

Appendix J
Construction Quality Control Plan

Draft

**Construction Quality Control Plan
River Mile 10.9 Removal Action at
Lower Passaic River Study Area
New Jersey
Revision 00**

Prepared for
Cooperating Parties Group, Newark, New Jersey

November 2012

CH2MHILL®

One South Main Street
Suite 1100
Dayton, OH 45402

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Prepared for
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Prepared by

CH2MHILL®

One South Main Street
Suite 1100
Dayton, OH 45402

Prepared/Approved By:

Project Manager

Date

Approved By:

Design Manager

Date

Client Acceptance:

Date

Contents

Section	Page
Acronyms and Abbreviations.....	v
1 Introduction.....	1-1
1.1 Project Background.....	1-1
1.2 Scope of Work.....	1-1
1.3 Project Objectives.....	1-2
1.4 Pre-Mobilization and Mobilization Construction Activities.....	1-2
1.5 Document Objectives and Organization.....	1-3
2 Organization and Responsibilities	2-1
2.1 Cooperating Parties Group	2-1
2.2 CH2M HILL Personnel	2-1
2.2.1 Project Delivery Lead	2-1
2.2.2 Project Manager	2-1
2.2.3 Quality Assurance Manager.....	2-2
2.2.4 Construction Quality Manager	2-3
2.2.5 Construction Manager.....	2-3
2.2.6 Health and Safety Manager	2-4
2.2.7 Design Quality Manager	2-4
2.2.8 Senior Technical Consultant	2-4
2.3 Outside Organizations and Subcontractors.....	2-5
3 Construction Quality Control.....	3-1
3.1 Procedures for Performing the Three Phases of Control	3-1
3.1.1 Preparatory Phase	3-1
3.1.2 Initial Phase.....	3-2
3.1.3 Follow-up Phase	3-3
3.2 Completion Inspection.....	3-3
3.2.1 Punch List Inspection	3-3
3.2.2 Pre-Final Inspection	3-3
3.2.3 Final Acceptance Inspection	3-3
4 Project Meetings.....	4-1
4.1 Preconstruction Meeting.....	4-1
4.2 Coordination and Mutual Understanding Meeting.....	4-1
4.3 Quality Control Meeting	4-1
5 Quality Control Documentation	5-1
5.1 Contractor Production Report	5-1
5.2 Contractor Quality Control Reports.....	5-1
5.3 Project Files.....	5-2
5.4 Field Documentation of Operating Procedures.....	5-3
5.5 Field Logbook.....	5-3
5.6 Reporting and Field Documentation	5-3
6 Construction Quality Control Submittals	6-1
7 Changes and Nonconformances	7-1
7.1 Changes.....	7-1
7.2 Nonconformances/Deficiencies	7-1

Section	Page
8 Noncompliance and Corrective Actions	8-1
9 References	9-1

Attachments

- A CPR Form
- B CQCR and Preparatory Phase Report Form
- C Submittal Register
- D Field Change Notice Form
- E Non-Conformance/Deficiency Log

Table

- 5-1 Reporting and Field Documentation Required

Figures

- 1-1 Site Location Map
- 2-1 Organization Chart

Acronyms and Abbreviations

AHA	activity hazard analysis
CEP	Construction Execution Plan
CM	construction manager
COPC	chemical of potential concern
CPG	Cooperating Parties Group
CQCP	Construction Quality Control Plan
CQCR	Contractor Quality Control Report
CQM	construction quality manager
CRP	contractor production report
DFOW	definable feature of work
dmi	de maximus Inc.
DQM	design quality manager
ESBG	Environmental Services Business Group
H&S	health and safety
HSM	health and safety manager
LTR	lead technical reviewer
NCR	nonconformance report
ORR	Operational Readiness Review
PDL	project delivery lead
PM	project manager
QA	quality assurance
QAM	quality assurance manager
QC	quality control
QMP	quality management plan
RM 10.9 AOC	Settlement Agreement and Administrative Order on Consent for Removal Action, Docket No. 02-2012-2015
RM	River Mile
STC	senior technical consultant
USEPA	United States Environmental Protection Agency
yd ³	cubic yards

Introduction

CH2M HILL has prepared this Construction Quality Control Plan (CQCP) for conducting remedial activities at River Mile (RM) 10.9 of the Lower Passaic River, New Jersey. Pursuant to the Settlement Agreement and Administrative Order on Consent for Removal Action, Docket No. 02-2012-2015 (United States Environmental Protection Agency [USEPA], 2012), by the Cooperating Parties Group (CPG) (hereinafter referred to as the RM 10.9 AOC), contaminated sediment from RM 10.9 will be removed. The AOC became effective on June 18, 2012. The sediment removal will be conducted under the Comprehensive Environmental Response, Compensation, and Liability Act and the National Oil and Hazardous Substances Pollution Contingency Plan as a Time-Critical Removal Action.

This initial submittal of the CQCP provides the basic quality assurance (QA) and quality control (QC) procedures and practices to be implemented during the various phases of work. The CQCP is a living document and will be revised and amended as necessary throughout the project. For example, a basic list of definable features of work (DFOWs) has been included. This list will become more detailed as the work progresses. All modifications to the CQCP will be approved by the CPG before implementation.

1.1 Project Background

The RM 10.9 Study Area extends, bank to bank, between RM 10 and RM 12 of the Lower Passaic River Study Area (Figure 1-1). The RM 10.9 Sediment Deposit Area, an area largely within the RM 10.9 study area, extends 2,380 feet from RM 10.65 to RM 11.1. The RM 10.9 Removal Area is an approximately 5.6-acre area on the eastern side of the Lower Passaic River Study Area within the RM 10.9 Sediment Deposit Area.

The RM 10.9 Removal Area is situated along an inside bend of the Lower Passaic River upstream of the DeJessa Park Avenue Bridge and includes the mudflat and point bar in the eastern half of the river channel. It is bounded to the west by the navigation channel of the Passaic River and to the east by the Riverside Park complex, which is owned and operated by Bergen County and the Town of Lyndhurst.

The extent of potentially exposed surface sediment shown on Figure 1-1 was generated from the -2-foot elevation contour (North Geodetic Vertical Datum of 1929), which represents the mean low water for this part of the Lower Passaic River. The data source was the July 2011 bathymetry survey conducted as part of the RM 10.9 Characterization Program (CH2M HILL and AECOM 2012). The line represents the extent to which the river bottom/sediment is exposed during low tide at mean low water. The Action Memorandum/Enforcement requires removing the highest near-surface and shallow subsurface concentrations of the entire deposit, and that the RM 10.9 Removal Area includes that area that is exposed at low tide. The eastern boundary of the Removal Area is approximately defined by the mean high water mark.

Because of elevated concentrations of polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, mercury, and other chemicals of potential concern (COPCs) and the potential for receptors from the neighboring park to be exposed to them, the CPG is required to perform all actions necessary to remove, treat, and/or properly dispose of approximately 18,000 cubic yards (yd³) of sediment from the designated portion (that is, the Removal Area) of the RM 10.9 Sediment Deposit Area.

1.2 Scope of Work

The project involves the following elements:

- Mechanically dredge the contaminated surface (to a depth of 2 feet) sediment from the RM 10.9 Removal Area
- Transport the dredged materials to a designated off-loading facility
- Treat contaminated sediment by stabilization at a waterside facility

- Treat the process wastewater and barge supernatant at an offsite facility before discharge
- Cap the newly exposed sediment surface
- Transport the treated sediment to an offsite disposal facility

This document is designed to evolve, with sections being added or updated, as the project design develops.

