENT:	Cubic Feet Per Second		
TOTAL FLOW VOLUME FROM EVENT:	Cubic Feet		
FLOW VOLUME DURING GRAB SAMPLE: (INITIAL 30 MINUTES)	Cubic Feet		
TOTAL MOISTURE DURING STORM EVENT:	Inches (Per Rain Gauge)		
TIME SINCE LAST STORM EVENT:	Hours		
WATER TEMPERATURE:	Deg. F.		

SUMMARY

FLOW:	(mgd)	PCB 1016 (ug/l) :	
Ph :		PCB 1221 (ug/l) :	
BOD (mg/l) :		PCB 1232 (ug/l) :	
COD (mg/l) :		PCB 1242 (ug/l) :	
TDS (mg/L) :		PCB 1248 (ug/l) :	
TSS (mg/L) :		PCB 1254 (ug/l) :	
OIL & GREASE : (mg/l)		PCB 1260 (ug/l) :	
		Total PCB's (ug/l) :	

Signature of Sampler

LANCE R. LEFLEUR
DIRECTOR

ROBERT J. BENTLEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

APRIL 11,2012

MR C ALAN RUTHERFORD
PLANT MANAGER
SOLUTIA INC
720 CLYDESDALE AVENUE
ANNISTON AL 36201

RE: NPDES Permit Number AL0001201

Dear Mr. Rutherford:

Attached is the issued copy of the above referenced permit. Please note the permit limitations and conditions with which the permittee must comply.

Future monitoring data should be submitted in accordance with the conditions of your permit. Please see PART I.C for your reporting requirements. To reduce the paperwork burden for both the Department and the Permittee, when submitting the required Discharge Monitoring Reports (DMRs), please **do not submit** lab worksheets, logs, reports or other paperwork not specifically required by the permit unless requested by ADEM staff.

For your convenience, DMR forms for the first three months following the permit effective date are attached. In the future, you should receive pre-printed DMR forms from the Department near the beginning of each calendar quarter.

Please be aware that Part I.C.1.c of your permit requires that you apply for participation in the Department's web-based electronic environmental (E2) reporting system for submittal of DMRs within 180 days of the effective date of this permit unless valid justification as to why you cannot participate is submitted in writing. After 180 days, hard copy DMRs may be used only with written approval from the Department. The E2 DMR system allows ADEM to electronically validate, acknowledge receipt, and upload data to the state's central wastewater database. This improves the accuracy of reported compliance data and reduces costs to both the regulated community and ADEM. The Permittee Participation Package may be downloaded online at **https://e2.adem.alabama.gov/npdes** or you may obtain a hard copy by submitting a written request or by emailing e2admin@adem.alabama.gov.

If you have questions regarding this permit or monitoring requirements, please contact Latoya Hall by email at lahall@adem.state.al.us or by phone at (334) 394-4366.

Sincerely,

Eric Sanderson, Chief
Industrial Section
Water Division

Enclosure: Final Permit

cc: EPA Region IV: Final Permit
Mike McCary, P & S: Final Permit
Montgomery Field Office: Final Permit

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S. W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (FAX)

Alabama Department of Environmental Management

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

PERMITTEE: SOLUTIA INC

FACILITY LOCATION: 702 CLYDESDALE AVENUE
ANNISTON, AL 36201

PERMIT NUMBER: AL0001201

RECEIVING WATERS: DSN012 UNNAMED TRIBUTARY TO SNOW CREEK

In accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1378 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, ***Code of Alabama 1975****, §§ 22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended,* ***Code of Alabama 1975****, §§22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to discharge into the above-named receiving waters.*

ISSUANCE DATE: APRIL 11, 2012

EFFECTIVE DATE: MAY 1, 2012

EXPIRATION DATE: APRIL 30, 2017

Glenda L. Dean

Alabama Department of Environmental Management

INDUSTRIAL SECTION
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT

TABLE OF CONTENTS

PART I DISCHARGE LIMITATIONS, CONDITIONS, AND REQUIREMENTS

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN012Q:Storm water from closed landfill, from the Therminol production area, biphenyl production area, boiler areas, employee parking lot and groundwater. 3/ 4/

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Daily Maximum	Monthly Average	Daily Minimum	Daily Maximum	Monthly Average	Measurement Frequency 2/	Sample Type	Seasonal
BOD, 5-Day (20 Deg. C)	-	-	-	REPORT mg/l	-	Quarterly	Grab	-
pH	-	-	REPORT S.U.	REPORT S.U.	-	Quarterly	Grab	-
Solids, Total Suspended	-	-	-	REPORT mg/l	-	Quarterly	Grab	-
Oil & Grease	-	-	-	15 mg/l	-	Quarterly	Grab	-
PCB-1016 (Arochlor 1016)	-	-	-	REPORT ug/l	-	Quarterly	Grab	-
PCB-1221 (Arochlor 1221)	-	-	-	REPORT ug/l	-	Quarterly	Grab	-
PCB-1232 (Arochlor 1232)	-	-	-	REPORT ug/l	-	Quarterly	Grab	-
PCB-1242 (Arochlor 1242)	-	-	-	REPORT ug/l	-	Quarterly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ See Part IV.A for Best Management Practices (BMP) Plan Requirements

4/ See Part IV.B for Stormwater Measurement and Sampling Techniques

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN012Q (continued):Storm water from closed landfill, from the Therminol production area, biphenyl production area, boiler areas, employee parking lot and groundwater. 3/ 4/

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Daily Maximum	Monthly Average	Daily Minimum	Daily Maximum	Monthly Average	Measurement Frequency 2/	Sample Type	Seasonal
PCB-1248 (Arochlor 1248)	-	-	-	REPORT ug/l	-	Quarterly	Grab	-
PCB-1254 (Arochlor 1254)	-	-	-	REPORT ug/l	-	Quarterly	Grab	-
PCB-1260 (Arochlor 1260)	-	-	-	REPORT ug/l	-	Quarterly	Grab	-
Flow, In Conduit or Thru Treatment Plant	REPORT MGD	-	-	-	-	Quarterly	Instantaneous	-
Solids, Total Dissolved	-	-	-	REPORT mg/l	-	Quarterly	Grab	-
Chemical Oxygen Demand (COD)	-	-	-	REPORT mg/l	-	Quarterly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ See Part IV.A for Best Management Practices (BMP) Plan Requirements

4/ See Part IV.B for Stormwater Measurement and Sampling Techniques

B. DISCHARGE MONITORING AND RECORD KEEPING REQUIREMENTS

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge and shall be in accordance with the provisions of this permit.

2. Test Procedures

For the purpose of reporting and compliance, permittees shall use one of the following procedures:

a. For parameters with an EPA established Minimum Level (ML), report the measured value if the analytical result is at or above the ML and report "0" for values below the ML. Test procedures for the analysis of pollutants shall conform to 40 CFR Part 136 and guidelines published pursuant to Section 304(h) of the FWPCA, 33 U.S.C. Section 1314(h). If more than one method for analysis of a substance is approved for use, a method having a minimum level lower than the permit limit shall be used. If the minimum level of all methods is higher than the permit limit, the method having the lowest minimum level shall be used and a report of less than the minimum level shall be reported as zero and will constitute compliance, however should EPA approve a method with a lower minimum level during the term of this permit the permittee shall use the newly approved method.

b. For pollutants parameters without an established ML, an interim ML may be utilized. The interim ML shall be calculated as 3.18 times the Method Detection Level (MDL) calculated pursuant to 40 CFR Part 136, Appendix B.

Permittees may develop an effluent matrix-specific ML, where an effluent matrix prevents attainment of the established ML. However, a matrix specific ML shall be based upon proper laboratory method and technique. Matrix-specific MLs must be approved by the Department, and may be developed by the permittee during permit issuance, reissuance, modification, or during compliance schedule.

In either case the measured value should be reported if the analytical result is at or above the ML and "0" reported for values below the ML.

c. For parameters without an EPA established ML, interim ML, or matrix-specific ML, a report of less than the detection limit shall constitute compliance if the detection limit of all analytical methods is higher than the permit limit using the most sensitive EPA approved method. For the purpose of calculating a monthly average, "0" shall be used for values reported less than the detection limit.

The Minimum Level utilized for procedures A and B above shall be reported on the permittee's DMR. When an EPA approved test procedure for analysis of a pollutant does not exist, the Director shall approve the procedure to be used.

3. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The facility name and location, point source number, date, time and exact place of sampling;

b. The name(s) of person(s) who obtained the samples or measurements;

c. The dates and times the analyses were performed;

d. The name(s) of the person(s) who performed the analyses;

e. The analytical techniques or methods used, including source of method and method number; and

f. The results of all required analyses.

4. Records Retention and Production

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the above reports or the application for this permit, for a period of at least three years from the date of the sample measurement, report or application. This period may be extended by request of the Director at any time. If litigation or other enforcement action, under the AWPCA and/or the FWPCA, is ongoing which involves any of the above records, the records shall be kept until the litigation is resolved. Upon the written request of the Director or his designee, the permittee shall provide the Director with a copy of any record required to be retained by this paragraph. Copies of these records shall not be submitted unless requested.

All records required to be kept for a period of three years shall be kept at the permitted facility or an alternate location approved by the Department in writing and shall be available for inspection.

5. Monitoring Equipment and Instrumentation

All equipment and instrumentation used to determine compliance with the requirements of this permit shall be installed, maintained, and calibrated in accordance with the manufacturer's instructions or, in the absence of manufacturer's instructions, in accordance with accepted practices. The permittee shall develop and maintain quality assurance procedures to ensure proper operation and maintenance of all equipment and instrumentation. The quality assurance procedures shall include the proper use, maintenance, and installation, when appropriate, of monitoring equipment at the plant site.

C. DISCHARGE REPORTING REQUIREMENTS

1. Reporting of Monitoring Requirements

a. The permittee shall conduct the required monitoring in accordance with the following schedule:

MONITORING REQUIRED MORE FREQUENTLY THAN MONTHLY AND MONTHLY shall be conducted during the first full month following the effective date of coverage under this permit and every month thereafter.

QUARTERLY MONITORING shall be conducted at least once during each calendar quarter. Calendar quarters are the periods of January through March, April through June, July through September, and October through December. The permittee shall conduct the quarterly monitoring during the first complete calendar quarter following the effective date of this permit and is then required to monitor once during each quarter thereafter. Quarterly monitoring may be done anytime during the quarter, unless restricted elsewhere in this permit, but it should be submitted with the last DMR due for the quarter, i.e. (March, June, September and December DMRs).

SEMIANNUAL MONITORING shall be conducted at least once during the period of January through June and at least once during the period of July through December. The permittee shall conduct the semiannual monitoring during the first complete calendar semiannual period following the effective date of this permit and is then required to monitor once during each semiannual period thereafter. Semiannual monitoring may be done anytime during the semiannual period, unless restricted elsewhere in this permit, but it should be submitted with the last DMR due for the month of the semiannual period, i.e. (June and December DMRs).

ANNUAL MONITORING shall be conducted at least once during the period of January through December. The permittee shall conduct the annual monitoring during the first complete calendar annual period following the effective date of this permit and is then required to monitor once during each annual period thereafter. Annual monitoring may be done anytime during the year, unless restricted elsewhere in this permit, but it should be submitted with the December DMR.

b. The permittee shall submit discharge monitoring reports (DMRs) on the forms provided by the Department and in accordance with the following schedule:

REPORTS OF QUARTERLY TESTING shall be submitted on a quarterly basis. The first report is due on the 28th day of **October 2012**. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period.

REPORTS OF SEMIANNUAL TESTING shall be submitted on a semiannual basis. The reports are due on the 28th day of JANUARY and the 28th day of JULY. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period.

REPORTS OF ANNUAL TESTING shall be submitted on an annual basis. The first report is due on the 28th day of JANUARY. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period.

c. The Department is utilizing a web-based electronic environmental (E2) reporting system for submittal of DMRs. The E2 DMR system allows ADEM to electronically validate, acknowledge receipt, and upload data to the state's central wastewater database. This improves the accuracy of reported compliance data and reduces costs to both the regulated community and ADEM. **If the permittee is not already participating in the e-DMR system, within 180 days of coverage under this permit, permittee must apply for participation in the e-DMR system unless the facility submits in writing valid justification as to why they cannot participate and the Department approves in writing utilization of hard copy DMR submittals.** To participate in this program, the Permittee Participation Package may be downloaded online at https://e2.adem.alabama.gov/npdes. If the electronic environmental (E2) reporting system is down (i.e. electronic submittal of DMR data is unable to be completed due to technical problems originating with the Department's system: this could include entry/submittal issues with an entire set of DMRs or individual parameters), permittee is not relieved of their obligation to submit DMR data to the Department by the required submittal date.

