APPENDIX J

PROJECT QUALITY ASSURANCE SUMMARY
FIELD CHANGE ORDERS

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PROJECT QUALITY ASSURANCE SUMMARY

This appendix presents the quality assurance/quality control (QA/QC) summary for the Demolition Area 2 RI. The QA/QC goals for this project were established in the *Facility-wide Sampling and Analysis Plan (SAP) for the Ravenna Army Ammunition Plant* (RVAAP)(USACE, 2001) and the *Work Plan and Sampling and Analysis Plan Addenda (SAP Addenda) for the Phase II Remedial Investigation of Demolition Area 2 at the Ravenna Army Ammunition Plant* (USACE, 2002). The QA/QC procedures were implemented through project-specific procedures and requirements, SpecPro, Inc. QA program, and the U.S. Army Corps of Engineers (USACE) requirements. The focus of the project QA was mainly on field, analytical laboratory activities, and project administration.

1.0 FIELD QUALITY ASSURANCE

1.1 Procedures

Standard operating methods for Demolition Area 2 field activities are contained in the SAP and SAP Addenda. The SAP describes the overall approach and methodologies to be used at RVAAP and the SAP Addenda details project-specific requirements for field activities. These documents were reviewed and approved by the USACE – Louisville District, the Ohio Environmental Protection Agency and other interested parties and agencies prior to the beginning of field activities. Clarifications and/or planned deviations from these methods were documented as field change orders (FCOs), and variances were documented as non-conformance reports (NCRs). Copies of the FCOs are attached to this Appendix.

1.2 Readiness Review

A project kickoff meeting was held on July 9, 2002 at SpecPro's Ravenna office. The kickoff meeting consisted in part of the following QA/QC items:

- A review of all QA/QC documents, requirements and procedures.
- Field training requirements and schedule.
- Field mobilization and logistics.
- Laboratory and Subcontractor readiness.

Details of the project kickoff meeting are maintained in the project file.

1.3 Training

Field personnel were trained on all project related tasks by the Project Manager.

The Project Manager assessed the worker proficiency and training effectiveness by observing the workers in the field and retraining when necessary.

1.4 Equipment Calibration

Various types for monitoring and testing equipment were used during the field investigation. All equipment was calibrated prior to use and in accordance with the manufacturers recommendations. Field calibrations were recorded in the Quality Assurance/Quality Control logbook as appropriate.

1.5 Quality Control Samples

Field QA and QC samples were collected as specified in the SAP Addenda. These samples included trip blanks, equipment rinsate blanks, source water samples and field duplicates. Field QA splits were submitted to the USACE-designated laboratory, Severn Trent Laboratories Inc., for independent analysis. Field QC data and analysis of QC samples are presented in Appendix H.

1.6 Field Records

Pre-formatted and bound field logbooks were used to record field observations, data, activities and information. Logbook entries were checked for accuracy and completeness by the Project Manager. Field logbook pages are included in the Appendices of this RI report as follows:

- Appendix B – Monitoring Well Installation Logs
- Appendix C – Soil Sampling Logs
- Appendix E – Surface and Sediment Sampling Logs
- Appendix G – Groundwater Monitoring Well Development and Sampling Logs
- Appendix I – Slug Test Logs

Other items recorded in the logbooks but not presented in the Phase II report Appendices are maintained in the project files.

2.0 ANALYTICAL LABORATORY QUALITY ASSURANCE

GPL, Inc. of Frederick, MD was subcontracted by SpecPro, Inc. to perform chemical analysis for the Demolition Area 2 Phase II RI samples. GPL, Inc. is certified by the U.S. Army Corps of Engineers (MRD) for Organic/Inorganic/Explosives analysis.

2.1 Procedures

A comprehensive Scope of Work (laboratory SOW) was the basis of the laboratory analytical services provided by GPL, Inc. for this project. The laboratory SOW provided project-specific requirements, including:

- Analytical methods to be used
- Parameters to be measured
- Adherence to USEPA SW-846 protocol
- Project quantitative goals
- Project data deliverables.

2.2 Laboratory Quality Control

Laboratory quality control samples and data verification/validation were used to document laboratory data quality. The laboratory QC results are discussed in the Data Quality Control Summary Report (Appendix K). Laboratory QC sample results are contained in the project files and were used in the data verification/validation procedures.

2.3 Laboratory Documentation and Data Verification/Validation

Summary data packages and electronic deliverables were submitted by GPL to SpecPro in accordance with the protocols contained in USEPA SW-846. The analytical data was then verified and validated by the Project Chemist. Appendix K contains the Project Quality Control Assurance Summary where the verification/validation procedures and criteria are explained. The analytical results were compared to these criteria and data was accepted, rejected, or qualified. Routine data changes were documented through data change forms. There were no data deficiencies or laboratory-related nonconformance issues.