1.3 Project Objectives

The objectives of the removal action for RM 10.9 include the following:

- Reduce the potential for exposure to receptors from sediment present in the RM 10.9 Removal Area
- Prevent potentially significant migration of contamination from the RM 10.9 Removal Area
- Evaluate the means and methods for sediment removal that can be applied to a larger area of the Lower Passaic River
- Determine potential impacts of dredging contaminated sediment on surface waters and the means, if feasible, to minimize these impacts
- Evaluate effectiveness of sediment capping methods on reducing bioavailability and migration of COPCs, including amending caps with activated carbon to mitigate the potential for contaminants to migrate through the sand caps
- Begin implementation of the RM 10.9 removal action in May 2013

1.4 Pre-Mobilization and Mobilization Construction Activities

The following procedures shall be used to facilitate pre-mobilization and mobilization activities:

- Operational Readiness Review (ORR) is a meeting among key project personnel and functional support to confirm all necessary planning and actions have been addressed to enable the successful execution of the project under consideration. Protocols for ORR are presented in the document ES-P02-0502-P Operational Readiness Review.
- Team chartering is a critical element of project planning. Through chartering meetings, project teams will have a greater opportunity to align project implementation with client expectations, CH2M HILL expectations, and individual goals. A successful charter or lack thereof can directly affect the success or failure of a project. Attraction and retention of key team members also is increased through providing clear definition of the project vision and goals. Protocols for team chartering are presented in the document ES-P02-0301-P Charter the team.
- Effective delivery of a project is dependent upon a strong, well-managed project team. A successful project team is lead by the project manager, and a successful project requires appropriately competent team members; clear chartering of roles, responsibilities, and expectations; a detailed project execution plan; a comprehensive understanding of the objectives of the project; and client, technical, and financial management throughout the lifecycle of the project. Management of project team is elaborated in the document ES P03-0101-P Manage the Project Team. This document describes how a project team should be organized and managed throughout the lifecycle of a project. The expected outcome is developing project teams that deliver the contracted scope of services, exceed the client's expectations, exceed budgeted margin targets, and employ management techniques that will maintain team efficiency throughout the project.
- The Construction Execution Plan (CEP) provides a comprehensive roadmap to guide the project team to successful construction execution through all associated elements of the project in executing the client work plan. The CEP is a collection of required project documents that communicates essential information goals, requirements, strategies, actions, and control processes about a project to all project team members. Details about the CEP is provided in the document ES-P06-0101-P Construction Execution Plan.

- Establishing site infrastructure and logistics includes all temporary facilities and services required to support field operations. Items that are addressed include office space; furnishings; utilities; security; fencing/gates; communications (voice and data); warehousing; laydown areas; parking; emergency treatment facilities; setup and management of camp facilities; site roads and access; lunch room and washing/restroom facilities; changing facilities; trash/debris removal; receiving and inspection facilities; etc. The expected outcome is a safe, secure, clean, and well-organized construction site that supports the overall needs of the project. It also is expected that establishing site infrastructure will be accomplished in a timely manner to support the schedule requirements of the project, for both the initial site mobilization and ongoing construction activities. Protocols are available in the document CH P06-0401-P Establish Site Infrastructure and Logistics.

1.5 Document Objectives and Organization

This CQCP describes the organization, procedures, and documentation to be used by CH2M HILL in successfully completing removal action efforts for the RM 10.9. The following principles will be observed in an effort to attain the highest quality of workmanship:

- Ensure timely and error-free execution of work through preliminary planning meetings before starting work
- Ensure compliance with project plans and specifications by reviewing relevant documentation
- Ensure high quality workmanship through adequate supervision and QC inspection and testing during work execution
- Ensure timely resolution of nonconformances and discrepancies through prompt notification of interested parties.

The CQCP is arranged into the following sections:

- Section 1, Introduction: Introduces the site, identifies the scope of work and project objectives, and describes the organization of the CQCP
- Section 2, Organization and Responsibilities: Describes the roles and responsibilities of the project team
- Section 3, Construction Quality Control: Describes the three phases of control and the procedures for completion inspection
- Section 4, Project Meetings: Describes the primary types of meetings that will be held during the project
- Section 5, QC Documentation: Discusses the manner in which QC activities will be documented
- Section 6, Construction QC Submittals: Lists the submittals for this project
- Section 7, Changes and Nonconformances: Discusses protocol for notifying project participants of changes and nonconformances and for documenting these occurrences
- Section 8, Noncompliance and Corrective Actions: Describes actions to be taken during noncompliance
- Section 9, References: Lists references cited throughout the text

Organization and Responsibilities

This section discusses the key roles and responsibilities of the project team. The project organization chart (Figure 2-1) depicts the chain of command for this task and the individuals responsible for executing the work as indicated.

2.1 Cooperating Parties Group

Pursuant to the Settlement Agreement and Administrative Order on Consent for Removal Action, the CPG will remove contaminated sediment from RM 10.9. The CPG has contracted with CH2M HILL to perform the design and implementation of the RM 10.9 Removal Action. As designated “Technical Coordinator” for the CPG, de maximis Inc. (dmi) interacts routinely with CH2M HILL’s project manager (PM) and construction quality manager (CQM) to ensure the overall quality of the project and the quality of work performed during the removal action.

2.2 CH2M HILL Personnel

The CH2M HILL Lower Passaic River project organization is presented on Figure 2-1. CH2M HILL reinforces that all project personnel are responsible for the quality of work on the project. Roles and responsibilities discussed below are limited to personnel that directly control and/or perform QC activities. The roles and responsibilities of other project personnel are discussed in various other project documents including the *Quality Management Plan for the Lower Passaic River RM 10.9 Time Critical Removal Action* (CH2M HILL, 2012a) and others.

2.2.1 Project Delivery Lead

The project delivery lead (PDL) is assigned by the Environmental Services Business Group (ESBG) and endorsed by the PM to provide overall project delivery oversight and serve as a resource for the PM and project team for risk, quality, and financial management of the project. The PDL’s quality management responsibilities include the following:

- Reviewing and approving plans for project delivery concerns including cost proposals and budgets
- Verifying that appropriate budgets have been allocated for the quality efforts required
- Monitoring the implementation of the quality program throughout the life of a project
- Periodically reviewing and auditing the financial status and performance of the project

2.2.2 Project Manager

The PM is the principal point of contact for the CPG, dmi, and involved federal and state regulators. The PM directs the creation and/or implementation of program policies and procedures to satisfy company policies and client contract specifications, including preparing work and quality plans. The PM’s duties pertaining to quality management include the following:

- Reviewing budget, schedule, and performance reports
- Reviewing corrective actions and lessons learned to assess the effectiveness of resolutions
- Allocating resources for quality management

The PM provides leadership and direction to the project staff, and is responsible for executing all phases of the project by efficiently applying the full resources of the project team. The PM is responsible for the technical, financial, administrative, and client-related aspects of the project and the project team. The PM’s objective is to produce a quality work product within the authorized schedule and budget. To accomplish this goal, the PM performs the following tasks:

- Establishes the objectives, expectations, and scope of work to be performed.
- Serves as liaison for communications with the client and subcontractors.

- Coordinates and communicates with CPG and dmi as well as the CH2M HILL management team, which includes the PDL and quality assurance manager (QAM), and contract financial and administrative manager, as necessary to keep them informed of the work progress.
- Arranges for staff and other necessary resources, with support/endorsement of program resources, to execute the task order.
- Organizes, directs, and manages personnel and resources, and establishes clear lines of communication within the CH2M HILL organization.
- Supervises preparation and approval of project-specific procedures, work plans, and QA project plans.
- Reviews all deliverables for conformance with client requirements, scope of work, and the quality management plan (QMP). The PM is ultimately responsible for timely, well-planned reviews and for incorporating review comments.
- Approves and signs outgoing correspondence.
- Identifies, documents, and notifies the client and project team of changes in the scope of work, project documentation, and activities.
- The PM, in consultation with the QAM and senior technical consultant (STC), assigns a lead technical reviewer (LTR), senior consultants, and project review QC team members and directs their ongoing involvement in the project.
- Review teams assess the project work and sampling plans for adequacy, ensuring client contract specifications, regulatory requirements, and technical procedures have been addressed. The review team is responsible for implementing the QC processes. The review team is led by an LTR responsible for coordinating the review effort.