However, if the E2 system is down on the 28th day of the month or is down for an extended period f time as determined by the Department when a DMR is required to be submitted, the facility may submit the data in an alternate manner and format acceptable to the Department. Preapproved alternate acceptable methods include faxing, e-mailing, mailing, or hand-delivery of data such that they are received by the required reporting dat. Within five calendar days of the E2 system resuming operation, the permittee shall enter the data into the E2 reporting system, unless an alternate timeframe is approved by the Department. An attachment should be included with the E2 DMR submittal verifying the original submittal date (date of the fax, copy of dated e-mail, or hand-delivery stamped date). If a permittee is allowed to submit via the US Postal Service, the DMR must be legible and bear an original signature. Photo and electronic copies of the signature are not acceptable and shall not satisfy the reporting requirements of this permit. If the permittee, using approved analytical methods as specified in Provision I.B.2 monitors any discharge from a point source for a limited substance identified in Provision I.A of this permit more frequently than required by this permit, the results of such monitoring shall be included in the calculation and reporting of values on the DMR form and the increased frequency shall be indicated on the DMR form. In the event no discharge from a point source identified in Provision I.A of this permit and described more fully in the permittee's application occurs during a monitoring period, the permittee shall report "No Discharge" for such period on the appropriate DMR form.

d. All reports and forms required to be submitted by this permit, the AWPCA and the Department's Rules and regulations, shall be electronically signed (or, if allowed by the Department, traditionally signed) by a "responsible official" of the permittee as defined in ADEM Administrative Code Rule 335-6-6-.09 or a "duly authorized representative" of such official as defined in ADEM Administrative Code Rule 335-6-6-.09 and shall bear the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

e. The permittee may certify in writing that a discharge will not occur for an extended period of time and after such certification shall not be required to submit monitoring reports. Written notification of a planned resumption of discharge shall be submitted at least 30 days prior to resumption of the discharge. If an unplanned resumption of discharge occurs, written notification shall be submitted within 7 days of the resumption. In any case, all discharges shall comply with all provisions of this permit.

f. All Discharge Monitoring Report forms required to be submitted by this permit, the AWPCA and the Department's Rules, shall be addressed to:

Alabama Department of Environmental Management
Permits and Services Division
Environmental Data Section
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail containing Discharge Monitoring Reports shall be addressed to:

Alabama Department of Environmental Management
Permits and Services Division
Environmental Data Section
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059

g. All other correspondence and reports required to be submitted by this permit, the AWPCA and the Department's Rules, shall be addressed to:

Alabama Department of Environmental Management
Water Division
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail shall be addressed to:

Alabama Department of Environmental Management
Water Division
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059

h. If this permit is a reissuance, then the permittee shall continue to submit DMRs in accordance with the requirements of their previous permit until such time as DMRs are due as discussed in Part I.C.1.b. above.

2. Noncompliance Notification

a. 24-Hour Noncompliance Reporting

The permittee shall report to the Director, within 24-hours of becoming aware of any noncompliance which may endanger health or the environment. This shall include but is not limited to the following circumstances:

(1) does not comply with any daily minimum or maximum discharge limitation for an effluent characteristic specified in Provision I. A. of this permit which is denoted by an "(X)",

(2) threatens human health or welfare, fish or aquatic life, or water quality standards,

(3) does not comply with an applicable toxic pollutant effluent standard or prohibition established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a),

(4) contains a quantity of a hazardous substance which has been determined may be harmful to public health or welfare under Section 311(b)(4) of the FWPCA, 33 U.S.C. Section 1321(b)(4),

(5) exceeds any discharge limitation for an effluent characteristic as a result of an unanticipated bypass or upset, and

(6) is an unpermitted direct or indirect discharge of a pollutant to a water of the state (unpermitted discharges properly reported to the Department under any other requirement are not required to be reported under this provision).

The permittee shall orally report the occurrence and circumstances of such discharge to the Director within 24-hours after the permittee becomes aware of the occurrence of such discharge. In addition to the oral report, the permittee shall submit to the Director or Designee a written report as provided in Part I.C.2.c. no later than five (5) days after becoming aware of the occurrence of such discharge.

b. If for any reason, the permittee's discharge does not comply with any limitation of this permit, the permittee shall submit to the Director or Designee a written report as provided in Part I.C.2.c. below, such report shall be submitted with the next Discharge Monitoring Report required to be submitted by Part I.C.1. of this permit after becoming aware of the occurrence of such noncompliance.

c. Any written report required to be submitted to the Director or Designee by Part I.C.2 a. or b. shall be submitted using a copy of the Noncompliance Notification Form provided with this permit and shall include the following information:

(1) A description of the discharge and cause of noncompliance;
(2) The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
(3) A description of the steps taken and/or being taken to reduce or eliminate the noncomplying discharge and to prevent its recurrence.

D. OTHER REPORTING AND NOTIFICATION REQUIREMENTS

1. Anticipated Noncompliance

The permittee shall give the Director written advance notice of any planned changes or other circumstances regarding a facility which may result in noncompliance with permit requirements.

2. Termination of Discharge

The permittee shall notify the Director, in writing, when all discharges from any point source(s) identified in Provision I. A. of this permit have permanently ceased. This notification shall serve as sufficient cause for instituting procedures for modification or termination of the permit.

3. Updating Information

a. The permittee shall inform the Director of any change in the permittee's mailing address or telephone number or in the permittee's designation of a facility contact or office having the authority and responsibility to prevent and abate violations of the AWPCA, the Department's Rules and the terms and conditions of this permit, in writing, no later than ten (10) days after such change. Upon request of the Director or his designee, the permittee shall furnish the Director with an update of any information provided in the permit application.

b. If the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information with a written explanation for the mistake and/or omission.

4. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director or his designee may request to determine whether cause exists for modifying, revoking and re-issuing, suspending, or terminating this permit, in whole or in part, or to determine compliance with this permit.

5. Cooling Water and Boiler Water Additives

a. The permittee shall notify the Director in writing not later than thirty (30) days prior to instituting the use of any biocide corrosion inhibitor or chemical additive in a cooling or boiler system, not identified in the application for this permit, from which discharge is allowed by this permit. Notification is not required for additives that do not contain a heavy metal(s) as an active ingredient and that pass through a wastewater treatment system prior to discharge nor is notification required for additives that should not reasonably be expected to cause the cooling water or boiler water to exhibit toxicity as determined by analysis of manufacturer's data or testing by the permittee. Such notification shall include:

(1) name and general composition of biocide or chemical,
(2) 96-hour median tolerance limit data for organisms representative of the biota of the waterway into which the discharge will ultimately reach,
(3) quantities to be used,
(4) frequencies of use,
(5) proposed discharge concentrations, and
(6) EPA registration number, if applicable.

b. The use of a biocide or additive containing tributyl tin, tributyl tin oxide, zinc, chromium or related compounds in cooling or boiler system(s), from which a discharge regulated by this permit occurs, is prohibited except as exempted below. The use of a biocide or additive containing zinc, chromium or related compounds may be used in special circumstances if (1) the permit contains limits for these substances, or (2) the applicant demonstrates during the application process that the use of zinc, chromium or related compounds as a biocide or additive will not pose a reasonable potential to violate the applicable State water quality standards for these substances. The use of any additive, not identified in this permit or in the application for this permit or not exempted from notification under this permit is prohibited, prior to a determination by the Department that permit modification to control discharge of the additive is not required or prior to issuance of a permit modification controlling discharge of the additive.

6. Permit Issued Based On Estimated Characteristics

a. If this permit was issued based on estimates of the characteristics of a process discharge reported on an EPA NPDES Application Form 2D (EPA Form 3510-2D), the permittee shall complete and submit an EPA NPDES Application Form 2C (EPA Form 3510-2C) no later than two years after the date that discharge begins. Sampling required for completion of the Form 2C shall occur when a discharge(s) from the process(s) causing the new or increased discharge is occurring. If this permit was issued based on estimates concerning the composition of a storm water discharge(s), the permittee shall perform the sampling required by EPA NPDES Application Form 2F (EPA Form 3510-2F) no later than one year after the industrial activity generating the storm water discharge has been fully initiated.

b. This permit shall be reopened if required to address any new information resulting from the completion and submittal of the Form 2C and or 2F.

E. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the discharge limitations specified in Provision I. A. in accordance with the following schedule:

COMPLIANCE SHALL BE ATTAINED ON THE EFFECTIVE DATE OF THIS PERMIT

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

PART II OTHER REQUIREMENTS, RESPONSIBILITIES, AND DUTIES

A. OPERATIONAL AND MANAGEMENT REQUIREMENTS

1. Facilities Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities only when necessary to achieve compliance with the conditions of the permit.

2. Best Management Practices

a. Dilution water shall not be added to achieve compliance with discharge limitations except when the Director or his designee has granted prior written authorization for dilution to meet water quality requirements.

b. The permittee shall prepare, implement, and maintain a Spill Prevention, Control and Countermeasures (SPCC) Plan in accordance with 40 C.F.R. Section 112 if required thereby.

c. The permittee shall prepare, submit for approval and implement a Best Management Practices (BMP) Plan for containment of any or all process liquids or solids, in a manner such that these materials do not present a significant potential for discharge, if so required by the Director or his designee. When submitted and approved, the BMP Plan shall become a part of this permit and all requirements of the BMP Plan shall become requirements of this permit.

3. Spill Prevention, Control, and Management

The permittee shall provide spill prevention, control, and/or management sufficient to prevent any spills of pollutants from entering a water of the state or a publicly or privately owned treatment works. Any containment system used to implement this requirement shall be constructed of materials compatible with the substance(s) contained and which shall prevent the contamination of groundwater and such containment system shall be capable of retaining a volume equal to 110 percent of the capacity of the largest tank for which containment is provided.

B. OTHER RESPONSIBILITIES

1. Duty to Mitigate Adverse Impacts

The permittee shall promptly take all reasonable steps to mitigate and minimize or prevent any adverse impact on human health or the environment resulting from noncompliance with any discharge limitation specified in Provision I. A. of this permit, including such accelerated or additional monitoring of the discharge and/or the receiving waterbody as necessary to determine the nature and impact of the noncomplying discharge.

2. Right of Entry and Inspection

The permittee shall allow the Director, or an authorized representative, upon the presentation of proper credentials and other documents as may be required by law to:

a. enter upon the permittee's premises where a regulated facility or activity or point source is located or conducted, or where records must be kept under the conditions of the permit;

b. have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

c. inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the permit; and

d. sample or monitor, for the purposes of assuring permit compliance or as otherwise authorized by the AWPCA, any substances or parameters at any location.

C. BYPASS AND UPSET

1. Bypass

a. Any bypass is prohibited except as provided in b. and c. below:

b. A bypass is not prohibited if:

(1) It does not cause any discharge limitation specified in Provision I. A. of this permit to be exceeded;

(2) It enters the same receiving stream as the permitted outfall and;

(3) It is necessary for essential maintenance of a treatment or control facility or system to assure efficient operation of such facility or system.

c. A bypass is not prohibited and need not meet the discharge limitations specified in Provision I. A. of this permit if:

(1) It is unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime (this condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance); and

(3) The permittee submits a written request for authorization to bypass to the Director at least ten (10) days prior to the anticipated bypass (if possible), the permittee is granted such authorization, and the permittee complies with any conditions imposed by the Director to minimize any adverse impact on human health or the environment resulting from the bypass.

d. The permittee has the burden of establishing that each of the conditions of Provision II.C.1.b. or c. have been met to qualify for an exception to the general prohibition against bypassing contained in a. and an exemption, where applicable, from the discharge limitations specified in Provision I. A. of this permit.

2. Upset

a. A discharge which results from an upset need not meet the discharge limitations specified in Provision I. A. of this permit if:

(1) No later than 24-hours after becoming aware of the occurrence of the upset, the permittee orally reports the occurrence and circumstances of the upset to the Director or his designee; and

(2) No later than five (5) days after becoming aware of the occurrence of the upset, the permittee furnishes the Director with evidence, including properly signed, contemporaneous operating logs, or other relevant evidence, demonstrating that (i) an upset occurred; (ii) the permittee can identify the specific cause(s) of the upset; (iii) the permittee's facility was being properly operated at the time of the upset; and (iv) the permittee promptly took all reasonable steps to minimize any adverse impact on human health or the environment resulting from the upset.

b. The permittee has the burden of establishing that each of the conditions of Provision II. C.2.a. of this permit have been met to qualify for an exemption from the discharge limitations specified in Provision I.A. of this permit.

D. DUTY TO COMPLY WITH PERMIT, RULES, AND STATUTES

1. Duty to Comply

a. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the AWPCA and the FWPCA and is grounds for enforcement action, for permit termination, revocation and reissuance, suspension, modification; or denial of a permit renewal application.

b. The necessity to halt or reduce production or other activities in order to maintain compliance with the conditions of the permit shall not be a defense for a permittee in an enforcement action.

c. The discharge of a pollutant from a source not specifically identified in the permit application for this permit and not specifically included in the description of an outfall in this permit is not authorized and shall constitute noncompliance with this permit.

d. The permittee shall take all reasonable steps, including cessation of production or other activities, to minimize or prevent any violation of this permit or to minimize or prevent any adverse impact of any permit violation.

e. Nothing in this permit shall be construed to preclude and negate the permittee's responsibility or liability to apply for, obtain, or comply with other ADEM, Federal, State, or Local Government permits, certifications, licenses, or other approvals.

2. Removed Substances

Solids, sludges, filter backwash, or any other pollutant or other waste removed in the course of treatment or control of wastewaters shall be disposed of in a manner that complies with all applicable Department Rules.