3.0 QUALITY ASSURANCE DOCUMENTATION

The primary methods of documenting QA for RVAAP environmental projects include the completing Field Change Orders (FCOs) and Nonconformance Reports (NCRs). Copies of FCOs completed for this project are included in this Appendix (FCO Nos. DA2-1 through DA2-3). No NCRs were needed for this project.

The purpose of a FCO is to request and document changes to the SAP, SAP addenda, or QA Project Plans. Three FCOs were completed for this project

- DA2-1 was initiated because bedrock was encountered during drilling at a higher than expected elevation in one of the boreholes, resulting in boring that was much shallower than projected.

- DA2-2 was a request to move the location of monitoring well MW-110 from its planned location to a new location. This was due to UXO concerns with the originally planned location.

- DA2-3 documented changes to the planned analysis of groundwater samples obtained from DET-4. This change was requested because a minimal volume of water could be collected from this well.

All FCOs were reviewed and approved by USACE project personnel prior to implementation.

FCO NO. DA2-1 **FIELD CHANGE ORDER**

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI DELIVERY ORDER NO: 0003

Date: 07-Nov-02 Type of Change: Technical Priority: _____

Requestor Identification:

Name: Susan McCauslin Organization: SpecPRO, Inc Phone: 330 358-7253

Title: Proj. Mgr. Signature: S McCauslin

Baseline Affected: ___ Cost ✓ Scope ___ Milestones ✓ Method of Accomplishment

Description of Change: While drilling, encountered bedrock (shale) at 3.5'. Continued to spoon + auger to 15'. Did not anticipate or scope for air-coring of bedrock at this site.

Justification: Suspect that this is an isolated occurrence. Other wells should be completed in overburden or a few feet into weathered rock. Coring at other locations is not likely to be needed.

Impact of Not Implementing Request: will impact scheduling and cost if drillers need to obtain necessary equipment for coring.

Participants Affected by Implementing Request: _____

Cost Estimate: $_____ Estimator Signature: _____

Phone: _____ Date: _____

Previous FCO Affected ___ Yes X No

Client Approval: Mark Patterson Title: Facility Mgr. COR.

Date: _____

Time From Initiation to Action: _____

Concur: P. Zelo, USACE

+ Technical change within contract. SOW.

FCO NO. DA2-2

FIELD CHANGE ORDER

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI   DELIVERY ORDER NO: 0003

Date: 07-16-02   Type of Change: Scope, Procedural   Priority: ________

Requestor Identification:

Name: Susan McCawlin   Organization: Spec Pro   Phone: (330)358-1753

Title: Proj. Mgr.   Signature: [signature]

Baseline Affected: ___ Cost ✓ Scope ___ Milestones ✓ Method of Accomplishment

Description of Change: Cannot site MW-110 at location set forth in work plan due to UXO concerns. Propose to move well location to north of "poppy field" suspected burial site near Bldg 1503.

Justification: Proposed new location has been checked for UXO, and a small area is clear and can have a well placed; this is also a suspected area of potential contamination.

Impact of Not Implementing Request: Delay in schedule and change in scoped cost if hand installation is necessary at original site.

Participants Affected by Implementing Request: Spec Pro, Toltest, OEPA, OSC, COE

Cost Estimate: $________   Estimator Signature: ________________

Phone: ________________   Date: ________________

Previous FCO Affected ___ Yes ✓ No

Client Approval: Mark Patterson   Title: Facility Man. / COR

Date: ________________

Time From Initiation to Action: ________________

Concur: P. Zito, USACE

FCO dayed: Ed / Mark, Tho EPA

Technical change within contract SOW. M.P.

FCO NO. DA2-3

FIELD CHANGE ORDER

PROJECT NAME: Ravenna Demolition Area 2 Phase II RI   DELIVERY ORDER NO: 0003

Date: 09-05-02   Type of Change: Procedural Scope   Priority: ______

Requestor Identification:

Name: Susan McClaslin   Organization: SpecPro Inc.   Phone: (330) 358-1753

Title: Prj Mgr   Signature: SMcClaslin

Baseline Affected: ___ Cost ✓ Scope ___ Milestones ✓ Method of Accomplishment

Description of Change: Due to minimal sample volume in well DET-4 (and possibly other wells to be sampled) lab was instructed to run explosives + propellants, then SVOC's, PCBs, and pesticides in that order if sufficient volume. All other parameters would be analyzed with half volume of sample.

Justification: Ample volume for full analysis not obtainable from certain wells.

Impact of Not Implementing Request: Sampling of well would be extended over several hours or days to obtain sufficient volume.

Participants Affected by Implementing Request: Spec-Pro, GPL

Cost Estimate: $______   Estimator Signature: ______

Phone: ______   Date: ______

Previous FCO Affected ___ Yes ✓ No

Client Approval: Mark Patterson   Title: Facility Man COR.

Date: ______

Time From Initiation to Action: ______

FCO Approved: [illegible], Ohio EPA

Concur: P. Zelo USACE

Technical change within contract SOW. M.P.