The PM has the authority to:

- Approve subcontractor selection
- Approve task baseline schedule
- Stop work at the site for any reason
- Approve invoices to the client
- Approve payment to subcontractors
- Respond to Change Notices

2.2.3 Quality Assurance Manager

The QAM is assigned by the PM and endorsed by the ESG to provide quality management support to the project. The QAM coordinates with the PM for day-to-day operation to identify and communicate quality issues related to the planning, assessment, and assists in improving the quality management system. The QAM reviews and approves the following documentation:

- Project QMPs
- Project-level quality work instructions and procedures

The QAM will be responsible for implementing this CQCP, including:

- Evaluates project quality requirements
- Coordinates the project submittal processes for both design and construction documentation
- Supports the PM and STC in project team selection to support implementation of the project to meet the quality requirements
- Trains staff on quality processes and procedures and supports the development and distribution of quality lessons learned that may arise during implementation of a project

- Identifies, notifies, and resolves nonconformances and discrepancies
- Has the authority, as does each team member, to stop work until corrections are made if there is evidence that work performance will not meet contract specifications, company policy, regulatory requirements, project quality requirements, or if it may result in a hazard to the health or safety of personnel

2.2.4 Construction Quality Manager

The CQM, in consultation with the PM, is responsible for the following elements of work related to the construction project:

- Executes the project's construction QC system and communicates the onsite QA program policies, objectives, and procedures to the project team and subcontractors during project meetings and informal discussions
- With the PM, assigns a construction manager (CM) and construction staff and directs their ongoing involvement in the project
- Ensures sufficient resources are allocated to maintain project schedule and budget and will provide daily feedback to the PM on project progress, issues requiring resolution, and other project-specific issues, as required
- Leads development of construction approach to meet client needs
- Participates in work plan development regarding appropriate risk management, delivery strategies, and staffing and subcontracting strategies
- Ensures construction is conducted in accordance with the work plan and approved design, following appropriate construction methodology, and maintaining quality, and safety of the project and the project team during the fieldwork
- Reviews daily field activities to assess overall project quality and identify any potential QC issues
- Coordinates flow of feedback from construction staff to design staff for continuous improvement and change management
- Conducts inspections to ensure compliance and initiates corrective actions for nonconformance identified onsite
- Notifies the PM if the project cannot be completed with regard to quality, schedule, or cost
- Has authority to stop work for noncompliant operations
- Serves as liaison for communications with the project staff and subcontractors, as well as with the onsite client representatives
- Works with the PM to review subcontract bid form measurement and payment schedules
- Evaluates subcontractor selection
- Interfaces daily with the subcontractors
- Monitors and reports on subcontractor quality and quantities
- Leads weekly status meetings
- Aids in preparing construction submittals

2.2.5 Construction Manager

The CM has the following responsibilities:

- Evaluates current site conditions and construction methods used on the project
- Identifies the appropriateness of the construction activities selected for the project

- Supervises the field construction staff on the project
- Complete daily quality reports
- Reviews and guides preparation of project technical work plans and project completion reports

2.2.6 Health and Safety Manager

The health and safety manager (HSM) is responsible for developing, implementing, and maintaining the health and safety (H&S) program on this project. The responsibilities include:

- Provides general oversight of activities performed at the site from H&S perspectives
- Sets weekly safety objectives
- Enforces site-specific Accident Prevention Plan
- Serves as liaison for H&S communications with the project staff and subcontractors as well as program H&S team
- Provides guidance on any H&S issues raised by the team to ensure the safety of project personnel
- Conducts periodic reviews and inspections of the H&S procedures being implemented at the site
- Aids in preparing H&S documentation
- Implements continuous improvement of the H&S program
- Has authority to stop work for unsafe practices or conditions
- Initiates corrective actions for nonconformance identified onsite
- Approves resumption of work for resolved safety issues

2.2.7 Design Quality Manager

The design quality manager (DQM), in consultation with the PM, is responsible for the following elements of work:

- Approves project design bases, design parameters, drawings, and reports
- Approves project construction methodologies
- Disseminates project-related information from the client such as design bases, input parameters, and drawings

2.2.8 Senior Technical Consultant

The STC is assigned by the PM and endorsed by the ESBG and provides leadership on applying the best technologies from all business groups to support the program and project success. The STC should have frequent communication with the PM, beginning with project planning, to monitor project progress and offer consultation. The STC provides leadership to provide cost-effective solutions to the clients by:

- Leading process problem definition
- Developing alternative approaches, applying best practices, and devising innovative solutions
- Monitoring the scope, quality, and completeness of project reviews, by both ongoing senior consultation and review of project deliverables

The STC is fully engaged in the project, particularly in the decision-making and planning stages. The STC also has the following responsibilities:

- Assists and assigns subject matter experts and technology leads to individual tasks
- Ensures the subject matter experts understand the roles and responsibilities of a reviewer relating to quality components such as formulas, technical accuracy, and leveraging into and outside of the project

- Designating and approving LTR requirements and assignments for a project

While reviews are scheduled and coordinated by the PM, the STC monitors the quality and delivery of the reviews and works with the PM to resolve differences.

2.3 Outside Organizations and Subcontractors

CH2M HILL assumes overall responsibility for ensuring conformance of subcontracted services and products (includes capping materials) to quality requirements. However, it is the responsibility of subcontractors to plan, manage, and accomplish their activities in accordance with the plans, specifications, and local, state, and federal regulations. Subcontractors will work in accordance with their own internal QC procedures but will be required to perform under the umbrella of this CQCP. CH2M HILL will manage subcontractor activities to ensure conformance to the requirements of this CQCP.

Subcontractors include those organizations supplying services and products to the project. A number of subcontractors are anticipated for both design and implementation aspects of the project. Each subcontractor will undergo a prequalification process to ensure selection of only the highest quality organizations. Subcontractors report directly to the CM and are responsible for completing the project-specific activities assigned to them. Subcontractors will verify construction activities and materials comply with the requirements of the contract plans and specifications.

Services/materials anticipated to be subcontracted include:

- General construction subcontractor(s)
- Specialty vendor
- Various rental equipment vendors
- Chemical laboratory

SECTION 3

Construction Quality Control

The construction QCs applicable to the work activities described in the *RM 10.9 Removal Action Basis of Design Report* (CH2M HILL, 2012b) are outlined in the following subsections. The PM, QAM, CQM, CM, and HSM will verify conformance with the field requirements. The CQM will perform daily inspections of the activities to ensure safe, efficient, high-quality work is being performed while meeting the objectives and requirements of the plans and specifications.

The tasks for this project are grouped into DFOWs, which are work activities that are significant enough to warrant separate inspections. The DFOWs for this project are:

- Mobilization and site preparation (clearing, grubbing, erosion and sediment control , decontamination pad, waste staging area)
- Dredging of contaminated sediment
- Stabilization of dredged sediment
- Capping
- Transportation and offsite disposal of treated and/or dredged sediment
- Site restoration
- Demobilization

DFOWs are the elements by which the three-phase inspection/control system will be implemented. Given the nature of this project, definable features may change as the design progresses.

3.1 Procedures for Performing the Three Phases of Control

The DFOWs will be inspected in accordance with the three phases of control—preparatory, initial, and follow-up. An overview of these inspection provisions is outlined in the following subsections.

