

Kevin Whalen
IBM Corporate Environmental Affairs
8976 Wellington Road
Manassas, VA 20109

February 5, 2013
File No. 63526.00

Re: Remedial Design Work Plan Submittal
BCA #C704044
IBM Gun Club – Former Burn Pit Area
Union, New York

Dear Mr. Whalen:

Sanborn, Head Engineering P.C. (SHPC) has prepared this letter for submittal to the New York State Department of Environmental Conservation (NYSDEC) in accordance with its request to complete and submit¹ a Remedial Design Work Plan (RDWP) in support of IBM's work at the IBM Gun Club – Former Burn Bit Area property in Union, New York (the site). The site is covered under BCP Agreement No. C704044 executed by IBM and NYSDEC on August 22, 2005 as amended on April 26, 2012. We understand that IBM will provide NYSDEC with a copy of this letter to fulfill the request.

This letter, along with the contents of the Remedial Work Plan² dated December 19, 2012, constitute the RDWP in fulfillment of the requirements for this submittal under NYS Guidance DER-10³. In accordance with direction from NYSDEC, this letter provides a summary of the remedial design components (what is being designed) and a detailed schedule including projected submittal dates and milestones. This letter is signed and certified by the individuals who will be in responsible charge of the design and construction phase engineering. As you are aware, the design is based on field pilot testing and years of monitoring, and no additional investigations and testing are planned as a part of, or to support design.

SUMMARY OF REMEDY

The remedy components as outlined below are consistent with those detailed in the Remedial Work Plan and described in NYSDEC's December 17, 2012 Decision Document (Decision Document)⁴.

¹ New York State DEC, January 11, 2013, Email from Jon Greco.

² Sanborn, Head Engineering P.C., December 19, 2012, Brownfield Cleanup Program, Alternatives Analysis and Remedial Work Plan, BCA #C704044, IBM Gun Club – Former Burn Pit Area, Union, New York.

³ NYSDEC, May 3, 2010, DEC Program Policy, DER-10/Technical Guidance for Site Investigation and Remediation, Section 5.2 Remedial Design (b) Remedial Design Work Plan.

⁴ NYSDEC, December 17, 2012, Decision Document, IBM Gun Club, Burn Pit, Brownfield Cleanup Program, Union, Broome County, Site No. C704044.

The Remedy is intended to address site environmental conditions that are summarized in Section 1.1 of the AA&RWP and include the presence of volatile organic compounds (VOCs) in rock and groundwater below the site, and metals-containing surficial soil in the vicinity of the former burn pit area (BPA). The Decision Document indentifies trichloroethene (TCE), arsenic, dichloroethylene, and lead as the contaminants of concern for the site.

The Attached Executive Summary Figure ES-1 from the Remedial Work Plan summarizes pertinent site features and components of the approved remedy that include:

1. Capping the primary VOC source area and residual surficial soils with an engineered, low-permeability clean soil fill cap, providing a minimum of 2 feet cover over surficial soils containing certain metals at concentrations above New York State soil clean up objectives established for residential property use (Residential SCO).
2. Placement and compaction of engineered soil fill within a topographic depression south of the Burn Pit Area where VOC-containing groundwater has been observed to breakout to the ground surface seasonally as seeps and springs.
3. Establishing and maintaining grass and tree cover to both limit infiltration recharge and enhance direct uptake of VOC-containing shallow groundwater, a process known as phytoremediation. The tree planting shall include fast growing tree species that have been commonly applied to VOC phytoremediation projects and native species.
4. Engineered introduction of amendments to groundwater that have been shown in site-specific pilot testing to enhance biochemical destruction of VOCs. The amendment used in pilot testing⁵ was an edible soybean oil product commercially produced for biochemical remediation applications. The amendment will be injected into vertical boreholes designed for this application and open to the upper 20 or so feet of subsurface.

Institutional Controls will be established and maintained for the downgradient plume area where development of groundwater supplies shall be restricted. Future construction of occupied structures would require testing and/or implementation of appropriate actions to address exposures related to soil vapor intrusion.

IBM will enter into an environmental easement for the site as required under New York ECL Article 71, Title 36 that will include by reference a Site Management Plan (SMP) that will specify institutional and engineering controls to be implemented and maintained. Under the SMP, IBM will submit to NYSDEC a periodic certification document of the status of the site relative to institutional and engineering controls in accordance with Part 375-1.8 (h)(3).

⁵ Sanborn, Head & Associates, Inc., October 5, 2011, Report of Findings, Pilot Testing of Enhanced In Situ Biochemical Degradation, IBM Gun Club – Former Burn Pit Area, Union, New York.