3. Loss or Failure of Treatment Facilities

Upon the loss or failure of any treatment facilities, including but not limited to the loss or failure of the primary source of power of the treatment facility, the permittee shall, where necessary to maintain compliance with the discharge limitations specified in Provision I. A. of this permit, or any other terms or conditions of this permit, cease, reduce, or otherwise control production and/or all discharges until treatment is restored. If control of discharge during loss or failure of the primary source of power is to be accomplished by means of alternate power sources, standby generators, or retention of inadequately treated effluent, the permittee must furnish to the Director within six months a certification that such control mechanisms have been installed.

4. Compliance with Statutes and Rules

a. This permit has been issued under ADEM Administrative Code, Chapter 335-6-6. All provisions of this chapter, that are applicable to this permit, are hereby made a part of this permit. A copy of this chapter may be obtained for a small charge from the Office of General Counsel, Alabama Department of Environmental Management, 1400 Coliseum Blvd., Montgomery, AL 36130.

b. This permit does not authorize the noncompliance with or violation of any Laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws. FWPCA, 33 U.S.C. Section 1319, and Code of Alabama 1975, Section 22-22-14.

E. PERMIT TRANSFER, MODIFICATION, SUSPENSION, REVOCATION, AND REISSUANCE

1. Duty to Reapply or Notify of Intent to Cease Discharge

a. If the permittee intends to continue to discharge beyond the expiration date of this permit, the permittee shall file a complete permit application for reissuance of this permit at least 180 days prior to its expiration. If the permittee does not intend to continue discharge beyond the expiration of this permit, the permittee shall submit written notification of this intent which shall be signed by an individual meeting the signatory requirements for a permit application as set forth in ADEM Administrative Code Rule 335-6-6-.09.

b. Failure of the permittee to apply for reissuance at least 180 days prior to permit expiration will void the automatic continuation of the expiring permit provided by ADEM Administrative Code Rule 335-6-6-.06 and should the permit not be reissued for any reason any discharge after expiration of this permit will be an unpermitted discharge.

2. Change in Discharge

a. The permittee shall apply for a permit modification at least 180 days in advance of any facility expansion, production increase, process change, or other action that could result in the discharge of additional pollutants or increase the quantity of a discharged pollutant such that existing permit limitations would be exceeded or that could result in an additional discharge point. This requirement applies to pollutants that are or that are not subject to discharge limitations in this permit. No new or increased discharge may begin until the Director has authorized it by issuance of a permit modification or a reissued permit.

b. The permittee shall notify the Director as soon as it is known or there is reason to believe:

(1) That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:

(a) one hundred micrograms per liter;

(b) two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dini-trophenol; and one milligram per liter for antimony;

(c) five times the maximum concentration value reported for that pollutant in the permit application; or

(2) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:

(a) five hundred micrograms per liter;

(b) one milligram per liter for antimony;

(c) ten times the maximum concentration value reported for that pollutant in the permit application.

3. Transfer of Permit

This permit may not be transferred or the name of the permittee changed without notice to the Director and subsequent modification or revocation and reissuance of the permit to identify the new permittee and to incorporate any other changes as may be required under the FWPCA or AWPCA. In the case of a change in name, ownership or control of the permittee's premises only, a request for permit modification in a format acceptable to the Director is required at least 30 days prior to the change. In the case of a change in name, ownership or control of the permittee's premises accompanied by a change or proposed change in effluent characteristics, a complete permit application is required to be submitted to the Director at least 180 days prior to the change. Whenever the Director is notified of a change in name, ownership or control, he may decide not to modify the existing permit and require the submission of a new permit application.

4. Permit Modification and Revocation

a. This permit may be modified or revoked and reissued, in whole or in part, during its term for cause, including but not limited to, the following:

(1) If cause for termination under Provision II. E. 5. of this permit exists, the Director may choose to revoke and reissue this permit instead of terminating the permit;

(2) If a request to transfer this permit has been received, the Director may decide to revoke and reissue or to modify the permit; or

(3) If modification or revocation and reissuance is requested by the permittee and cause exists, the Director may grant the request.

b. This permit may be modified during its term for cause, including but not limited to, the following:

(1) If cause for termination under Provision II. E. 5. of this permit exists, the Director may choose to modify this permit instead of terminating this permit;

(2) There are material and substantial alterations or additions to the facility or activity generating wastewater which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit;

(3) The Director has received new information that was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance;

(4) A new or revised requirement(s) of any applicable standard or limitation is promulgated under Sections 301(b)(2)(C), (D), (E), and (F), and 307(a)(2) of the FWPCA;

(5) Errors in calculation of discharge limitations or typographical or clerical errors were made;

(6) To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, when the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued;

(7) To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, permits may be modified to change compliance schedules;

(8) To agree with a granted variance under 30l(c), 30l(g), 30l(h), 30l(k), or 3l6(a) of the FWPCA or for fundamentally different factors;

(9) To incorporate an applicable 307(a) FWPCA toxic effluent standard or prohibition;

(10) When required by the reopener conditions in this permit;

(11) When required under 40 CFR 403.8(e) (compliance schedule for development of pretreatment program);

(12) Upon failure of the state to notify, as required by Section 402(b)(3) of the FWPCA, another state whose waters may be affected by a discharge permitted by this permit;

(13) When required to correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions; or

(14) When requested by the permittee and the Director determines that the modification has cause and will not result in a violation of federal or state law, regulations or rules; or

5. Permit Termination

This permit may be terminated during its term for cause, including but not limited to, the following:

a. Violation of any term or condition of this permit;

b. The permittee's misrepresentation or failure to disclose fully all relevant facts in the permit application or during the permit issuance process or the permittee's misrepresentation of any relevant facts at any time;

c. Materially false or inaccurate statements or information in the permit application or the permit;

d. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

e. The permittee's discharge threatens human life or welfare or the maintenance of water quality standards;

f. Permanent closure of the facility generating the wastewater permitted to be discharged by this permit or permanent cessation of wastewater discharge;

g. New or revised requirements of any applicable standard or limitation that is promulgated under Sections 301(b)(2)(C), (D), (E), and (F), and 307(a)(2) of the FWPCA that the Director determines cannot be complied with by the permittee.

h. Any other cause allowed by the ADEM Administrative Code, Chapter 335-6-6.

6. Permit Suspension

This permit may be suspended during its term for noncompliance until the permittee has taken action(s) necessary to achieve compliance.

7. Request for Permit Action Does Not Stay Any Permit Requirement

The filing of a request by the permittee for modification, suspension or revocation of this permit, in whole or in part, does not stay any permit term or condition.

F. COMPLIANCE WITH TOXIC POLLUTANT STANDARD OR PROHIBITION

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a), for a toxic pollutant discharged by the permittee and such standard or prohibition is more stringent than any discharge limitation on the pollutant specified in Provision I. A. of this permit, or controls a pollutant not limited in Provision I. A. of this permit, this permit shall be modified to conform to the toxic pollutant effluent standard or prohibition and the permittee shall be notified of such modification. If this permit has not been modified to conform to the toxic pollutant effluent standard or prohibition before the effective date of such standard or prohibition, the permittee shall attain compliance with the requirements of the standard or prohibition within the time period required by the standard or prohibition and shall continue to comply with the standard or prohibition until this permit is modified or reissued.

G. DISCHARGE OF WASTEWATER GENERATED BY OTHERS

The discharge of wastewater, generated by any process, facility, or by any other means not under the operational control of the permittee or not identified in the application for this permit or not identified specifically in the description of an outfall in this permit is not authorized by this permit.

PART III OTHER PERMIT CONDITIONS

A. CIVIL AND CRIMINAL LIABILITY

1. Tampering

Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained or performed under the permit shall, upon conviction, be subject to penalties as provided by the AWPCA.

2. False Statements

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be subject to penalties as provided by the AWPCA.

3. Permit Enforcement

a. Any NPDES permit issued or reissued by the Department is a permit for the purpose of the AWPCA and the FWPCA and as such any terms, conditions, or limitations of the permit are enforceable under state and federal law.

b. Any person required to have a NPDES permit pursuant to ADEM Administrative Code Chapter 335-6-6 and who discharges pollutants without said permit, who violates the conditions of said permit, who discharges pollutants in a manner not authorized by the permit, or who violates applicable orders of the Department or any applicable rule or standard of the Department, is subject to any one or combination of the following enforcement actions under applicable state statutes.

(1) An administrative order requiring abatement, compliance, mitigation, cessation, clean-up, and/or penalties;

(2) An action for damages;

(3) An action for injunctive relief; or

(4) An action for penalties.

c. If the permittee is not in compliance with the conditions of an expiring or expired permit the Director may choose to do any or all of the following provided the permittee has made a timely and complete application for reissuance of the permit:

(1) initiate enforcement action based upon the permit which has been continued;

(2) issue a notice of intent to deny the permit reissuance. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operating without a permit;

(3) reissue the new permit with appropriate conditions; or

(4) take other actions authorized by these rules and AWPCA.

4. Relief from Liability

Except as provided in Provision II. C. 1. (Bypass) and Provision II. C. 2. (Upset), nothing in this permit shall be construed to relieve the permittee of civil or criminal liability under the AWPCA or FWPCA for noncompliance with any term or condition of this permit.

B. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the FWPCA, 33 U.S.C. Section 1321.

C. PROPERTY AND OTHER RIGHTS

This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, trespass, or any infringement of federal, state, or local laws or regulations, nor does it authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any waters of the state or of the United States.

D. AVAILABILITY OF REPORTS

Except for data determined to be confidential under Code of Alabama 1975, Section 22-22-9(c), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. Effluent data shall not be considered confidential.

E. EXPIRATION OF PERMITS FOR NEW OR INCREASED DISCHARGES

1. If this permit was issued for a new discharger or new source, this permit shall expire eighteen months after the issuance date if construction of the facility has not begun during the eighteen-month period.

2. If this permit was issued or modified to allow the discharge of increased quantities of pollutants to accommodate the modification of an existing facility and if construction of this modification has not begun during the eighteen month period after issuance of this permit or permit modification, this permit shall be modified to reduce the quantities of pollutants allowed to be discharged to those levels that would have been allowed if the modification of the facility had not been planned.

3. Construction has begun when the owner or operator has:

   a. begun, or caused to begin as part of a continuous on-site construction program:

      (1) any placement, assembly, or installation of facilities or equipment; or

      (2) significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or

   b. entered into a binding contractual obligation for the purpose of placement, assembly, or installation of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under the paragraph. The entering into a lease with the State of Alabama for exploration and production of hydrocarbons shall also be considered beginning construction.

F. COMPLIANCE WITH WATER QUALITY STANDARDS

1. On the basis of the permittee's application, plans, or other available information, the Department has determined that compliance with the terms and conditions of this permit should assure compliance with the applicable water quality standards.

2. Compliance with permit terms and conditions notwithstanding, if the permittee's discharge(s) from point sources identified in Provision I. A. of this permit cause or contribute to a condition in contravention of state water quality standards, the Department may require abatement action to be taken by the permittee in emergency situations or modify the permit pursuant to the Department's Rules, or both.

3. If the Department determines, on the basis of a notice provided pursuant to this permit or any investigation, inspection or sampling, that a modification of this permit is necessary to assure maintenance of water quality standards or compliance with other provisions of the AWPCA or FWPCA, the Department may require such modification and, in cases of emergency, the Director may prohibit the discharge until the permit has been modified.

G. GROUNDWATER

Unless specifically authorized by a permit issued by the Department, the discharge of pollutants to groundwater is prohibited. Should a threat of groundwater contamination occur, the Director may require groundwater monitoring to properly assess the degree of the problem and the Director may require that the permittee undertake measures to abate any such discharge and/or contamination.

H. DEFINITIONS

1. Average monthly discharge limitation - means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).

2. Average weekly discharge limitation - means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).

3. Arithmetic Mean – means the summation of the individual values of any set of values divided by the number of individual values.

4. AWPCA - means the Alabama Water Pollution Control Act.

5. BOD – means the five-day measure of the pollutant parameter biochemical oxygen demand.

6. Bypass - means the intentional diversion of waste streams from any portion of a treatment facility.

7. CBOD – means the five-day measure of the pollutant parameter carbonaceous biochemical oxygen demand.

8. Daily discharge - means the discharge of a pollutant measured during any consecutive 24-hour period in accordance with the sample type and analytical methodology specified by the discharge permit.

9. Daily maximum - means the highest value of any individual sample result obtained during a day.

10. Daily minimum - means the lowest value of any individual sample result obtained during a day.

11. Day - means any consecutive 24-hour period.

12. Department - means the Alabama Department of Environmental Management.

13. Director - means the Director of the Department.

14. Discharge - means "[t]he addition, introduction, leaking, spilling or emitting of any sewage, industrial waste, pollutant or other wastes into waters of the state". Code of Alabama 1975, Section 22-22-1(b)(8).

15. Discharge Monitoring Report (DMR) - means the form approved by the Director to accomplish reporting requirements of an NPDES permit.

16. DO – means dissolved oxygen.

17. 8HC – means 8-hour composite sample, including any of the following:

    a. The mixing of at least 5 equal volume samples collected at constant time intervals of not more than 2 hours over a period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.

    b. A sample continuously collected at a constant rate over period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.