3.1.1 Preparatory Phase

The preparatory phase culminates with the planning and design process leading up to actual remediation of a specific site. Successful completion of the preparatory phase verifies the delivery of the project plans have been completed and are ready to be implemented. A preparatory phase meeting will be held in advance of work on each DFOW. For each DFOW established in the CQCP, the following must be performed during the preparatory phase by the project team responsible for the DFOW:

- Review applicable plans, specifications, work plans, and other contract documents
- Confirm the appropriate technical specifications are incorporated into the project work plans
- Confirm the appropriate contract drawings are incorporated into the project work plans
- Verify all applicable plans, specifications, work plans, and other contract documents have been approved by the CPG
- Confirm definition of preliminary work required at the work site and examine the work area to confirm required preliminary work has been properly completed and is in compliance with the applicable plans, specifications, work plans, and other contract documents
- Confirm availability of required materials and equipment
- Examine materials and equipment to confirm compliance with approved submittals and procedures

- Review the site H&S plan and activity hazard analysis (AHA) to ensure safety concerns are adequately addressed and applicable safety requirements have been incorporated into the plan
- Confirm the appropriate material safety data sheets have been identified and properly submitted
- Discuss construction methods to be employed during the construction phase
- Identify checkpoints and areas of evaluation that will allow determination as to whether the appropriate quality of construction is being achieved
- Review construction tolerances and workmanship standards for that feature of work
- Discuss procedures for controlling quality of the work, including repetitive deficiencies
- Confirm permit and other regulatory requirements are met

A Preparatory Phase Inspection Checklist for this phase of control will be prepared before the preparatory phase meeting. Results of the activities will be discussed during the preparatory phase meeting and documented in the Preparatory Phase Report, which will be attached to the daily Contractor Quality Control Reports (CQCRs).

3.1.2 Initial Phase

The initial phase begins at the startup of remedial activities, or construction, associated with a specific DFOW. The initial phase confirms the CQCP is being effectively implemented in accordance with contract and specification requirements and the desired results are being achieved. The initial phase shall be repeated when acceptable levels of specified quality are not being met or when specific deficiencies have been identified. As in the preparatory phase, proper notification to CPG and dmi is required when crews are ready to start work on a DFOW.

The following shall be performed for each DFOW during the initial phase:

- Establish the quality of workmanship required to properly deliver work in accordance with contract requirements. The CQM ensures the CM has made the work crews aware of expectations associated with the construction methods established under the preparatory phase.
- Check work for compliance with applicable plans, specifications, work plans, and other contract documents. This is achieved via observation of the initial work activities as well as interaction with the CM and responsible construction crew or subcontractor.
- Establish protocol for the follow-up inspection phase.
- Resolve conflicts. The CQM will guide the CM and responsible supervisor in resolving conflicts. Should conflicts arise in establishing the baseline quality for the DFOW, the responsibility to resolve the conflict falls to the CQM. Should the conflict not be resolved in a manner that satisfies the contract requirements, the CQM must elevate the conflict to the PM and QAM and issue a nonconformance report (NCR). The CQM may direct a cessation of work activity, with the concurrence of the PM and QAM, should the issue jeopardize the results of the DFOW, or put the project at risk of noncompliant performance.
- The HSM will evaluate the site H&S plan and AHAs against actual work conditions with the CM and responsible supervisor to ensure the hazard analysis conducted to prepare the safety plan adequately addressed field conditions. The HSM will confirm applicable safety requirements are being implemented during construction activities.
- The CQM will observe and evaluate the performance of sampling and testing technicians. The CQM will confirm with the CM and/or responsible subcontractor that testing is being performed in accordance with the testing plan and that all required protocols are being observed. In addition, the CQM will review all reports and documentation associated with extraction, packaging, transporting, and testing of samples; note any discrepancies; and direct correction accordingly.

An Initial Phase Inspection Checklist for this phase of control will be prepared. An initial phase meeting and inspection will be held at the beginning of a DFOW. The checklist will be attached to the daily CQCR. Upon completion of the initial phase activities, results are to be documented. Should results be unsatisfactory, the initial phase will be rescheduled.

3.1.3 Follow-up Phase

Completion of the initial phase of QC activity leads directly into the follow-up phase, which addresses the routine day-to-day activities on the construction site. Inspection activities associated with each DFOW are to be documented within the CQCR. Specific concerns associated with the follow-up phase include:

- Inspection of the work activity to ensure work is in compliance with the contracted scope of work
- Evaluation and confirmation that the quality of workmanship is being maintained at a level no less than that established during the initial phase
- Evaluation and confirmation that required testing is being performed in accordance with procedures established during the preparatory phase and confirmed during the initial phase
- Confirmation that nonconforming work is being corrected promptly and in accordance with the direction provided by the CQM

The follow-up phase inspections should be performed daily, or as needed until the completion of each DFOW. The frequency of the inspections will be decided at the beginning of the DFOW.

3.2 Completion Inspection

3.2.1 Punch List Inspection

Near completion of all work or any increment thereof, the CQM and QAM will conduct an inspection of the work and develop a “punch list” of items that do not conform to the approved figures and specifications. This “punch list” will be attached to the daily CQCR on the day of completing the list, and will include the estimated date by which the deficiencies will be corrected. The CQM will make a second inspection to ascertain all deficiencies have been corrected. Upon completion, the CPG and dmi will be notified that the work is complete and ready for the client’s “pre-final” inspection.

3.2.2 Pre-Final Inspection

The CQM and PM will accompany the CPG and dmi representatives on the pre-final inspection. Any items noted by the client will be corrected in a timely manner, and the client will be notified of the corrections and readiness for the final acceptance inspection.

3.2.3 Final Acceptance Inspection

CPG and dmi will be notified in advance of the scheduled final acceptance inspection, and the notice must include CH2M HILL’s assurance to the client that all work is complete as per applicable plans, specifications, work plans, and other contract documents and accepted. The PM, QAM, CQM, and the client’s representative, at a minimum, will attend this inspection.

Project Meetings

4.1 Preconstruction Meeting

The PM will schedule and administer a preconstruction meeting at the site after Notice to Proceed and before the start of construction at the site. During the conference, ground rules and understandings will be established between CPG, dmi, USEPA representatives, New Jersey regulators, CH2M HILL, and major subcontractors. At a minimum, the dmi, USEPA's onsite contractor (CDM), CH2M HILL project team and major subcontractors will attend this meeting. This meeting will help ensure all parties involved in the project understand and agree on the project goals and objectives, schedule, submittal requirements, documentation requirements, change management processes and procedures, construction means and methods, reporting and communication requirements, H&S requirements, and other protocols.

The meeting agenda will include, but not necessarily be limited to, the following:

- H&S issues
- Progress schedules
- Owner's requirements, such as interaction with the community
- Designation of responsible personnel
- Lines of authority and communication
- Field offices
- Temporary facilities and controls provided by CH2M HILL
- Security and housekeeping procedures
- Use of the site for storage, vehicle parking, access routes, and other site requirements
- Coordination with other contractors and the client
- Procedures for maintaining record documents
- Procedures for processing field decisions, submittals, substitutions, applications for payments, proposal requests, field orders, work change directives, change orders, and closeout procedures

Minutes of the meeting will be prepared by CH2M HILL and distributed to the participants and those affected by decisions made.

4.2 Coordination and Mutual Understanding Meeting

Before any onsite activities begin, the PM, QAM, and CQM shall meet with CPG and dmi representatives to review the CQCP and the QC program required by the contract. This meeting is to confirm CH2M HILL and CPG clearly understand and agree on:

- Specific QC points of concern about the features of work
- Duties and responsibilities of all onsite CH2M HILL personnel
- Forms to be used on the project and the correct protocol for use of each form
- Administration of both onsite and offsite work

The meeting shall be attended by the PM, QAM, CM, and HSM. The meeting also can be combined with the preconstruction conference. Minutes of the meeting shall be prepared by CH2M HILL and signed by dmi and CH2M HILL's representatives.