REMEDIAL INVESTIGATION FINDINGS AND BASIS FOR REMEDIAL DESIGN

The site remedy is being designed based on findings discussed in the Remedial Investigation (RI) Report of findings⁶, RI Addendum⁷, and site-specific pilot testing, as well as subsequent semi-annual water quality monitoring for evidence of changes in site environmental conditions. Data gaps or materially changing conditions that would require additional investigation work have not been identified. As IBM and NYSDEC are aware, the Remedial Work Plan reflected nearly 95% complete design development and outlined in detail the items referenced in DER-10 Section 5.2 (b), which are included by reference with this letter.

SCHEDULE

Figure 2 depicts an updated schedule projection that reflects the December 2012 approval of the Remedial Work Plan and the NYSDEC Decision Document, and the input from the Agencies regarding their projection of the regulatory review process going forward. It projects construction in the second and third quarter of calendar year 2013. The schedule projection is organized by line identification numbers (ID) on the left hand column that are referenced in the discussion to follow. Particularly notable milestones moving forward include:

- Submittal of the 95% Complete Design package (ID 22) to the NYSDEC in mid-February 2013. The 95% Complete Design package will include drawings to support Storm Water Pollution Prevention permitting (SWPP). We understand that the agency review process will take approximately 30 days and include reviews by NYSDEC and NYSDOH. The Agency review will focus on consistency with the agency decision document and compliance with possible permitting. As outlined in the Remedial Work Plan, we understand that permitting will include Underground Injection Control permitting in addition to the SWPP.
- Contracting for construction implementation and construction phase engineering targeting start of construction in the second quarter of 2013 (ID 27). The contracting will begin after IBM receives comments/approval of the 95% Design. A final design submittal of construction plans and specifications, along with a site Health and Safety Plan (HASP), is projected for late March assuming a 30 day review period for the 95% complete design before approval or minimal revisions to address comments; and
- Preparation of the SMP and submittal to the NYSDEC in early April 2013 (ID 76).

The schedule depicts an allowance of up to 120 days for site work, allowing for seeding and planting of the filled area within the New York State Department of Transportation

⁶ Sanborn, Head & Associates, Inc., August 5, 2009, Report of findings, Brownfield Cleanup Program Remedial Investigation, IBM Gun Club – Former Burn Pit area, Union, New York.

⁷ Sanborn Head & Associates, Inc., March 15, 2012, RI Addendum – Supplemental Soil Sampling and Analysis, Brownfield Cleanup Program remedial Investigation, IBM Gun Club – Former Burn Pit Area (BPA), Union, New York, NYSDEC Brownfield Cleanup Program Agreement #C704044.

(NYSDOT) preferred planting season. The NYSDOT preferred planting season for grass cover from August to late October is shown by line ID 36.

The schedule depicts construction of the injection boreholes (ID 37) after completion of site work through placement of soil fill (ID 34) leading to submittal of the Final Engineering Report (FER – ID 88) in the first quarter of 2014.

CLOSING

The remedial design is to be performed by Sanborn, Head Engineering P.C. and the undersigned *certify that they are currently NYS registered professional engineers and that this Remedial Design Work Plan Letter was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).*

We trust that this letter satisfies your present needs. We greatly appreciate the opportunity to be of service to IBM on this important project.

Very truly yours,
SANBORN HEAD ENGINEERING, P.C.



David Shea, NYS P.E.
President

A handwritten signature in black ink, appearing to read "Daniel B. Carr".

Daniel B. Carr, NYS P.E.
Vice President

DBC/DS: dbc

Encl.

Figure ES-1 Executive Summary of Site Features and Remedy Components

Figure 2 Schedule Projection Overview

cc: Jennifer Sanborn (Sanborn Head), Allan Horneman (Sanborn Head).