18. EPA - means the United States Environmental Protection Agency.

19. FC – means the pollutant parameter fecal coliform.

20. Flow – means the total volume of discharge in a 24-hour period.

21. FWPCA - means the Federal Water Pollution Control Act.

22. Geometric Mean – means the Nth root of the product of the individual values of any set of values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered one (1).

23. Grab Sample – means a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the discharge.

24. Indirect Discharger – means a nondomestic discharger who discharges pollutants to a publicly owned treatment works or a privately owned treatment facility operated by another person.

25. Industrial User – means those industries identified in the Standard Industrial Classification manual, Bureau of the Budget 1967, as amended and supplemented, under the category "Division D – Manufacturing" and such other classes of significant waste producers as, by regulation, the Director deems appropriate.

26. MGD – means million gallons per day.

27. Monthly Average – means, other than for fecal coliform bacteria, the arithmetic mean of all the composite or grab samples taken for the daily discharges collected in one month period. The monthly average for fecal coliform

bacteria is the geometric mean of daily discharge samples collected in a one month period. The monthly average for flow is the arithmetic mean of all flow measurements taken in a one month period.

28. New Discharger – means a person, owning or operating any building, structure, facility or installation:

    a. from which there is or may be a discharge of pollutants;

    b. that did not commence the discharge of pollutants prior to August 13, 1979, and which is not a new source; and

    c. which has never received a final effective NPDES permit for dischargers at that site.

29. NH3-N – means the pollutant parameter ammonia, measured as nitrogen.

30. Permit application - means forms and additional information that is required by ADEM Administrative Code Rule 335-6-6-.08 and applicable permit fees.

31. Point source - means "any discernible, confined and discrete conveyance, including but not limited to any pipe, channel, ditch, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, . . . from which pollutants are or may be discharged." Section 502(14) of the FWPCA, 33 U.S.C. Section 1362(14).

32. Pollutant - includes for purposes of this permit, but is not limited to, those pollutants specified in Code of Alabama 1975, Section 22-22-1(b)(3) and those effluent characteristics specified in Provision I. A. of this permit.

33. Privately Owned Treatment Works – means any devices or system which is used to treat wastes from any facility whose operator is not the operator of the treatment works, and which is not a "POTW".

34. Publicly Owned Treatment Works – means a wastewater collection and treatment facility owned by the State, municipality, regional entity composed of two or more municipalities, or another entity created by the State or local authority for the purpose of collecting and treating municipal wastewater.

35. Receiving Stream – means the "waters" receiving a "discharge" from a "point source".

36. Severe property damage - means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

37. Significant Source – means a source which discharges 0.025 MGD or more to a POTW or greater than five percent of the treatment work's capacity, or a source which is a primary industry as defined by the U.S. EPA or which discharges a priority or toxic pollutant.

38. TKN – means the pollutant parameter Total Kjeldahl Nitrogen.

39. TON – means the pollutant parameter Total Organic Nitrogen.

40. TRC – means Total Residual Chlorine.

41. TSS – means the pollutant parameter Total Suspended Solids.

42. 24HC – means 24-hour composite sample, including any of the following:

    a. the mixing of at least 12 equal volume samples collected at constant time intervals of not more than 2 hours over a period of 24 hours;

    b. a sample collected over a consecutive 24-hour period using an automatic sampler composite to one sample. As a minimum, samples shall be collected hourly and each shall be no more than one twenty-fourth (1/24) of the total sample volume collected;

    c. a sample collected over a consecutive 24-hour period using an automatic composite sampler composited proportional to flow.

43. Upset - means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit discharge limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

44. Waters - means "[a]ll waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the state, natural or artificial. This does not include waters which are entirely confined and retained completely upon the

property of a single individual, partnership or corporation unless such waters are used in interstate commerce." Code of Alabama 1975, Section 22-22-1(b)(2). Waters "include all navigable waters" as defined in Section 502(7) of the FWPCA, 22 U.S.C. Section 1362(7), which are within the State of Alabama.

45. Week - means the period beginning at twelve midnight Saturday and ending at twelve midnight the following Saturday.

46. Weekly (7-day and calendar week) Average – is the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The calendar week is defined as beginning on Sunday and ending on Saturday. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for the calendar week shall be included in the data for the month that contains the Saturday.

I. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

PART IV ADDITIONAL REQUIREMENTS, CONDITIONS, AND LIMITATIONS

A. BEST MANAGEMENT PRACTICES (BMP) PLAN REQUIREMENTS

1. BMP Plan

The permittee shall develop and implement a Best Management Practices (BMP) Plan which prevents, or minimizes the potential for, the release of pollutants from ancillary activities, including material storage areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas, to the waters of the State through plant site runoff; spillage or leaks; sludge or waste disposal; or drainage from raw material storage.

2. Plan Content

The permittee shall prepare and implement a best management practices (BMP) plan, which shall:

a. Establish specific objectives for the control of pollutants:

(1) Each facility component or system shall be examined for its potential for causing a release of significant amounts of pollutants to waters of the State due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.

(2) Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g. precipitation), or circumstances to result in significant amounts of pollutants reaching surface waters, the plan should include a prediction of the direction, rate of flow, and total quantity of pollutants which could be discharged from the facility as a result of each condition or circumstance.

b. Establish specific best management practices to meet the objectives identified under paragraph a. of this section, addressing each component or system capable of causing a release of significant amounts of pollutants to the waters of the State, and identifying specific preventative or remedial measures to be implemented;

c. Establish a program to identify and repair leaking equipment items and damaged containment structures, which may contribute to contaminated storm water runoff. This program must include regular visual inspections of equipment, containment structures and of the facility in general to ensure that the BMP is continually implemented and effective.

d. Prevent the spillage or loss of fluids, oil, grease, gasoline, etc. from vehicle and equipment maintenance activities and thereby prevent the contamination of storm water from these substances;

e. Prevent or minimize storm water contact with material stored on site;

f. Designate by position or name the person or persons responsible for the day to day implementation of the BMP;

g. Provide for routine inspections, on days during which the facility is manned, of any structures that function to prevent storm water pollution or to remove pollutants from storm water and of the facility in general to ensure that the BMP is continually implemented and effective;

h. Provide for the use and disposal of any material used to absorb spilled fluids that could contaminate storm water;

i. Develop a solvent management plan, if solvents are used on site. The solvent management plan shall include as a minimum lists of the total organic compounds on site; the method of disposal used instead of dumping, such as reclamation, contract hauling; and the procedures for assuring that toxic organics do not routinely spill or leak into the storm water;

j. Provide for the disposal of all used oils, hydraulic fluids, solvent degreasing material, etc. in accordance with good management practices and any applicable state or federal regulations;

k. Include a diagram of the facility showing the locations where storm water exits the facility, the locations of any structure or other mechanisms intended to prevent pollution of storm water or to remove pollutants from storm water, the locations of any collection and handling systems;

l. Provide control sufficient to prevent or control pollution of storm water by soil particles to the degree required to maintain compliance with the water quality standard for turbidity applicable to the waterbody(s) receiving discharge(s) under this permit;

m. Provide spill prevention, control, and/or management sufficient to prevent or minimize contaminated storm water runoff. Any containment system used to implement this requirement shall be constructed of materials compatible with the substance(s) contained and shall prevent the contamination of groundwater. The containment system shall also be capable of retaining a volume equal to 110 percent of the capacity of the largest tank for which containment is provided;

n. Provide and maintain curbing, diking or other means of isolating process areas to the extent necessary to allow segregation and collection for treatment of contaminated storm water from process areas;

o. Be reviewed by plant engineering staff and the plant manager; and

p. Bear the signature of the plant manager.

3. Compliance Schedule

The permittee shall have reviewed (and revised if necessary) and fully implemented the BMP plan as soon as practicable but no later than six months after the effective date of this permit.

4. Department Review

a. When requested by the Director or his designee, the permittee shall make the BMP available for Department review.

b. The Director or his designee may notify the permittee at any time that the BMP is deficient and require correction of the deficiency.

c. The permittee shall correct any BMP deficiency identified by the Director or his designee within 30 days of receipt of notification and shall certify to the Department that the correction has been made and implemented.

5. Administrative Procedures

a. A copy of the BMP shall be maintained at the facility and shall be available for inspection by representatives of the Department.

b. A log of the routine inspection required above shall be maintained at the facility and shall be available for inspection by representatives of the Department. The log shall contain records of all inspections performed for the last three years and each entry shall be signed by the person performing the inspection.

c. The permittee shall provide training for any personnel required to implement the BMP and shall retain documentation of such training at the facility. This documentation shall be available for inspection by representatives of the Department. Training shall be performed prior to the date that implementation of the BMP is required.

d. BMP Plan Modification. The permittee shall amend the BMP plan whenever there is a change in the facility or change in operation of the facility which materially increases the potential for the ancillary activities to result in a discharge of significant amounts of pollutants.

e. BMP Plan Review. The permittee shall complete a review and evaluation of the BMP plan at least once every three years from the date of preparation of the BMP plan. Documentation of the BMP Plan review and evaluation shall be signed and dated by the Plant Manager.

B. STORM WATER FLOW MEASUREMENT AND SAMPLING REQUIREMENTS

1. Storm Water Flow Measurement

a. All storm water samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches.

b. The total volume of storm water discharged for the event must be monitored, including the date and duration (in hours) and rainfall (in inches) for storm event(s) sampled. The duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event must be a minimum of 72 hours. This information must be recorded as part of the sampling procedure and records retained according to Part I.B. of this permit.

c. The volume may be measured using flow measuring devices, or estimated based on a modification of the Rational Method using total depth of rainfall, the size of the drainage area serving a storm water outfall, and an estimate of the runoff coefficient of the drainage area. This information must be recorded as part of the sampling procedure and records retained according to Part I.B. of this permit.

2. Storm Water Sampling

a. A grab sample, if required by this permit, shall be taken during the first thirty minutes of the discharge (or as soon thereafter as practicable); and a flow-weighted composite sample, if required by this permit, shall be taken for the entire event or for the first three hours of the event.

b. All test procedures will be in accordance with part I.B. of this permit.

LAURIE ROPER
SOLUTIA INC - AL0001201
720 CLYDESDALE AVENUE

ANNISTON, AL 36201

TO: **ALABAMA NPDES DISCHARGERS**
RE: DISCHARGE MONITORING REPORTS (DMRs)

Enclosed are DMR reporting forms which should have preprinted **current limits** for your permit along with other pertinent data. Only an original of each form is required to be returned. Please use the applicable **'Sample Type', 'Quantity/Concentration Unit', and 'Frequency of Analysis' and 'Reason Not Reported'** codes listed on this memo when reporting. If utilizing the 'Reason Not Reported' codes for a parameter, enter "**NODI = then the appropriate code**" in one of the areas usually utilized for reporting monitoring values (THIS APPLIES ONLY WHEN ALL VALUES FOR THE ENTIRE MONITORING PERIOD MEET THAT CONDITION). **PLEASE MAKE SURE THAT THE ENTRIES ARE LEGIBLE, ESPECIALLY IF MAKING CORRECTIONS (OVERTYPES, ERASURES, ETC.).** ***DATA MUST BE REPORTED WHERE THERE ARE NO ****** FOR EACH PARAMETER.***

THE ENCLOSED FORMS ARE TO BE USED AS A REPORTING TOOL ONLY AND ANY ERRORS REGARDING MONITORING FREQUENCIES OR PARAMETERS DOES NOT RELIEVE YOU OF THE RESPONSIBILITY OF MEETING THE CONDITIONS OF YOUR PERMIT REQUIREMENTS. If there are any inconsistencies with your permit requirements please identify them and report them in writing to ADEM within thirty (30) days or by telephone as soon as possible. **Return the ORIGINAL DMR to ADEM at the following address.**

MAILING ADDRESS: ADEM
PERMITS AND SERVICES DIVISION
ENVIRONMENTAL DATA SECTION
P O BOX 301463
MONTGOMERY, AL 36130-1463

Only overnight delivery should be addressed to the physical address: 1400 COLISEUM BLVD; MONTGOMERY, AL 36110-2059

Should you have questions regarding the DMR Forms, please call your ADEM contact or Water Division at (334) 271-7799 and be prepared with your permit number and county.

'REASON NOT REPORTED'

A GENERAL PERMIT EXEMPTION
B BELOW DETECTION LIMIT/NO DETECTION
C NO DISCHARGE
D LOST SAMPLE/DATA NOT AVAILABLE
E ANALYSIS NOT CONDUCTED/NO SAMPLE
F INSUFFICIENT FLOW FOR SAMPLING
G SAMPLING EQUIPMENT FAILURE
H INVALID TEST
I LAND APPLIED
J RECYCLED, WATER-CLOSED SYSTEM
K NATURAL DISASTER
L DMR RECEIVED BUT NOT ENTERED
Q NOT QUANTIFIABLE
R ADMINISTRATIVELY RESOLVED
S FIRE CONDITIONS
V WEATHER RELATED
W DRY LYSIMETER/WELL
X PARAMETER/VALUE NOT REPORTED
1 WRONG FLOW
2 OPERATION SHUTDOWN
4 DISCHARGE TO LAGOON/GROUNDWATER
5 FROZEN CONDITIONS
6 PRODUCTION BASED LIMITS DON'T APPLY TO MP
7 NO INFLUENT
8 *COMMENTS PROVIDED BY THE APPOINTING AUTHORITY
9 MONITORING IS CONDITIONAL/NOT REQUIRED THIS MONITORING PERIOD

* NOTE: Code only to be utilized by ADEM/EPA.