4.3 Quality Control Meeting

After starting site work, the CQM shall conduct QC meetings at a frequency established as necessary by the pace of the work, or as required by the client. Typically, meetings are expected to occur at least weekly or more frequently, depending on the project needs. Conducting the meetings and preparing the meeting minutes are

responsibilities of the CQM and CM. Annotation of conducting the meeting will be made in the daily CQCR. The CM, HSM, and the supervisor responsible for the upcoming work shall attend the meeting. Representatives of the client will be invited to all meetings. To optimize time, these meetings should be held in conjunction with other meetings (for example, progress meetings, and weekly safety meetings) where possible. CH2M HILL has the responsibility for setting the agenda for the meeting. As a minimum, the following shall be accomplished at each meeting:

- Review previous meeting minutes
- Identify any safety concerns relative to any work activity
- Review the project schedule
 - Work accomplished since the last meeting
 - Review the work scheduled over the next 2-week window
 - Establish completion targets for any outstanding rework
- Rework items identified since the last meeting
 - Rework items completed since the last meeting
- Submittal status
 - Submittals reviewed since the last meeting
 - Submittals expected within the next 2-week window
- Identify and schedule any DFOWs requiring preparatory phase activities
- Identify and schedule any DFOWs requiring initial phase activities
- Identify and schedule any DFOWs requiring follow-up phase activities
- Identify any testing required in support of or confirming remedial activities
- Review status of any offsite activities
- Identify any special documentation requirements for either production or QC
- Address and resolve any production or QC problems
- Identify any production or QC procedures that may be less effective than anticipated and may require revising the project delivery or contingency plan and annotate any recommendations
- Identify any activities or items that may require revising the CQCP and annotate any recommendations

Quality Control Documentation

5.1 Contractor Production Report

The contractor production reports (CPRs) is the daily record of operations on the jobsite and must be kept current. These reports are the official record of work performance and compliance with project plans, drawings, and specifications. It is therefore critical that the reports are correct and timely. The CPRs will be attached to the CQCR prepared for the same day. Each calendar day throughout the life of the contract must be accounted for. The reporting of work will be identified by terminology consistent with the construction schedule.

CPRs are prepared, signed, and dated by the CM and will contain the following information:

- Date of report, report number, name of contractor, contract number, title, location of contract, and CM present
- Weather conditions in the morning and in the afternoon, including maximum and minimum temperatures
- A list of contractor and subcontractor personnel on the work site, their trades, employer, work location, description of work performed, and hours worked
- A list of job safety actions taken and safety inspections conducted. Indicate that safety requirements have been met, including the results of the following:
 - Was a job safety meeting held? (If YES, attach a copy of the meeting minutes.)
 - Were there any lost time accidents? (If YES, attach a copy of the completed Occupational Safety and Health Administration report.)
 - Was trenching, scaffolding, high-voltage electrical, or high work done? (If YES, attach a statement or checklist showing inspection performed.)
 - Was hazardous material or waste released into the environment? (If YES, attach description of incident and proposed action.)
- A list of equipment and material received each day that is incorporated into the job
- A list of construction equipment on the work site showing the number of hours used, idle, and down for repair
- “Remarks” section containing pertinent information, such as directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specification, field changes, safety hazards encountered, instruction given and corrective actions taken, delays encountered, and a record of visitors to the work site

The CPR form provided in the Attachment A will be used on this project.

5.2 Contractor Quality Control Reports

The CQCR documents the quality activities on the project. CQCRs are required for each day that work is performed and for every 7 consecutive calendar days of no work, on the last day of that no-work period. Each calendar day throughout the life of the contract must be accounted for. The reporting of work will be identified by terminology consistent with the construction schedule. CQCRs are prepared, signed, and dated by the CQM and will contain the following information:

- Control phase and DFOW.

- Results of preparatory phase meeting(s), including location of the DFOW and a list of personnel present at the meeting(s). Verify in the report that for this DFOW, the drawings and specifications have been reviewed; submittals have been approved; materials comply with approved submittals; materials are stored properly; preliminary work was done correctly; the testing plan has been reviewed; and work methods and schedule have been discussed.
- Results of the initial phase meeting(s), including location of the DFOW and a list of personnel present at the meeting(s). Verify in the report that for this DFOW, the preliminary work was done correctly; samples have been prepared and approved; the workmanship is satisfactory; test results are acceptable; work is in compliance with the contract; and the required testing has been performed. Include a list of personnel who performed the tests.
- Results of the follow-up phase inspections held, including location of the DFOW. Verify in the report for this DFOW that the work complies with the contract as approved in the initial phase and that required testing has been performed. Include a list of personnel who performed the tests.
- Results of the three phases of control for offsite work, if applicable, including actions taken.
- List rework items identified, but not corrected by close of business.
- As rework items are corrected, provide a revised rework items list along with the corrective action taken. (Note: All rework will be non-fee bearing.)
- “Remarks” section containing pertinent information, such as directions received, QC problem areas, deviations from the CQCP, construction deficiencies encountered, QC meetings held, acknowledgment that as-built drawings have been updated, corrective direction given by the QAM, and corrective action taken.
- CQCR certification as accurate, correct, and complete.

The CQCR and preparatory phase report are the daily records of QCs performed on the jobsite and must be kept current. These reports are the official record of work performance and compliance with project plans, drawings, and specifications. It is therefore critical the reports are correct and timely. The CQCR and preparatory phase report forms to be used on this project are provided in the attachments.

5.3 Project Files

Documentation generated by the QC system must be maintained in an orderly fashion. It is suggested that the PM and CQM maintain a series of three-ring binders for ready reference. These should be arranged by category and tabbed to include the following items:

- CPR
- CQCR
- Photographs and photograph logs
- Health and safety reports
- Testing plan and log
- Rework items lists
- Noncompliance notices and corrective actions
- Monthly summary of field tests
- Submittal register
- Contract modifications arranged in numerical order
- Correspondence
- Waste disposal records

5.4 Field Documentation of Operating Procedures

The objective of the field documentation of operating procedures is to ensure appropriate project information is recorded in logbooks during construction. This documentation is important for communicating activities with other staff members and the CPG and dmi personnel.

5.5 Field Logbook

The CQM and CM will maintain a record of daily QC activities during construction in a field logbook. The field logbook will be available upon request for review by the client. Information recorded in the CPR and CQCR will be supplemented with information contained in the logbook, but the intent is not to repeat information. As an operating procedure for logbook entries, the following items will be recorded, at a minimum:

- Date, project name, and location
- Daily start time
- Summary of weather conditions
- General description of work activities, size of work crew, and the equipment and personnel onsite
- Duration of lunch break
- Start time and duration of downtime resulting from equipment breakdown or weather
- Summaries of QC meetings and actions recommended to be performed
- QC testing equipment and personnel
- Identification of work locations
- Description of materials delivered to the site, including QC data provided by the suppliers
- Record of decisions made regarding corrective measures implemented
- Field tests
- Sampling activities

The CM will sign or initial the bottom of each page of the field logbook and date the entry to show that notes are being taken daily. A line-through will be placed on any portion of a logbook page that is unused. No correction fluid may be used.

5.6 Reporting and Field Documentation

Table 5-1 presents a list of deliverables, the parties responsible for preparing them, their frequency, and content.

TABLE 5-1
Reporting and Field Documentation Required

Report or Documentation Requirement	Completed By	Delivered To	Frequency	Report Description
CPR	CM	PM, CQM, QAM, and client (CPG and dmi)	Daily, for each task – original and one copy due by 10 am next working day after each day that work is performed	Documents daily construction activity on each site
CQCR	CQM and CM	PM, QAM, and client	Daily, for the preceding business day - original and one copy due by 10 am next working day after each day work is performed	Documents the daily QC activity for the project, includes the CPRs
Testing Plan and Log	CQM	PM, QAM, and client	Monthly – due by end of each month	Defines and records results of all onsite testing, to be maintained at time of testing, or when laboratory results are received
Monthly Summary Report of Field Tests	CQM	PM, QAM, and client	Monthly, attached to the last CQCR submitted for each reporting period – original and one copy due at the end of each month	Summarizes all testing activity conducted for the reporting period with test results (pass/fail)
QC Meeting Minutes	QAM	PM, CQM, and client	As attachment to appropriate CQCR – due within 2 calendar days of the meeting	Minutes of any QC meeting held
Re-work Items List	CQM and CM	PM, QAM, and client	Monthly, attached to the last CQCR submitted for each reporting period – one copy by last working day of the month	Documents re-work items not corrected on same day as discovery; includes items identified by both CH2M HILL and client or designated representative
Submittal Register	CQM and CM	PM, QAM, and client	Maintained through life of project	Summarizes the deliverables
As-built Records	CQM	PM, QAM, and client	Maintained in field through life of project to certify complete and accurate records upon completion; included in Construction Completion Report	Requirements specified in CQCP; to be maintained at jobsite and inspected by QC personnel to ensure daily upkeep
Photographic Record	CQM and CM	PM, QAM, and client	Maintained in field through life of project	Photographic record showing construction progress, special situations
Transportation and Disposal Log	CQM	Waste Disposal Coordinator	Monthly and maintained in field through life of project	Tracks waste on the project from generation to final disposition

SECTION 6

Construction Quality Control Submittals

Construction QC submittals are generated by either the CQM or the subcontractor during or immediately before construction to demonstrate compliance with the project plans. Submittal requirements shall be tabulated in the submittal register according to the requirements identified in the project plans.