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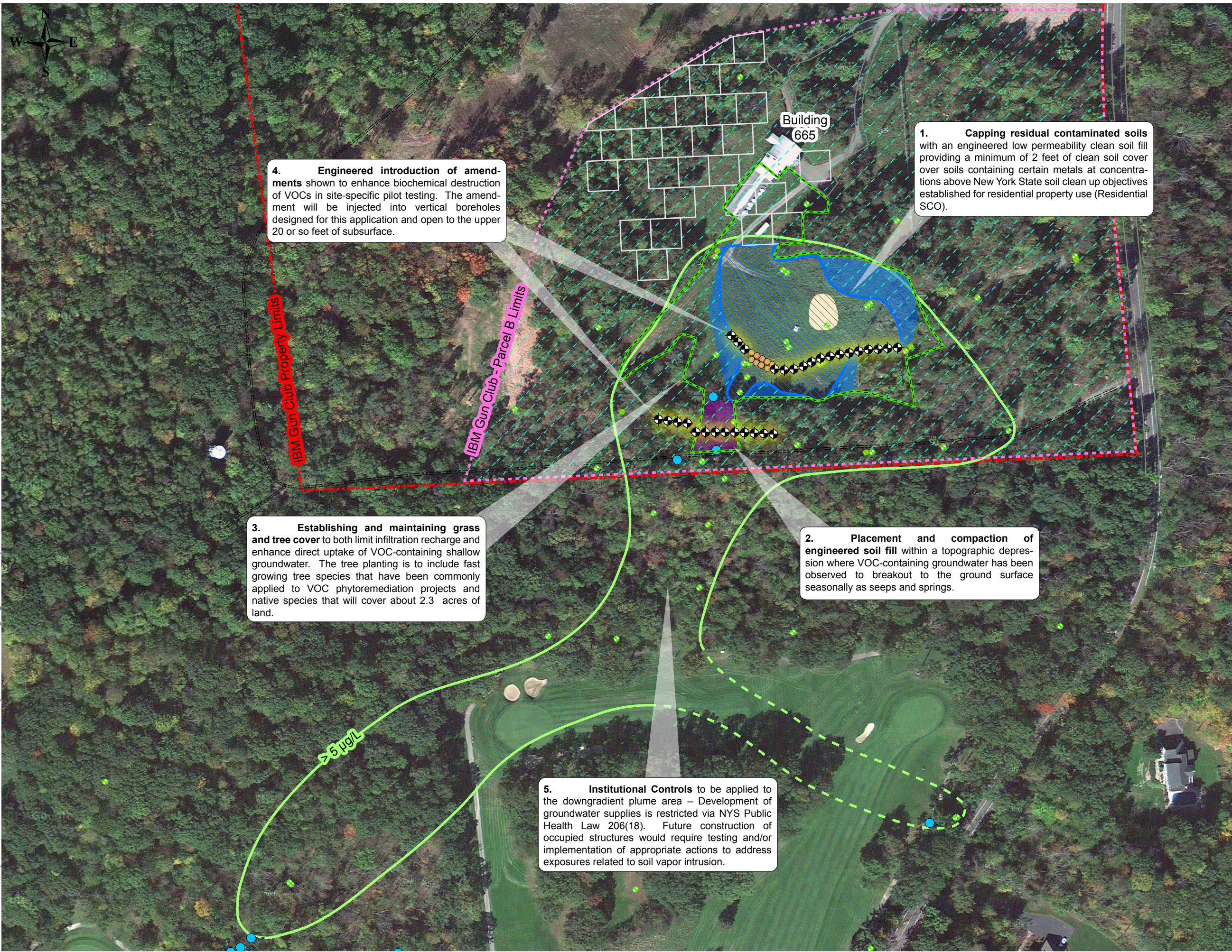


Figure ES-1

Executive Summary

Brownfield Cleanup Program
Alternatives Analysis and
Remedial Work Plan

IBM Gun Club - Former Burn Pit Area
Union, New York

Drawn By:	S. Warner
Designed By:	A. Horneman
Reviewed By:	D. Carr / D. Shea
Project No:	3025.00
Date:	September 2012

Figure Narrative

This figure is intended as a component of the executive summary describing recommended alternative remedy associated with environmental remediation of the IBM Former Burn Pit under the New York State Brownfield Cleanup Program. The remedy involves excavation and capping of surficial soils and enhancing in situ biochemical processes already active at the site and the planting and maintenance of trees to enhance uptake of VOC-containing groundwater.