Alabama Department of Environmental Management Discharge Monitoring Report *(DMR)*

PERMITTEE NAME: Solutia Inc
MAILING ADDRESS: 720 Clydesdale Avenue Anniston, AL 36201
FACILITY: Solutia
LOCATION: 702 Clydesdale Avenue Anniston, AL 36201

PERMIT NUMBER: AL0001201
MONITORING POINT: 012Q
MONITORING PERIOD:
YY | MM | DD YY | MM | DD
From: 12 07 01 **To:** 12 09 30

MINOR
COUNTY: Calhoun
PROGRAM: Industrial
*** **NO DISCHARGE [ ]** ***
NOTE: Read instructions before completing this form.

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
BOD, 5-DAY (20 DEG. C)	Sample Measurement	*****	*****	*****	*****	*****		19 mg/l			
Parameter Code: 00310 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab
PH	Sample Measurement	*****	*****	*****		*****		12 S.U.			
Parameter Code: 00400 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		report minimum daily	*****	report maximum daily			Quarterly	Grab
SOLIDS, TOTAL SUSPENDED	Sample Measurement	*****	*****	*****	*****	*****		19 mg/l			
Parameter Code: 00530 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab
OIL & GREASE	Sample Measurement	*****	*****	*****	*****	*****		19 mg/l			
Parameter Code: 00556 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	15 maximum daily			Quarterly	Grab
PCB-1016 (AROCHLOR 1016)	Sample Measurement	*****	*****	*****	*****	*****		28 ug/l			
Parameter Code: 34671 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab
PCB-1221 (AROCHLOR 1221)	Sample Measurement	*****	*****	*****	*****	*****		28 ug/l			
Parameter Code: 39488 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab
PCB-1232 (AROCHLOR 1232)	Sample Measurement	*****	*****	*****	*****	*****		28 ug/l			
Parameter Code: 39492 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab

NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NO	DATE

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

Alabama Department of Environmental Management Discharge Monitoring Report *(DMR)*

PERMITTEE NAME: Solutia Inc
MAILING ADDRESS: 720 Clydesdale Avenue Anniston, AL 36201
FACILITY: Solutia
LOCATION: 702 Clydesdale Avenue Anniston, AL 36201

PERMIT NUMBER: AL0001201
MONITORING POINT: 012Q
MONITORING PERIOD:
YY | MM | DD YY | MM | DD
From: 12 07 01 **To:** 12 09 30

MINOR
COUNTY: Calhoun
PROGRAM: Industrial
*** NO DISCHARGE [ ] ***
NOTE: Read instructions before completing this form.

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
PCB-1242 (AROCHLOR 1242)	Sample Measurement	*****	*****	*****	*****	*****		28 ug/l			
Parameter Code: 39496 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab
PCB-1248 (AROCHLOR 1248)	Sample Measurement	*****	*****	*****	*****	*****		28 ug/l			
Parameter Code: 39500 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab
PCB-1254 (AROCHLOR 1254)	Sample Measurement	*****	*****	*****	*****	*****		28 ug/l			
Parameter Code: 39504 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab
PCB-1260 (AROCHLOR 1260)	Sample Measurement	*****	*****	*****	*****	*****		28 ug/l			
Parameter Code: 39508 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	Sample Measurement	*****		03 MGD	*****	*****	*****	*****			
Parameter Code: 50050 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	report maximum daily		*****	*****	*****			Quarterly	Instantaneous
SOLIDS, TOTAL DISSOLVED	Sample Measurement	*****	*****	*****	*****	*****		19 mg/l			
Parameter Code: 70295 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab
CHEMICAL OXYGEN DEMAND (COD)	Sample Measurement	*****	*****	*****	*****	*****		19 mg/l			
Parameter Code: 81017 Stage Code: 1 EFFLUENT GROSS VALUE	Permit Requirement	*****	*****		*****	*****	report maximum daily			Quarterly	Grab

NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NO	DATE

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

ADEM
NONCOMPLIANCE NOTIFICATION FORM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WATER DIVISION – INDUSTRIAL AND MUNICIPAL SECTIONS
NONCOMPLIANCE NOTIFICATION FORM

PERMITTEE NAME: _____ PERMIT NO: _____

FACILITY LOCATION: _____

DMR REPORTING PERIOD: _____

1. DESCRIPTION OF DISCHARGE: (Include outfall number (s))

2. DESCRIPTION OF NON-COMPLIANCE: (Attach additional pages if necessary):

LIST EFFLUENT VIOLATIONS (If applicable)			
Outfall Number (s)	NONCOMPLIANCE PARAMETER(S)	Result Reported (Include units)	Permit Limit (Include units)
LIST MONITORING / REPORTING VIOLATIONS (If applicable)			
Outfall Number (s)	NONCOMPLIANCE PARAMETER(S)	Monitoring / Reporting Violation (Provide description)	

3. CAUSE OF NON-COMPLIANCE (Attach additional pages if necessary):

4. PERIOD OF NONCOMPLIANCE: (Include exact date(s) and time(s) or, if not corrected, the anticipated time the noncompliance is expected to continue):

5. DESCRIPTION OF STEPS TAKEN AND/OR BEING TAKEN TO REDUCE OR ELIMINATE THE NONCOMPLYING DISCHARGE AND TO PREVENT ITS RECURRENCE (attach additional pages if necessary):

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____
NAME AND TITLE OF RESPONSIBLE OFFICIAL (type or print)

_____/_____
SIGNATURE OF RESPONSIBLE OFFICIAL / DATE SIGNED

ADEM Form 421 09/05

CHAPTER 8.0 O&M FOR OFF-SITE REMEDIAL/CORRECTIVE ACTION PROJECTS

Section 8.1 OXFORD LAKE SOFTBALL COMPLEX

The Oxford Lake Softball Complex is a city-owned community recreational area. The Complex originally consisted of the athletic field (four softball fields) in the eastern portion and an open area in the western portion adjacent to Snow Creek. Solutia implemented Remedial Actions at the Complex that expanded the Complex to include an additional paved access road, a pedestrian walkway, parking areas and eight tennis courts.

The following remedial actions were completed at the Complex:

- PCB-containing surface soil was excavated and replaced with clean soil in three of the four softball fields;
- The soil removed from the softball fields was relocated an area adjacent to the fields and capped with an asphalt cover (parking lot);
- A soil cover was placed in an open area located south of Recreation Drive and east of Snow Creek, and
- An asphalt cover (parking lots and tennis courts) was constructed to cover PCB-contaminated soil in an area north of Recreation Drive.

The parking lot west of the softball fields and south of Recreation Drive has a multi-layer asphalt cover constructed of a non-woven geotextile fabric placed over the stockpiled soil, covered with twelve inches of compacted crushed aggregate base, 14 inches of 3-inch diameter aggregate, four inches of additional crushed aggregate, and three inches of asphalt. A gravel-filled French drain was installed around the perimeter of the asphalt cover to drain the aggregate material beneath the pavement. The French drain is connected to drainage pipes that convey the surface runoff beyond the base of the cover. The side slopes of the parking lot are constructed of clean soil and covered with grass sod. The walkway from the parking lot to the foot bridge is also paved with four inches of gravel topped by three inches of asphalt. The foot bridge is constructed of pressure-treated lumber.

The parking lot north of Recreation Drive and east of the tennis courts has both an asphalt and soil cover. The vegetated soil cover area in the center of the parking lot consists of a non-woven geotextile marker layer topped with a minimum of nine inches of clean soil. The paved area consists of six inches of cement stabilized subbase material, topped by a non-woven geotextile, nine inches of crushed aggregate base course, and three inches of asphalt.

The tennis courts were constructed by placing a non-woven geotextile over a cement-stabilized compacted soil subgrade, eight inches of compacted fill, four and a half inches of crushed aggregate base, one and a half inches of an asphalt leveling course, and an acrylic surface.

The soil cover area was constructed by placing a non-woven geotextile maker layer overlain by 12 inches of clean soil cover with vegetation.

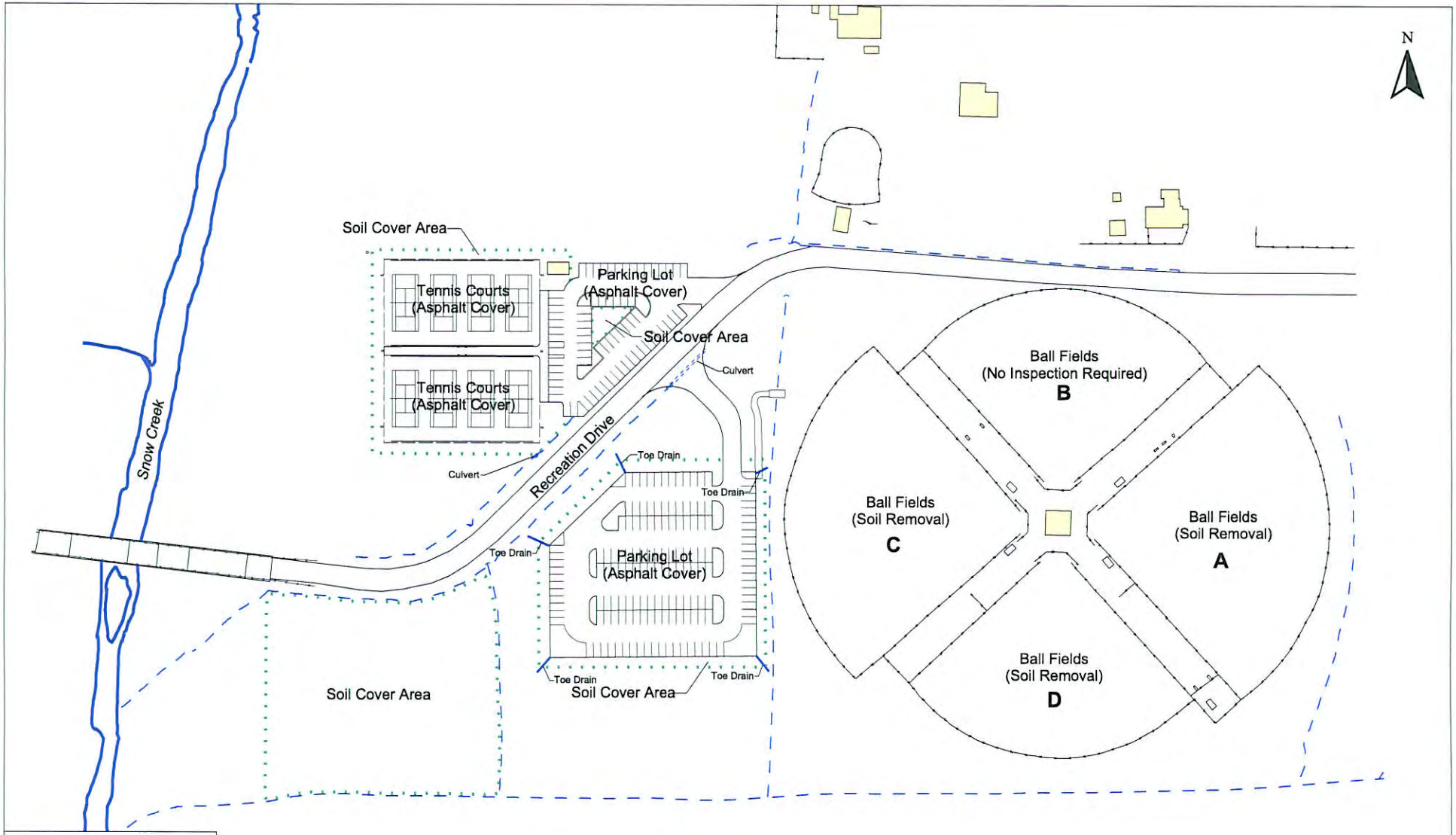
The Oxford Lake Softball Complex is to be inspected in accordance with the schedule listed in Section 3.6. The inspection will be performed as described in Section 3.3 and Section 3.5 of the O&M Plan.

Locations of the Oxford Lake Softball Complex inspection items are shown on Figure 8.1-1. The inspection items are to be documented on Inspection Log No. 8.1-1.

Documentation of the remedial measures and O&M requirements for the Oxford Lake Softball Complex is included in the reports titled "Parking Lot Multi-Layer Cover Interim Measures Report for the Oxford Lake Softball Complex," "Tennis Court and Parking Area Interim Measures Report for the Oxford Lake Softball Complex," and "Oxford Lake Softball Complex Interim Measures Report."