The QAM and PM will monitor submittal activities to verify:

- Submittal completeness
- Required submittal inclusion
- Submittal schedule status
- Current submittal status
- Resubmittals

The CQM will log and track submittals in the submittal register. Specific responsibilities regarding submittals are listed below:

- Coordinating submittal actions
- Maintaining necessary submittal records in an organized fashion
- Maintaining and tracking submittals in the submittal register
- Reviewing and certifying submittals for compliance with the project plans, drawings, and specifications
- Approving submittals, except those designated to be approved by the client and stakeholders
- Checking material and equipment delivered to the project for compliance with the project plans, drawings, and specifications

Certain designated submittals require approval by authorities other than the QAM (such as the PM, STC, DQM, or other qualified persons). In such cases, the QAM forwards the submittal to the PM, who routes the submittal to the appropriate approver. The CM and CQM are responsible for coordinating the submittal transmittal and approval process and for following through to ensure the process does not affect the project schedule.

CH2M HILL will control and schedule submittals and will document the process in the submittal register. The CQM is responsible for updating the submittal register at least once a week and forwarding a copy of the submittal register to the PM, QAM, and PDL at the end of each month of project work. Each submittal will be routed on a standard submittal form. Units of weights and measures used on the submittals will be consistent with those used in the project documents.

Each submittal will be reviewed for completeness and compliance with contract requirements by individuals qualified to perform the review of that specific item. The submittal reviewers and approvers will be designated before construction begins.

The CQM will certify the submittal complies with the project requirements. Submittals that do not comply with the requirements will be returned to the originator for correction and resubmittal. Substitutions or variations of specified requirements will be clearly noted. Certification of the approved submittals will be indicated by signing or initialing and dating the submittal form by the CQM. Submittals will include but are not limited to the following:

- Personnel qualifications
- Permits
- Samples
- Production, inspection, and test reports
- Material certifications
- Progress reports, safety reports, and manpower reports
- Redline drawing and as-built or certified data
- QC records and certifications

- Sample and test results
- QC reports
- Construction photographs and photo logs
- Contract closeout documents
- Completed hazardous waste manifests and disposal certificates

Changes and Nonconformances

7.1 Changes

Circumstances may arise during the remedial action that necessitate changes to the design and/or construction approach or scope of work. Routine changes also will occur that do not affect the approach or scope of work but are departures from the planned course of action. These changes may include such events as unanticipated site conditions, use of alternative construction methods, substitution of materials, and additional work requested by client within the broad framework/scope of original project requirements. It is the PM's responsibility to ensure the prompt and accurate documentation of these changes to minimize impacts of these changes on the project cost and schedule.

Verbal notification of any changes (or potential for changes) will be made immediately upon identification of the changed condition. Any project participant may identify a potential change by reporting to either the PM or the CQM. Following an assessment of the appropriateness of the change, notification will be made to CPG and dmi.

Following verbal notifications, changes will be documented on the Field Change Notice form. The individual who identifies the change will complete this form. The notice will be reviewed by the PM and then approved by the PDL, and a copy transmitted to CPG and dmi. Construction activities related to the changed condition will not commence until approval has been obtained from CPG. Efforts will be made to resolve minor changes in the field to minimize schedule impacts.

A Change Summary Log will be maintained onsite by the CQM and provided to CPG and dmi weekly. Either quarterly or at the request of either CH2M HILL or the client, a meeting will be held with the managers and staffs to discuss the appropriateness of each change. In preparation for the meeting (3 days in advance), the sponsor of the change will prepare a preliminary scope to describe the change, justify the reason for a fee-bearing change, and estimate the approximate magnitude (or range) of the cost impact. At such time as both CH2M HILL and CPG agree that a contract modification is necessary, the CPG will request, in writing, that a proposal be submitted for some or all of the items on the Change Summary Log. The modification then will be processed in accordance with the standard contract procedures.

If any changes occur that appear to be outside the broad framework of the project scope, CH2M HILL will advise CPG representative and seek direction as to how to proceed.

7.2 Nonconformances/Deficiencies

The overall goal of this CQCP is to ensure all work performed is of the highest quality and is in conformance to plans and specifications. It is possible, however, that during follow-up or completion inspections, work may be discovered that does not meet the plans and specifications. The CQM will follow the procedure below when such an event occurs:

- The potential nonconformance/deficiency will be verbally brought to the attention of project personnel immediately involved in the particular element of work. If it is agreed that a deficiency exists, the situation will be corrected (where possible) within 1 workday unless the deficiency jeopardizes worker or public health and safety or affects overall design integrity. If a threat to safety and health or design integrity does exist, a stop work order will be issued and work will cease until corrective action is taken. In either case, the deficiency and corrective action taken will be noted in the daily CQCR.
- If the deficiency cannot be corrected by the end of the following workday, an NCR will be issued by the CQM. The PM and QAM will be notified immediately so steps can be taken to resolve the issue as promptly as possible. CPG and dmi also will be notified of the situation at that time.

- If the above steps do not resolve the deficiency, the CH2M HILL PDL and the client will be notified of the situation to assist in achieving resolution.

Except in the case of an emergency, if a stop work order is to be issued, attempts will be made by the CQM to obtain concurrence of the PM and QAM before issuing the order. Work will not resume until the stop work order has been rescinded by the CQM.

NCRs will fully describe the deficiency and the conditions requiring corrective action. An approach and schedule for the corrective action also will be included. The NCR will be issued by the CQM, and a copy will be attached to the daily CQCR. Only the CQM will have authority to certify that a deficiency has been adequately corrected.

All nonconforming conditions will be tracked on the Nonconformance/Deficiency Log. Deficiencies will be summarized in tabular format showing the date of discovery, date of NCR issuance (where applicable), a brief description of the deficiency, the necessary corrective action, the date of the corrective action, and the date of acceptance of the corrected work. This summary will be updated daily and provided to CPG and dmi at the weekly QA/QC meeting.

SECTION 8

Noncompliance and Corrective Actions

The CQM will notify the CM and subcontractors of any detected noncompliance with the work plan, specifications, and contract documents. The CM or subcontractor will take immediate corrective action after receipt of such notice. Such notice, when delivered to the CM or subcontractor at the worksite, will be deemed sufficient notification. If the CM or subcontractor fails or refuses to comply promptly, the CQM may issue an order stopping all or part of the work until satisfactory corrective action has been taken. Noncompliance notification or stop work orders will be documented in the daily report. Completion of corrective action will be noted in the daily CQCR. Verification of the corrective action and its results will be performed by the QAM and documented in the CQCR.

Failing test results or noncompliance reports will be resolved through a corrective measure plan. The plan will be developed by the CQM in conjunction with the CM and PM. The agreed-upon corrective measure plan will be implemented, completed, and documented by the CQM.

SECTION 9

References

CH2M HILL. 2012a. *Quality Management Plan for the Lower Passaic River RM 10.9 Time Critical Removal Action*.

CH2M HILL. 2012b. *RM 10.9 Removal Action Basis of Design Report*.