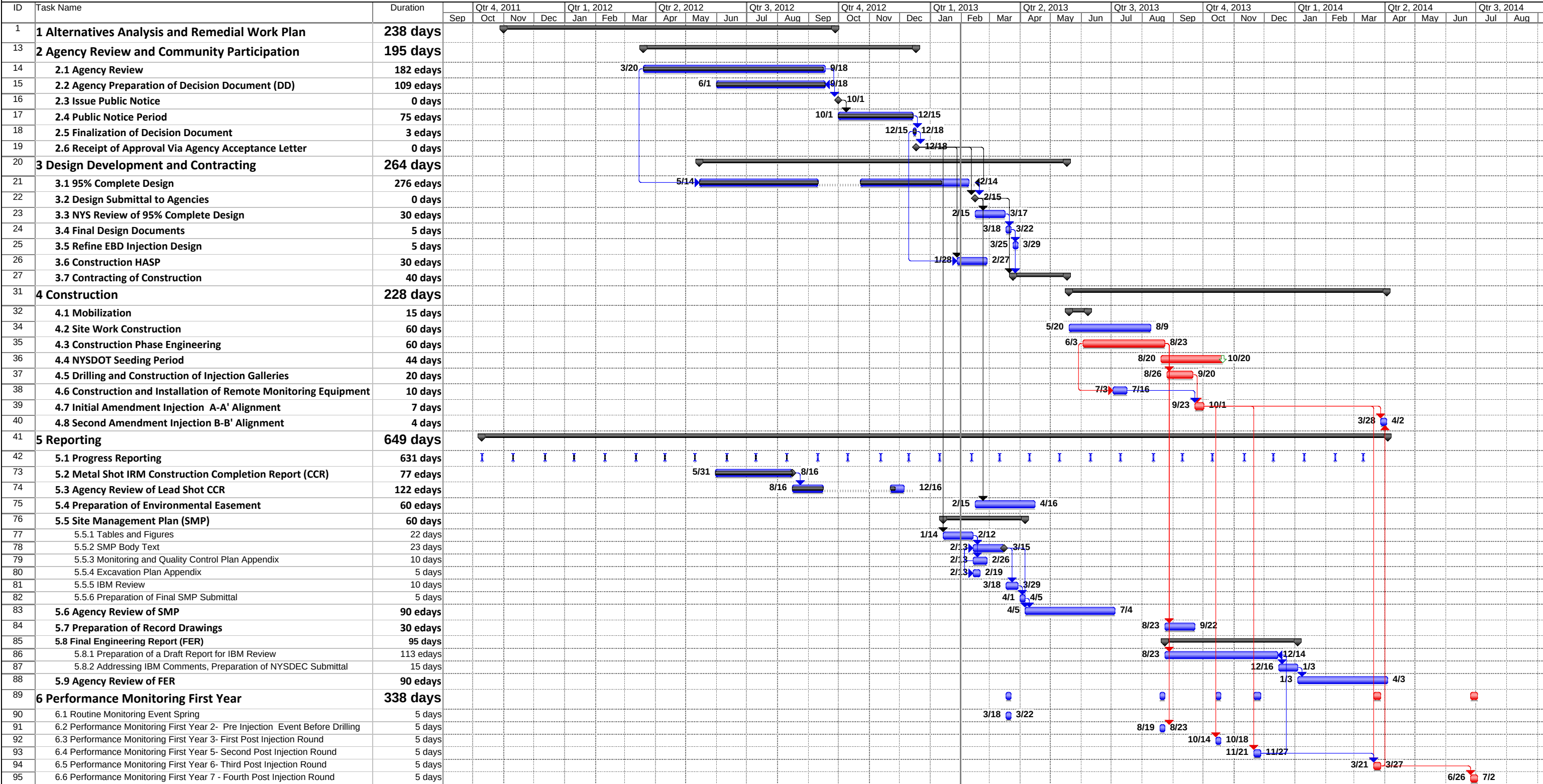
Please refer to the executive summary text for additional details and to Figures 1 and 2 for additional notes and legend.

Legend

- Proposed Injection Boring Location
- Former Burn Pit Disposal Area
- Surveyed boundaries of Burn Pit Property (Parcel B). Entire parcel to be subject to deed restrictions associated with groundwater development/use, and construction of human occupied structures.
- Area of property to meet Track 2 residential SCOs
- Inferred limits of groundwater TCE concentrations exceeding New York Standards (>5 µg/L)
- Proposed limits of Tree Planting
- Track 4 Surficial Soil Remedy Area - Proposed 1.28-Acre area requiring two-feet of Soil Fill Cap meeting soils standards for residential use (Residential Soil Cleanup Objectives or SCO)
- Approximate Limit of Soil Cap Extension - resulting from proposed final grading of imported soils.
- Approximate limit of additional fill required for filling topographic depression
- Surveyed limits of soil removal conducted under Interim Remedial Measure (IRM) in May 2012 to meet residential SCO

75 37.5 0 75 150 Feet

Figure 2
Schedule Projection Overview
Remedy Design and Implementation through Final Engineering Report
IBM Gun Club Burn Pit Area



Project:63526.00 Burn Pit Area
Date: Thu 1/31/13

Task Progress
Critical Task Milestone

Summary
Rolled Up Task

Rolled Up Critical Task
Rolled Up Milestone

Rolled Up Progress
Split

External Tasks
Project Summary

Group By Summary
Deadline