Softball Field at the Oxford Lake Complex

Parking and Tennis Courts



Golder Associates / SOLUTIA			Title: Oxford Lake Softball Complex Operations & Maintenance Plan		
Project/File No: Q:\...\0116.apr	Produced By: JES	Checked By: CMM	Reviewed By: JM	Date: 14-Apr-2003	Figure No: 8.1-1

Rev. 07/07

OXFORD LAKE SOFTBALL COMPLEX
(Inspect semi-annually and after significant storm events)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Ball Fields	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Is there erosion evident?	Yes		No		"
	C4	Is there settlement or subsidence evident?	Yes		No		"
Asphalt Covers	AC1	Is asphalt cracked or torn up anywhere?	Yes		No		(If Yes, describe below)
	AC2	Is there settlement or subsidence evident?	Yes		No		"
	AC3	Is there plant growth in or around asphalt?	Yes		No		"
Soil Covered Areas	SC1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	SC2	Is there soil cracking evident?	Yes		No		"
	SC3	Is there erosion evident?	Yes		No		"
	SC4	Is there settlement or subsidence evident?	Yes		No		"
Ditches and Drainage Channels	D1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	D2	Is there sediment buildup?	Yes		No		"
Pipes / Culverts and Headwalls	P1	Debris, obstructions or sediments at pipe inlets (obstructing more than $^1/_5$ of the diameter or the pipe)?	Yes		No		(If Yes, describe below)
	P2	Is there erosion around the inlets / outlets?	Yes		No		"
	P3	Any cracks or settlement at inlets / outlets?	Yes		No		"
Toe Drains	TD1	Are any toe drains clogged or blocked?	Yes		No		(If Yes, describe below)
	TD2	Is there sediment buildup at toe drains?	Yes		No		"
	TD3	Is there erosion around the toe drains?	Yes		No		"
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS*

Describe any items requiring work. Mark the location of the item on the Oxford Lake Complex figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Form Revision Log

Rev #	Date	Item No.	Item
3.1A	2009	TD1 - TD3	Toe Drains Added
3.1B	2013		Added Revision Log

Section 8.2 CENTRAL STAGING AND SOIL MANAGEMENT AREA

The CSSMA is located adjacent to the Solutia facility, north of West 10th Street, east of Clydesdale Avenue, and south of the Norfolk Southern railroad tracks. The location of the CSSMA is shown on Figure 8.2-1. The property was acquired by Solutia from the Miller Estate and comprises approximately 9 acres. The CSSMA was used for the final disposition of soil removed from residential properties in the Anniston area that contained PCBs at concentrations less than 10 milligrams per kilogram (mg/kg), as determined by the five point composite sampling procedure required by the Non-Time-Critical (NTC) Removal Agreement executed with the USEPA. The CSSMA consists of two cells, the Western Cell and Eastern Cell. The closure cover was constructed on the Western Cell during the week of August 26, 2005, and the closure cover construction on the Eastern Cell was completed the week of May 15, 2006.

The finished elevations of both cells (Western Cell and Eastern Cell) were sloped to provide natural drainage toward existing drainage conveyances discharging to the adjacent railroad ditch (11th Street Ditch). The closure cover system constructed at the CSSMA consisted of a non-woven geotextile (marker layer) placed above the PCB-containing soil and overlain by 1 foot of clean cover soil capable of sustaining plant growth (vegetative soil layer). The cover system for the Western Cell was also constructed to support future development of the area. The finished elevation and cover construction provides a suitable base for future redevelopment of the property for industrial and/or commercial purposes. The approximate extent of the two cells is shown on Figure 8.2-1.

The CSSMA and associated surface water management structures, including the drainage ditch separating the two cells, are to be inspected as described in Section 3.2, Section 3.3, Section 3.5, and Section 3.6 of the O&M Plan. Trees/bushes located within the drainage ditch separating the two cells shall be cut down and removed every two years.

Locations of the CSSMA inspection items are shown on Figure 8.2-1. The inspection items are to be documented on Inspection Log No. 8.2-1.

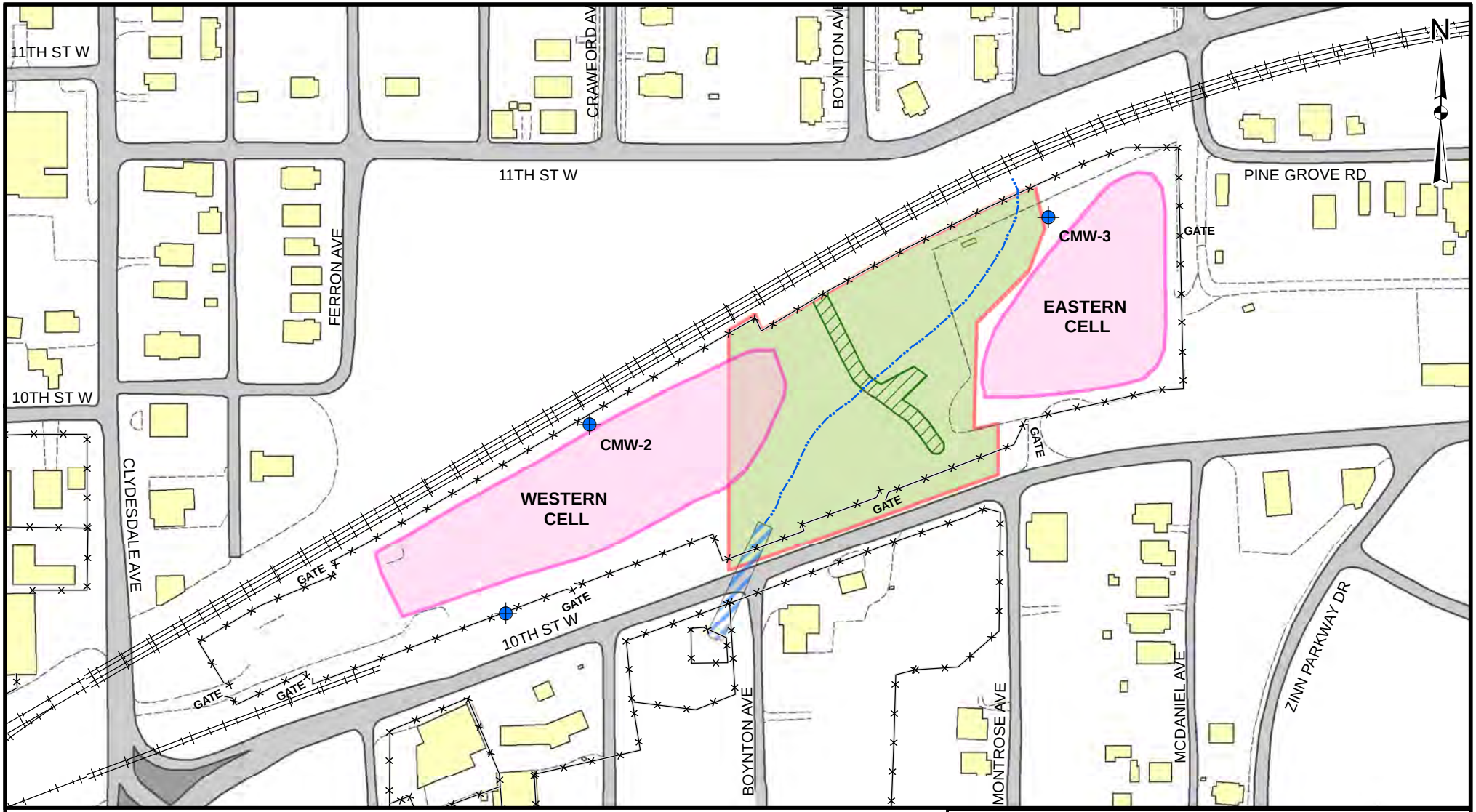
Documentation of the closure and O&M requirements for the Central Staging and Soil Management Area is included in the report titled “Central Staging and Soil Management Area Final Closure Report.” In accordance with this report, Annual Effectiveness Reports will be submitted that document the effectiveness of the final cover placement and will include a summary of inspections and maintenance activities performed during the year.

A notation was placed and recorded on the deed for the property identifying the locations and dimensions of the placement cells, restricting future use of the property for commercial and/or industrial purposes, restricting the installation of any groundwater supply wells, and identifying requirements and procedures for long-term maintenance of the final cover. Any future intrusive subsurface work in the areas where the cells are located will be restricted to require proper management of any PCB-containing soils and preservation of an equivalent final cover.

Photo taken from top of Eastern Cell looking toward the Western Cell

Vegetated Side Slope of Western Cell.

Map Document: Q:\PROJECTS\2012\123-9004 Solutia\W - O & M\Active Drawings\1239004-W001 CSSMA.mxd / Modified 1/10/2014 9:45:37 AM by rsmalley / Exported 1/10/2014 9:46:01 AM by rsmalley



LEGEND

- MONITORING WELL
- DRAINAGE DITCH
- FENCE
- CLOSED CSSMA CELLS
- SOIL-HDPE GEOMEMBRANE LINER
- 1997 IM COVER LIMITS
- BOX CULVERT

200 0 200 Feet

PROJECT

SOLUTIA

TITLE

CENTRAL STAGING AND SOIL MANAGEMENT AREA OPERATIONS & MAINTENANCE PLAN

Golder Associates

PROJECT No.	1239004OM1-2013A		FILE No.	1239004-W001 CSSMA.mxd
DESIGN	-	-	SCALE: AS SHOWN	REV. 3.1
GIS	RJC	1/10/2014		
CHECK	CMM	1/10/2014		
REVIEW	GLH	1/10/2014		

8.2-1

CENTRAL STAGING AND SOIL MANAGEMENT AREA
(Inspect monthly and after significant storm events)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Security Items	S1	Are signs visible and in good condition?	Yes		No		(If No, describe below)
	S2	Are gates functioning properly?	Yes		No		"
	S3	Are gates locked?	Yes		No		"
	S4	Locks in good condition (signs of rust, etc.)?	Yes		No		"
	S5	Do locks work?	Yes		No		"
	S6	Is fence in good condition?	Yes		No		
Cover System	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Is there erosion evident?	Yes		No		"
	C4	Is there settlement or subsidence evident?	Yes		No		"
Ditches and Drainage Channels	D1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	D2	Is there sediment buildup?	Yes		No		"
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on a figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log

Form Revision Log

Rev #	Date	No.	Item
3.1A	2009	S6	Security Item Added
3.1B	2013		Added Revision Log

Section 8.3 11TH STREET DITCH LINING PROJECT

The 11th Street Ditch is located north of the Solutia facility immediately south and north of the Norfolk Southern railroad tracks. The ditch conveys surface water flow on both sides of the railroad tracks and eventually discharges into Snow Creek. The location of the 11th Street Ditch is shown on Figure 8.3-1. Solutia implemented a Remedial Action by lining the ditch with concrete/shotcrete, riprap and gravel. The following lining systems were implemented along the 11th Street Ditch:

DITCH LININGS

The 11th Street Ditch Lining project includes the following components:

- Approximately 2,100 feet of concrete lined ditch (with underlying geocomposite) on the north side of the railroad, west of Clydesdale Avenue (Ditch Segments B1 through B5);
- Approximately 1,900 feet of concrete lined ditch (with underlying geocomposite) on the south side of the railroad, west of Clydesdale Avenue (Ditch Segments D2 and C1 through C7);
- Approximately 2,500 feet of concrete lined ditch (with underlying geocomposite) on the north side of the railroad, east of Clydesdale Avenue (Ditch Segments F1, F2, and G1 through G5);
- Approximately 420 feet of concrete and riprap lined ditch located on property owned by the Alabama Power Company that discharges to the concrete lined ditch on the northern boundary of the plant (Ditch Segment A1);
- Approximately 1,120 feet of ballast (gravel) and geotextile lined ditch on the south side of the railroad, east of Clydesdale Avenue (Ditch Segment E1);
- Ballast (gravel) and geotextile lined ditch on the south side of the railroad, west of Clydesdale Avenue (Ditch Segment D1);
- Riprap and geotextile lined swale on the north side of the railroad, west of Clydesdale Avenue (Area north of B3); and
- Concrete, riprap and geotextile lined ditch on the north side of the railroad, east of Clydesdale Avenue (Confluence with Snow Creek).

There are four notification signs mounted on posts and located at each side of Clydesdale Avenue and Mc Daniel Avenue. These signs will be inspected and repaired or replaced, if necessary. The signs need to remain legible.

There are five energy dissipation curbs located within the lined area of the ditch which may capture sediment. Sediment samples will be collected in accordance with the following schedule, provided an adequate amount of sediment has accumulated behind the rubber curbs:

- Year 1 (2005) – Collect two samples (one each from two separate locations) semiannually;
- Year 2 (2006) – Collect two samples (one each from two separate locations) semiannually;
- Year 3 (2007) – Collect two samples (one each from two separate locations) annually;
- Year 4 (2008) – Collect two samples (one each from two separate locations) annually; and
- Year 5 (2009) – Collect two samples (one each from two separate locations) annually.

Samples will be analyzed for PCBs using Method SW846 8082 at a certified laboratory. It is anticipated that additional sampling will not be required beyond the initial 5-year period; however, a final determination will be made pending a review of sample results.

The 11th Street Ditch Lining Project is to be inspected in accordance with the schedule listed in Section 3.6. The inspection will be performed as described in Section 3.3 and Section 3.5 of the O&M Plan.