CH2M HILL and AECOM, 2012. *River Mile 10.9 Characterization Program Summary, Lower Passaic River Study Area*.

U.S. Environmental Protection Agency (USEPA). 2012. Settlement Agreement and Administrative Order on Consent for Removal Action, Docket No. 02-2012-2015.

ES-P02-0502-P Operational Readiness Review at

<https://vo.int.ch2m.com/apps/bdpdprocess/layouts/DocIdRedir.aspx?ID=DOCID-26-11>

ES-P02-0301-P Charter the team at

<https://vo.int.ch2m.com/apps/bdpdprocess/layouts/DocIdRedir.aspx?ID=DOCID-26-6>

ES P03-0101-P Manage the Project Team -<https://vo.int.ch2m.com/apps/bdpdprocess/layouts/DocIdRedir.aspx?ID=DOCID-26-30>

ES-P06-0101-P Construction Execution Plan at

<https://vo.int.ch2m.com/apps/bdpdprocess/layouts/DocIdRedir.aspx?ID=DOCID-26-121>

CH P06-0401-P Establish Site Infrastructure and Logistics –at

<https://vo.int.ch2m.com/apps/bdpdprocess/layouts/DocIdRedir.aspx?ID=DOCID-18-423>

July 2011 bathymetry survey conducted as part of the RM 10.9 Characterization Program

Attachment A
CPR Form

CONTRACTOR PRODUCTION REPORT (ATTACH ADDITIONAL SHEETS IF NECESSARY)		DATE OF REPORT:			
		REVISION NO:			
		REVISION DATE:			
PROJECT NAME/LOCATION:		REPORT NO:			
PROJECT NO:	SUPERINTENDENT:	SITE H&S SPECIALIST:			
AM WEATHER:	PM WEATHER:	MAX TEMP:	MIN TEMP:		
SUMMARY OF WORK PERFORMED TODAY					
JOB SAFETY	Was A Job Safety Meeting Held This Date? <input type="checkbox"/> Yes <input type="checkbox"/> No	TOTAL WORK HOURS ON JOB SITE THIS DATE (Including Continuation Sheets)			
	Were there any lost-time accidents this date? (If Yes, attach copy of completed OSHA report) <input type="checkbox"/> Yes <input type="checkbox"/> No	CH2MHILL Onsite Hours			
	Was a Confined Space Entry Permit Administered This Date? (If Yes, attach copy of each permit) <input type="checkbox"/> Yes <input type="checkbox"/> No				
	Were Crane/Manlift/Trenching/Scaffold/HV Elec/High Work/Hazmat Work Done?? (If Yes, attach statement or checklist showing inspection performed) <input type="checkbox"/> Yes <input type="checkbox"/> No	Subcontractor Onsite Hours			
	Was Hazardous Material/Waste Released into the Environment? (If Yes, attach description of incident and proposed action) <input type="checkbox"/> Yes <input type="checkbox"/> No	Total Onsite Hours This Date			
		Cumulative Total of Work Hours From Previous Report			
		Total Work Hours From Start of Construction			
SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED (Include Safety Violations, Corrective Instructions Given, Corrective Actions Taken, and Results of Safety Inspections Conducted):					
EQUIPMENT/MATERIAL RECEIVED TODAY TO BE INCORPORATED IN JOB					
DESCRIPTION OF EQUIPMENT/MATERIAL RECEIVED	MAKE/ MODEL/ MANUFACTURER	EQUIPMENT/ LOT NUMBER	INSPECTION PERFORMED BY		
EQUIPMENT USED ON JOB SITE TODAY.					
EQUIPMENT DESCRIPTION	EQUIPMENT MAKE/MODEL	SAFETY CHECK PERFORMED BY	NUMBER OF HOURS		
			USED	IDLE	REPAIR
CHANGED CONDITIONS/DELAY/CONFLICTS ENCOUNTERED (List any conflicts with the delivery order [i.e., scope of work and/or drawings], delays to the project attributable to site and weather conditions, etc.):					
VISITORS TO THE SITE:					
LIST OF ATTACHMENTS (OSHA report, confined space entry permit, incident reports, etc.):					
SAFETY REQUIREMENTS HAVE BEEN MET <input type="checkbox"/>					
_____				_____	
SUPERINTENDENT'S SIGNATURE				DATE	

CONTRACTOR PRODUCTION REPORT (ATTACH ADDITIONAL SHEETS IF NECESSARY)			DATE OF REPORT: REVISION NO: REVISION DATE:
PROJECT NAME/LOCATION:			REPORT NO:
PROJECT NO:	SUPERINTENDENT:	SITE H&S SPECIALIST:	

WORK PERFORMED TODAY						
EMPLOYEE	WORK PERFORMED	EMPLOYER	FEMALE?	MINORITY?	TITLE/TRADE	HRS

Attachment B
CQCR and Preparatory Phase Report Form

Attachment B: Preparatory Phase Inspection Checklist

Date:

Definable Feature:

1. Personnel Present

Name	Title	Organization
------	-------	--------------

--	--	--

2. Review each paragraph of the specification and each applicable figure for the Definable Feature of Work. Completed? Yes/No? If no, explain.

--

3. Verify that all materials and/or equipment have been tested, submitted, and approved. Completed? Yes/No? If no, explain.

--

4. Review the three phases of control and provisions for providing the required inspection. Completed? Yes/No. If no, explain.

--

5. Examine work area to assure all required preliminary work has been completed and is in compliance with the contract. Results satisfactory? Yes/No? If no, explain.

--

6. Perform a physical examination of required materials, equipment, and sample work to assure they are on hand, conform to submitted plans, and properly stored. Results satisfactory? Yes/No? If no, explain.

--

7. Review the appropriate activity hazard analysis to assure safety requirements are met. Results satisfactory? Yes/No? If no, explain.

--

8. Discuss procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for this feature of work.

--

9. Check to ensure the portion of the plan for the work to be performed has been accepted by the client. Results satisfactory? Yes/No? If no, explain.

--

10. Discuss the Initial Phase of Control

--

11. Are materials stored properly? Yes/No? If no, what action was taken?

--

12. Remarks

--

QC Engineer:

Date:

Attachment C
Submittal Register

Attachment D
Field Change Notice Form

Attachment D: Field Change Notice Form

Client/Project:

Proposed Activity In-Scope:

Potential Schedule Impact:

Order of Magnitude Cost Estimate to Implement:

Task/Subtask(s) Affected:

Affected Documents:

Activity/Change Description:

Recommendation(s):

Approval Requested By

Prepared by:

Date:

Project/Remediation Manager Authorization:

Date:

Design Change/Engineering Review required?

Project Engineer Authorization:

Date:

Client Approval

Name:

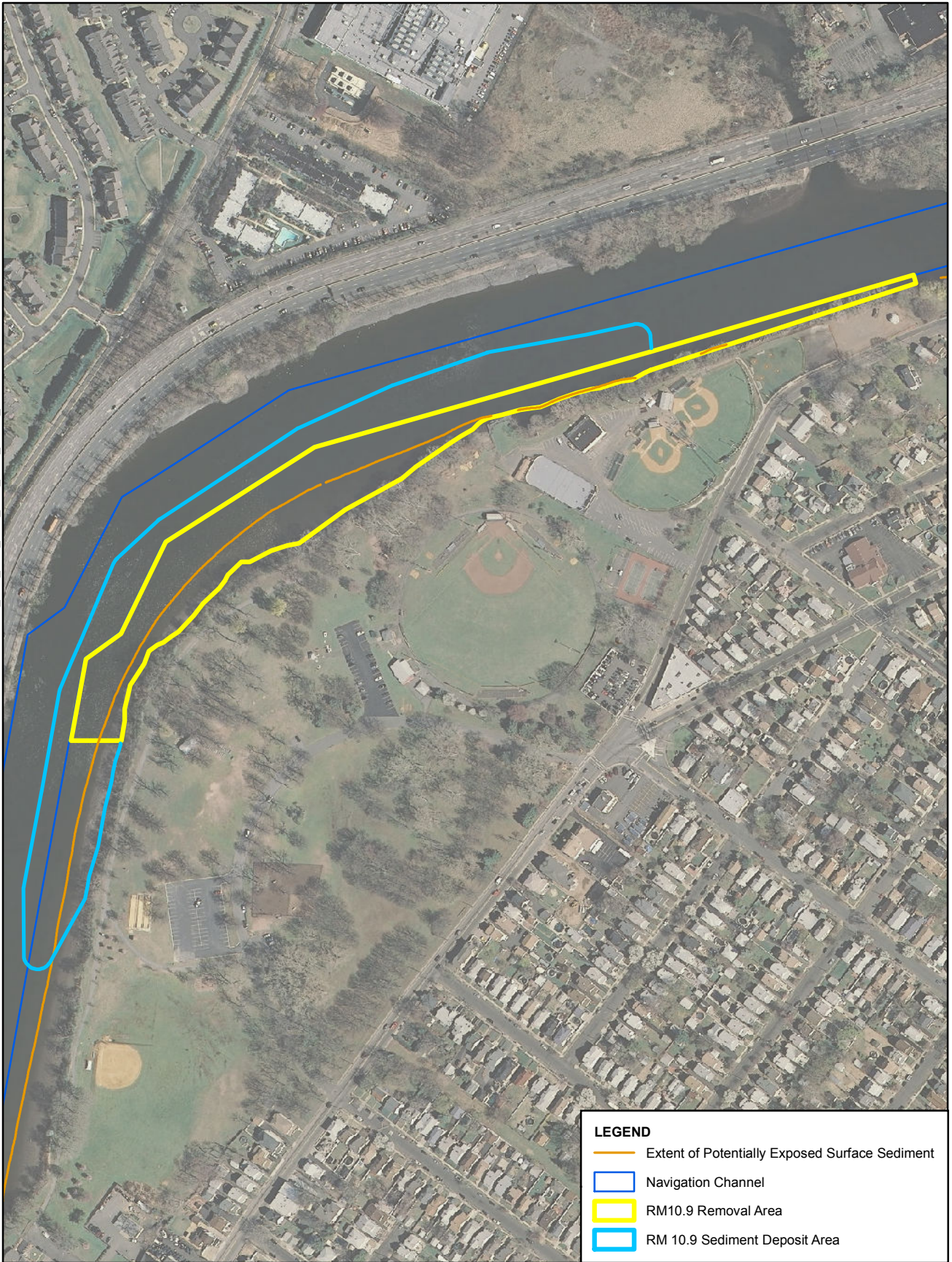
Title:

Comments:





Contract Modification Required:

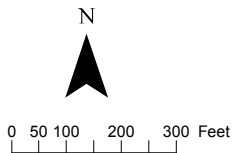
Attachment E
Non-Conformance/Deficiency Log

DAY:\ANTIGONE\PROJ\LOWERPASSAICRIVER\GRP4\2305\LOWERPASSAIC\F\S\GIS\MAPFILES\RM10-9\SPECIAL\FIG1-1_LPR_10-9_SED_DEP_REM_AREA_CD2.MXD ECLARK\10/26/2012 11:28:52 AM



LEGEND

-  Extent of Potentially Exposed Surface Sediment
-  Navigation Channel
-  RM10.9 Removal Area
-  RM 10.9 Sediment Deposit Area



Notes:

1. Orthophoto: NJGIS, 2007
2. The Extent of Potentially Exposed Surface Sediment was generated from the -2ft (NGVD29) elevation, which represents the Mean Low Water for this part of the river. The data source was the July 2011 Bathymetry Survey conducted as part of the RM 10.9 Characterization Program (CH2M HILL & AECOM, 2012).

FIGURE 1-1
RM 10.9 Sediment Deposit and Removal Areas
Construction Quality Control Plan
Lower Passaic River Study Area, New Jersey

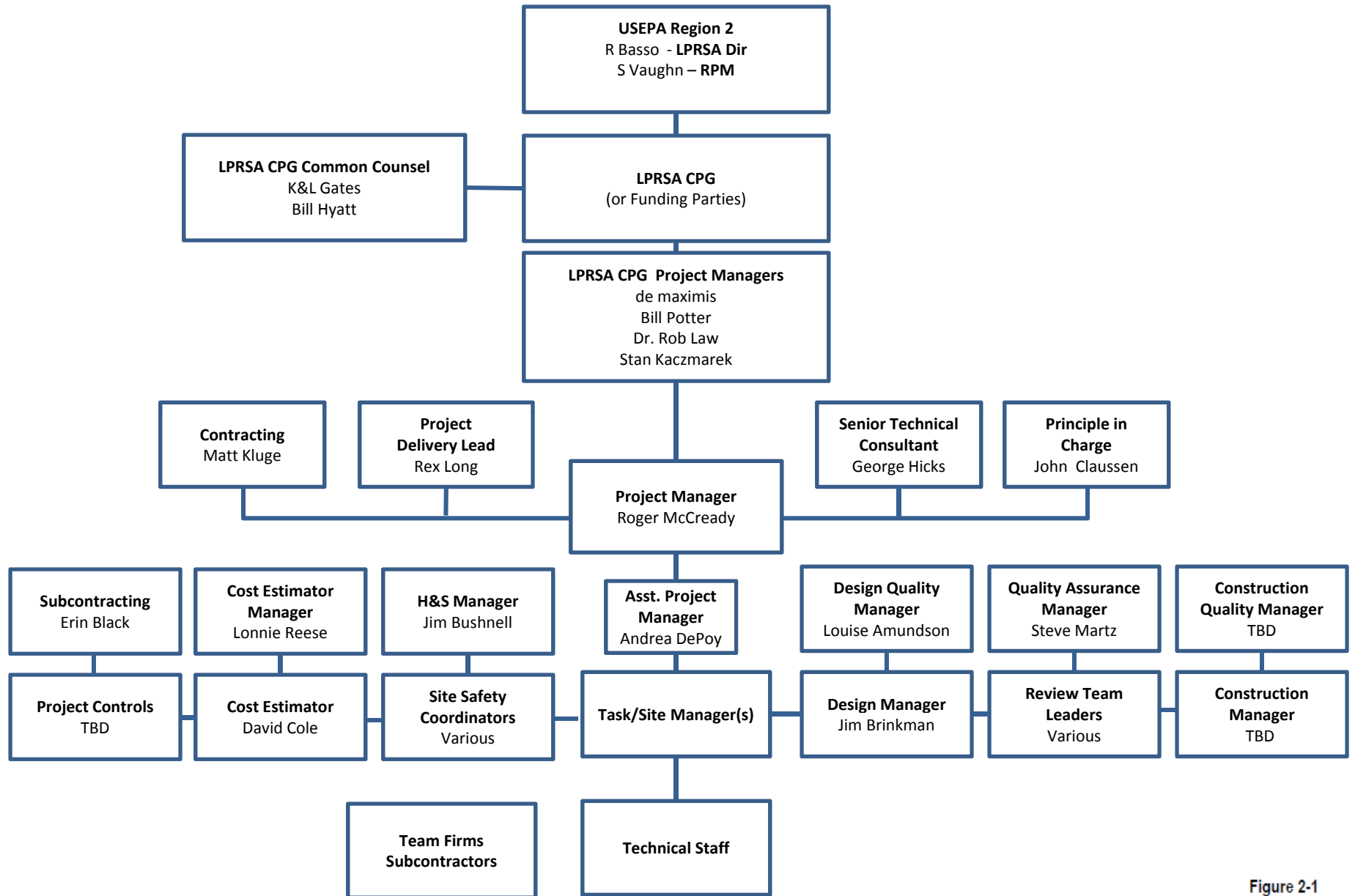


Figure 2-1
Organizational Chart
Construction Quality Control Plan
Lower Passaic River Study Area, New Jersey