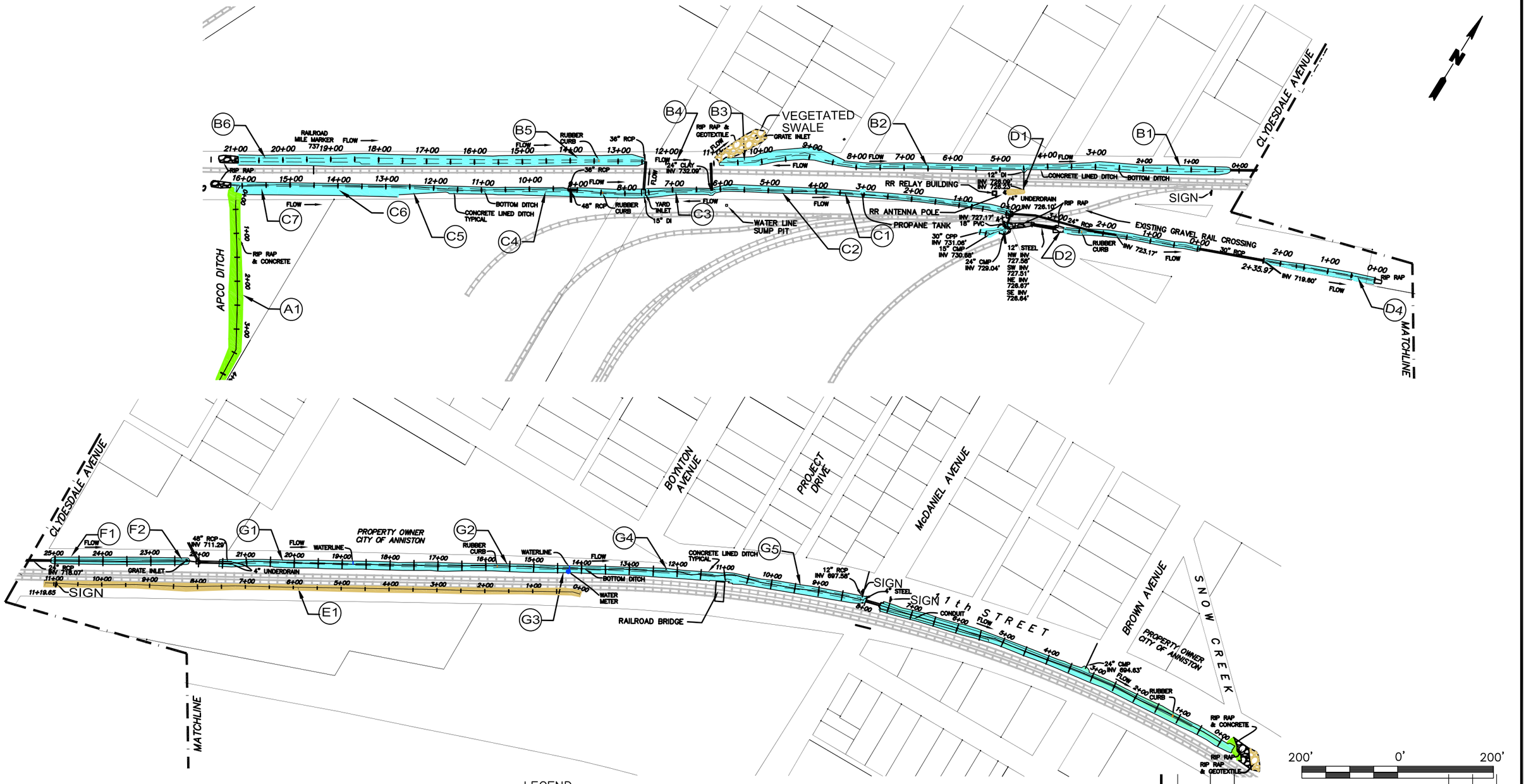
The location of the 11th Street Ditch Lining Project is shown on Figure 8.3-1. The inspection items are to be documented on Inspection Log No. 8.3-1.

Documentation of the remedial measures and O&M requirements for the 11th Street Ditch Lining Project is included in the report titled "Operation and Maintenance Plan for the 11th Street Ditch Removal Response Action."

Ditch – North of Plant, South of Railroad, and West of Clydesdale Road (Segment C4)

Ditch - North of Plant, North of Railroad, and West of Clydesdale Road (Segment B5)

End of Ditch at Snow Creek



LEGEND

- B5 — DITCH SEGMENT LOCATION AND IDENTIFICATION
- RIP RAP AND CONCRETE
- BALLAST AND GEOTEXTILE FABRIC
- CONCRETE LINER WITH DITCH INVERT LINES
- RIP RAP & GEOTEXTILE
- RIP RAP

SOURCE: ROUX ASSOCIATES, INC., MARCH 2005

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
△	–	–	–	–		

PROJECT

OPERATIONS & MAINTENANCE PLAN

TITLE

11TH STREET DITCH LINING

Golder Associates
Atlanta, Georgia

PROJECT No.		943-3680	FILE No.		943-3680
DESIGN	–	–	SCALE	AS SHOWN	REV. –
CADD	JES	04/05			
CHECK					
REVIEW					

FIG 8.3-1

11th STREET DITCH LINING
(Quarterly Inspection)

INSPECTION ITEM	CHECKLIST	YES	NO	IF YES, DESCRIBE
CONCRETE B1 - B3	Is significant cracking or spalling observed?			
	Is vegetation growing through cracks, expansion joints, or curbs?			
	Is geocomposite exposed?			
	Are contraction/expansion joints damaged?			
CONCRETE B4 - B6	Is significant cracking or spalling observed?			
	Is vegetation growing through cracks, expansion joints, or curbs?			
	Is geocomposite exposed?			
	Are rubber curbs damaged? (Sample Point No. 5)			
	Are contraction/expansion joints damaged?			
CONCRETE C1 - C7	Is significant cracking or spalling observed?			
	Is vegetation growing through cracks, expansion joints, or curbs?			
	Is geocomposite exposed?			
	Are rubber curbs damaged? (Sample Point No. 1)			
	Are contraction/expansion joints damaged?			
CONCRETE D2	Is significant cracking or spalling observed?			
	Is vegetation growing through cracks, expansion joints, or curbs?			
	Is geocomposite exposed?			
	Are rubber curbs damaged? (Sample Point No. 2)			
	Are contraction/expansion joints damaged?			
CONCRETE D4	Is significant cracking or spalling observed?			
	Is vegetation growing through cracks, expansion joints, or curbs?			
	Is geocomposite exposed?			
	Is there significant sediment in the ditch?			
	Are contraction/expansion joints damaged?			
CONCRETE F1 - F2	Is significant cracking or spalling observed?			
	Is vegetation growing through cracks, expansion joints, or curbs?			
	Is geocomposite exposed?			
	Is drainage grate clogged?			
	Are contraction/expansion joints damaged?			
CONCRETE G1 - G5	Is significant cracking or spalling observed?			
	Is vegetation growing through cracks, expansion joints, or curbs?			
	Is geocomposite exposed?			
	Are rubber curbs damaged? (Sample Point No. 3)			
	Does Riprap need repair?			
	Are contraction/expansion joints damaged?			
CONCRETE End of G5 - Snow Creek	Is significant cracking or spalling observed?			
	Is vegetation growing through cracks, expansion joints, or curbs?			
	Is geocomposite exposed?			
	Are rubber curbs damaged? (Sample Point No. 4)			
	Are contraction/expansion joints damaged?			
CONCRETE APCO Ditch	Is significant cracking or spalling observed?			
	Is vegetation growing through cracks?			
SAMPLING	Is there enough sediment behind the rubber curbs to collect two samples, one each from two locations?			
	Which point(s) were sampled?			
RIP RAP North of APCO Ditch	Is erosion or wash-out of the Rip Rap observed?			
	Is the underlying geotextile exposed?			
	Is excessive vegetation growth observed?			
	Is significant settlement observed?			
RIP RAP Swale North of Segment B3	Is erosion or wash-out of the Rip Rap observed?			
	Is the underlying geotextile exposed?			
	Is excessive vegetation growth observed?			
	Is significant settlement observed?			
RIP RAP Snow Creek	Is erosion or wash-out of the Rip Rap observed?			
	Is the underlying geotextile exposed?			
	Is excessive vegetation growth observed?			
	Is significant settlement observed?			
GRAVEL D1	Is gravel eroded or washed out?			
	Is geotextile exposed?			
GRAVEL E1	Is gravel eroded or washed out?			
	Is geotextile exposed?			
SIGNS	Are signs damaged in any way?			
	Are the sign posts damaged in any way?			

11th STREET DITCH LINING
(Quarterly Inspection)

INSPECTION ITEM	CHECKLIST	YES	NO	IF YES, DESCRIBE

GENERAL COMMENTS	

FOLLOW UP	

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on a figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log

Inspector Name: _____

Inspector Signature: _____ **Date:** _____

Form Revision Log

Rev #	Date	No.	Item
3.1	2013		Added Revision Log

Section 8.4 CHOCCOLOCCO CREEK WASTE WATER TREATMENT PLANT STOCKPILE

The Choccolocco Creek Waste Water Treatment Plant (WWTP) is located on Friendship Road within the incorporated limits of the City of Oxford**,** Alabama, on a property bound on the north by Interstate 20 and on the south by Choccolocco Creek. The property contains approximately 49 acres and is transected by Snow Creek. The WWTP facilities lie on 33 acres of this tract located to the west of Snow Creek, while the project site for the stockpile is located on a 16-acre parcel east of Snow Creek. As a result of a WWTP expansion, approximately 44,000 cubic yards of PCB-containing soil were excavated, transported and deposited in a stockpile across (east of) Snow Creek. The excavated soils were consolidated into a 4.2-acre stockpile and covered with a multi-layered cap system consisting of the following components (from top to bottom):

- Six inches of topsoil with vegetative cover (only on the upper portion of the cover system);
- A riprap armor constructed around the lower portion of the slope of the stockpile (for flood protection);
- 18- inch thick soil cover layer;
- Geocomposite drainage layer (single sided) that outlets to the cover riprap armor; and
- Geomembrane - 40 mil thick HDPE geomembrane.

There are no specific locations around the stockpile to inspect the outlet of the cover system drainage layer. However, sediment buildup around the toe of the stockpile should be minimized to prevent potential clogging of the cover system toe drain. The stockpile and associated surface water management and flood protection structures, will be inspected as described in Section 3.3, Section 3.5, and Section 3.6 of the O&M Plan.

Locations of the Choccolocco Creek Waste Water Treatment Plant Stockpile inspection items are shown on Figure 8.4-1. The inspection items are to be documented on Inspection Log No. 8.4-1.

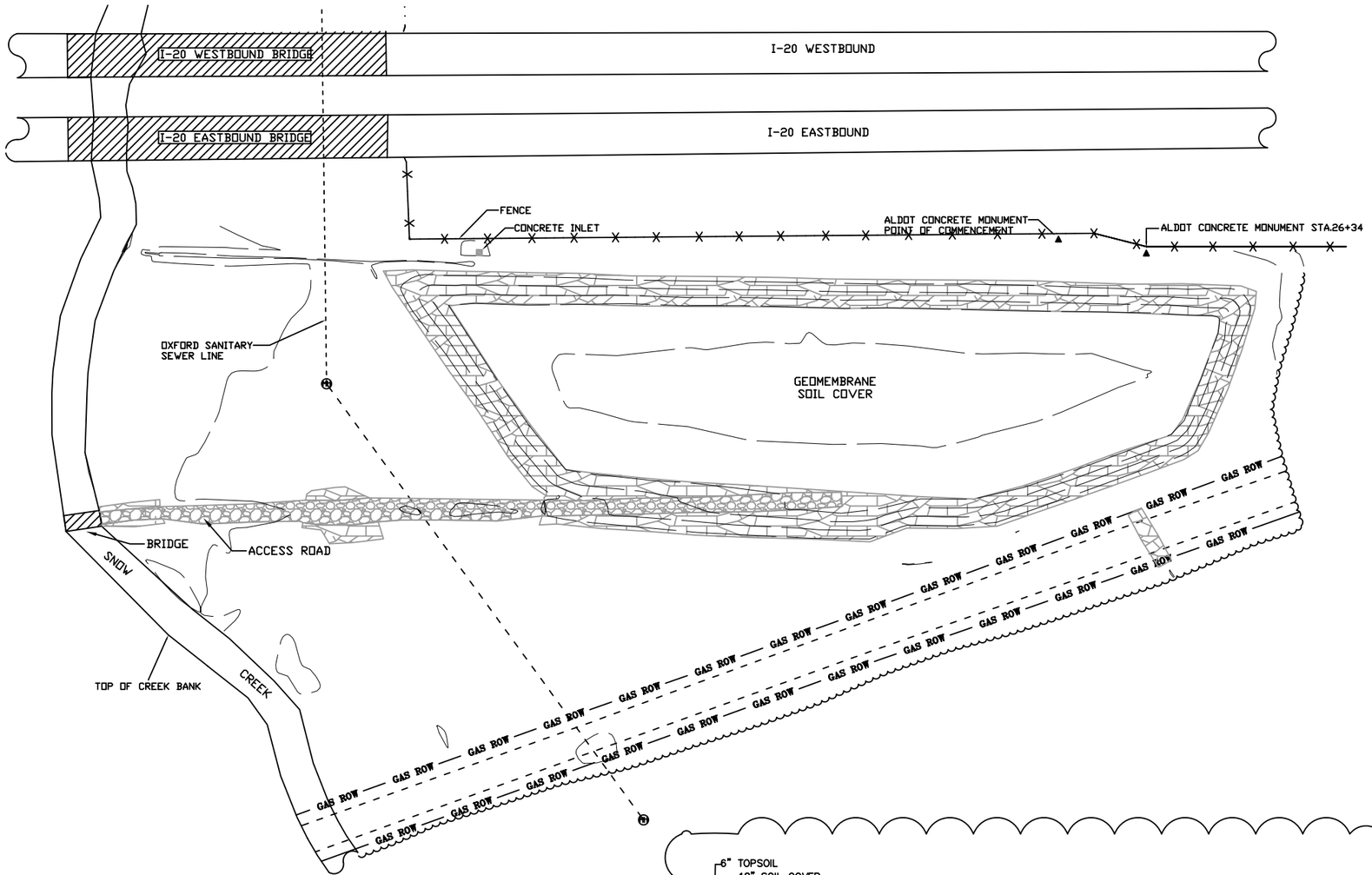
Documentation of the closure and O&M requirements for the Choccolocco Creek Waste Water Treatment Plant Stockpile is included in the report titled, “Final Corrective Measures Implementation Report, Excavation Soil Stockpile at Choccolocco Creek Wastewater Treatment Plant,” dated May 2007. In accordance with this report, Annual Effectiveness Reports will be submitted that document the effectiveness

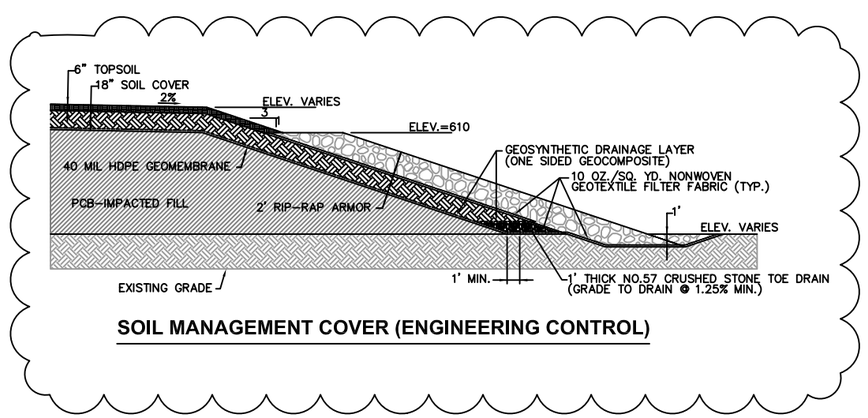
of the final cover placement and will include a summary of inspections and maintenance activities performed during the year.

A notation was placed and recorded on the deed for the property identifying the locations and dimensions of the placement cell, restricting future use of the property for commercial and/or industrial purposes, restricting the installation of any groundwater supply wells, and identifying requirements and procedures for long-term maintenance of the final cover.

Top of Stockpile with Topsoil and Vegetation

Access Road and Flood Protection Riprap Armor





SOIL MANAGEMENT COVER (ENGINEERING CONTROL)

N

LEGEND

- ▲ Other monument Found (see drawing for description)
- Man Hole
- Gravel
- Riprap
- Fence
- Gas line
- Sanitary Sewer Line
- 2.5' Contour Interval

0' 60' 120' 240'

SCALE IN FEET

SOURCE: TAYLOR LAND SURVEYING, AS-BUILT SURVEY, JANUARY 2007

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
1	–	–	–	–		

PROJECT

OPERATIONS & MAINTENANCE PLAN

TITLE

CHOCCOLOCCO CREEK WASTE WATER TREATMENT PLANT STOCKPILE

Golder Associates
Atlanta, Georgia

PROJECT No.		943-3680	FILE No.		943-3680
DESIGN	–	–	SCALE	AS SHOWN	REV. –
CADD	JES	04/05			
CHECK					
REVIEW					

FIG 8.4-1

CHOCCOLOCCO CREEK WASTE WATER TREATMENT PLANT STOCKPILE
(Inspect monthly and after significant storm events)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

WWTP Site Manager: Gary O'Dell - 310-3619
WWTP Assistant: Bryan Lipham - 453-1758

Item & Item No.		Checklist					
Cap & Cover System (HDPE Lined area)	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Is there erosion evident?	Yes		No		"
	C4	Is there settlement or subsidence evident?	Yes		No		"
Flood Protection Rip-Rap Armor	ES1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	ES2	Is there sediment buildup?	Yes		No		"
	ES3	Has any of the rip rap fallen out of place?	Yes		No		"
Ditches and Drainage Channels	D1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	D2	Is there sediment buildup?	Yes		No		"
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"
Security Items	S1	Are gates functioning properly?	Yes		No		(If No, describe below)
	S2	Are gates locked?	Yes		No		"
	S3	Locks in good condition (signs of rust, etc.)?	Yes		No		"
	S4	Do locks work?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS

Describe any items requiring work. Mark the location of the item on the WWTP Stockpile figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

* Attach completed Maintenance / Repair Log.

Form Revision Log

Rev #	Date	Item No.	Item
3.1A	2009	S1 - S4	Security Items Added
3.1B	2013		Added Revision Log

Section 8.5 HIGHWAY 21 BRIDGE COVER

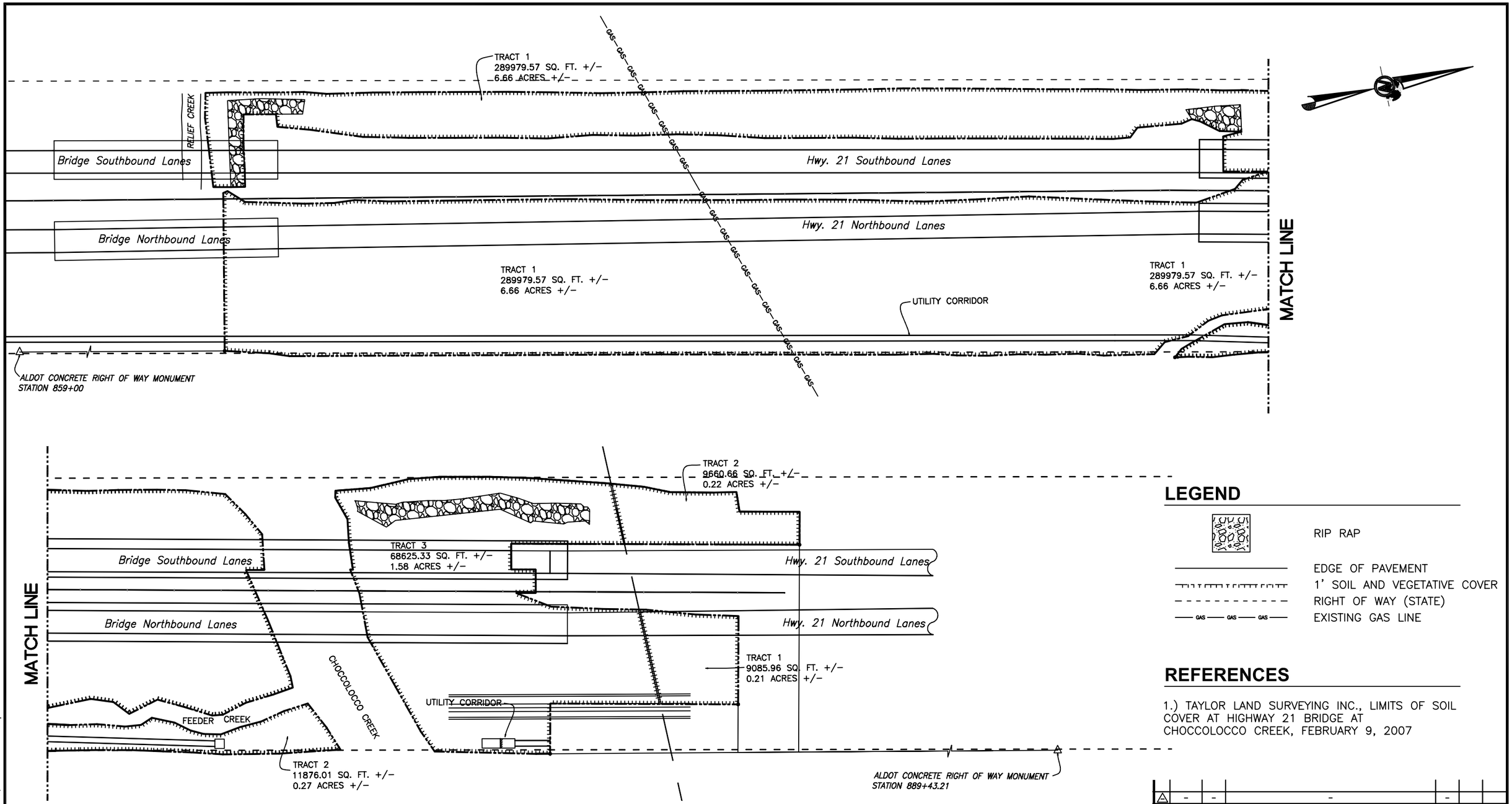
The Alabama Department of Transportation (ALDOT) completed its planned expansion of State Highway 21 to incorporate a divided highway system on March 1, 2007. As part of this expansion, ALDOT constructed a new bridge on State Highway 21 over Choccolocco Creek. The area of the bridge expansion is located within the 100-year floodplain of the creek, where previous environmental studies identified PCBs in near-surface soils and sediments located on property within the footprint of the proposed highway and bridge construction activities. The ALDOT construction project included the construction of new primary and relief bridges over Choccolocco Creek and a feeder creek, respectively; construction of associated approach roadways; replacement of the existing bridges; and installation of a new utility corridor. Construction for the bridge expansion required the excavation of PCB-containing soil. Excavated soil and sediments with PCB concentrations less than 50 mg/kg were placed in the new road embankment area followed by installation of a fabric marker layer and a minimum of 1 foot of clean fill material. A vegetated soil cap (12 inches thick with a geosynthetic marker layer) was also constructed on both sides of the highway within the ALDOT right-of way.

The State Highway 21 Bridge Cover is to be inspected as described in Section 3.3, Section 3.5, and Section 3.6 of the O&M Plan.

Locations of the State Highway 21 Bridge Cover inspection items are shown on Figure 8.5-1. The inspection items are to be documented on Inspection Log No. 8.5-1.

Documentation of the remedial measures and O&M requirements for the State Highway 21 Bridge Project is included in the report titled "Phase I Completion Report for Corrective Measures Implementation for the Highway 21 Bridge at Choccolocco Creek." In accordance with the RCRA Part B Permit, Annual Effectiveness Reports will be submitted that document the effectiveness of the remedial measures and will include a summary of inspections and maintenance activities performed during the year. Prior to each submission, Solutia will contact ALDOT to determine if any road maintenance, utility crossings, or other construction activities are planned that may have the potential to disturb or degrade the cover or the isolated PCB-containing soil beneath the cover.

Encapsulated PCB-Containing Soil with Marker Layer



LEGEND

- RIP RAP
- EDGE OF PAVEMENT
- 1' SOIL AND VEGETATIVE COVER
- RIGHT OF WAY (STATE)
- GAS GAS GAS — EXISTING GAS LINE

REFERENCES

1.) TAYLOR LAND SURVEYING INC., LIMITS OF SOIL COVER AT HIGHWAY 21 BRIDGE AT CHOCCOLOCCO CREEK, FEBRUARY 9, 2007

100 0 100
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
△	-	-	-		-	

PROJECT

OPERATIONS & MAINTENANCE PLAN

TITLE

HIGHWAY 21 BRIDGE

Golder Associates
Atlanta, Georgia

PROJECT No.		0433746	FILE No.		-
DESIGN	SJM	04/2007	SCALE	AS SHOWN	REV. -
CADD	JES	04/2007			
CHECK					
REVIEW					

FIG 8.5-1

Drawing file: hwy21_11x17.dwg Jul 12, 2007 - 4:00pm

Operation and Maintenance Inspection Log 8.5-1

STATE ROUTE 21 BRIDGE COVER
(Annual Inspection)

INSPECTOR: _____ _____

Print Name *Signature*

Date of Inspection: _____

Item & Item No.		Checklist					
Cover System	C1	Are there bare spots in vegetation?	Yes		No		(If Yes, describe below)
	C2	Is there soil cracking evident?	Yes		No		"
	C3	Is there erosion evident?	Yes		No		"
	C4	Is there settlement or subsidence evident?	Yes		No		"
Ditches and Drainage Channels	D1	Is there any debris or obstruction?	Yes		No		(If Yes, describe below)
	D2	Is there sediment buildup?	Yes		No		"
Mowing and Fertilization	V1	Are there overgrown areas?	Yes		No		(If Yes, describe below)
	V2	Does grass appear unhealthy?	Yes		No		"

MAINTENANCE / REPAIR REQUIREMENTS

-- Describe any items requiring work. Mark the location of the item on a figure if necessary. Add other sheets if necessary.

Item No.	Maintenance or Repair Required	Marked on Figure (Yes or No)	Date of Request for Work	Date Maintenance / Repair Work Completed*

*Attach completed Maintenance / Repair Log

Form Revision Log

Rev #	Date	No.	Item
3.1	2013		Added Revision Log