URS

May 20, 2003

Mr. Gary Miller
Project Coordinator
U.S. Environmental Protection Agency – Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

RE: Final Revisions - *Revised Closure Plan, Final Corrective Measure Study Report, and Preliminary Corrective Measure Implementation Work Plan*
General Electric Apparatus Service Shop
Albuquerque, New Mexico

Dear Mr. Miller:

On behalf of General Electric (GE), URS Corporation (URS) transmits the attached final revisions to the *Revised Closure Plan, Final Corrective Measure Study Report, and Preliminary Corrective Measure Implementation Work Plan* (*Report)*, dated August 16, 2002, for GE's former Apparatus Service Center in Albuquerque, New Mexico. The attached pages reflect the changes requested by the United States Environmental Protection Agency (USEPA) and the New Mexico Environmental Department (NMED) during a telephone conference on May 7, 2003. The USEPA's and NMED's comments addressed the materials that GE submitted on March 20, 2003 to respond to USEPA comments, dated January 10, 2003, which were received by GE and provided to URS in a facsimile on February 19, 2003.

Each of the USEPA's and NMED's comments during the May 7, 2003 telephone call are presented below in italics. The manner is which each comment has been incorporated into the *Report* is presented in standard text font following the condition.

In addition, we have attached replacement page changes (both strike out and final) for the portions of the report that have been modified in response to USEPA's and NMED's comments or to correct typographic errors. In cases where text modifications resulted in different page break locations, we have inserted a partial page after the changed page and given the new page the same page number as the preceding page with an "A" attached. For example, the changes on

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page 4 of Appendix H led to insertion of page 4A. Page 5 of Appendix H resumes with the text in the previous submittal.

Comment 1 – Page 47 of the Report – Remove mention of public notice from the last two sentences of the first paragraph.

This has been done.

Comment 2 – Page 4 of Appendix H –Clarify the description of the position of the doors and windows prior to and during collection of indoor air samples at the site.

GE has modified the text to state that the doors and windows will be closed during sampling.

Comment 3 – Page 13 of Appendix H – Include detection limits for TO-15 analyses.

GE has included detection limits for the target analytes in Table 2 of Appendix H, along with a reference to table on Page 13 of Appendix H.

Comment 4 – Figure 13 - Schedule of the Report – USEPA and NMED requested that the schedule be accelerated.

Based on discussions with USEPA and NMED, GE has accelerated the schedule by 90 days. This change in schedule is based on USEPA's and NMED's agreement to waive the need for GE to submit any pre-construction design deliverables to USEPA or NMED for review prior to commencing the approved corrective action. As such the schedule will include the pre-construction investigation activities, followed by design, procurement, and implementation. It is URS' understanding there is no regulatory obligation for GE to submit any deliverables to USEPA or NMED other than monthly status update reports between now and the final completion report. A copy of the revised schedule is attached. GE will work to maintain the schedule as presented herein. URS will continue to submit monthly status reports to the USEPA and NMED to keep all appraised of performance against the schedule.

oOo

GE and URS appreciate the USEPA's continued assistance with this project. If you have any questions of comments regarding this letter, please call Edward Jamison of GE at (518) 385-7979 or Don Porterfield of URS at (518) 688-0015.

Very truly yours,
URS CORPORATION

Don Porterfield, P.E.
Manager-Clifton Park

cc: Richard Kilbury, NMED
Edward Jamison, GE

9.0 PROJECT SCHEDULE

A corrective measure implementation schedule is included in Figure 13. After approval of this *CMS Report*, the pre-implementation investigation will be conducted. We estimate that the investigation phase will last approximately two to four months for collection of soil samples and evaluation of the analytical results. After the pre-implementation investigation is completed the corrective measure design will be refined, prior to solicitation of bids from qualified contractors. ~~Public notice and the public comment period will follow. The corrective measure design will be finalized after the public comment period.~~

The monthly progress reports will include information regarding the status of the corrective measure implementation work in relation to the schedule. In addition, the monthly progress reports will provide notification of modifications to the schedule if changes become necessary, such as the advent of unforeseen circumstances.

A3 Project/Task Description and Schedule

The monitoring will be conducted in the Shop building. The building is mainly rectangular and covers an area of approximately 6,730 square feet. The building has an approximate height of 20 to 22 feet. The building is not in current use, so there are no workers present within the building of interest during a normal work shift.

The primary goal of the monitoring effort is to document the indoor air quality for target VOCs under baseline conditions that are representative of worst-case operating conditions at the site. Prior to sampling, the doors and windows will be opened for at least four hours. Then, the doors and windows will be closed to ~~To this end, URS will~~ allow air quality to equilibrate within the Shop building ~~after shutting off the HVAC system~~ for approximately 24 hours prior to the start of sampling. Doors~~,~~ and windows~~, and other building openings~~ will be closed ~~left in their typical configuration (open or shut) prior to,~~ and other openings will be left in their normal position during~~,~~ sampling. Samples will be collected at breathing zone height (i.e., approximately five feet above floor grade) over an eight hour period on one day. Samples will be collected at two locations inside the building and one outdoor location upwind of the building.

Deliverables for this project include this QAPP and an appropriate letter report detailing the monitoring results. The results of this monitoring will be submitted to GE, US EPA Region VI, and the New Mexico Department of the Environment (NMED).

A4 Data Quality Objectives

This section defines the data quality objectives (DQOs) for the measurement data and the criteria for measuring performance within these objectives.

A4.1 Project Quality Objectives

For any monitoring effort to be successful, specific quality objectives must be stated. The monitoring and quality control results can then be assessed against these objectives to demonstrate that the quality of the measurement data is such that it meets the needs of the project. Data quality indicators typically evaluated during an air quality monitoring project

include precision, accuracy, completeness, representativeness, and comparability. These parameters are discussed further below as they pertain to this program. Additionally, detection

trap or small volume multisorbent trap. The sample is then released by thermal desorption and carried onto a gas chromatographic column for separation. Mass spectra for individual peaks in the total ion chromatogram are examined to identify and quantify the compound.

The GC/MS system will be calibrated initially at five standard concentrations (three for some compounds) that span the monitoring range of interest in an initial calibration sequence to determine instrument sensitivity and the linearity of GC/MS response for the target compounds. An instrument performance check standard and continuing calibration check shall be performed every 24 hours of operation. Mass calibration and resolution of the GC/MS system are verified by the analysis of the instrument performance check standard, bromofluorobenzene (BFB). The anticipated laboratory detection limits for the target analytes are listed in Table 2.

Prior to the analysis of any samples and blanks, but after tuning criteria have been met, the initial calibration of each GC/MS system must be routinely checked by analyzing a daily calibration standard to ensure that the instrument continues to remain under control. The daily calibration standard, which is the nominal 5 ppbv level calibration standard, should contain the target analytes. The percent difference for each target compound in a daily calibration sequence must be within method criteria in order to proceed with the analysis of samples and blanks. Those compounds that exceed the criteria shall be flagged accordingly.

Laboratory records include chain-of-custody forms, raw data files from the analysis, QC check data, analysis reports, and electronic data files. The laboratory is responsible for maintaining these records, and long-term archival of records is accomplished using a well-defined laboratory procedure. Following analysis, the electronic data, a printout of the analysis data, QC checks, and copies of the sample CoCs will be forwarded to the data management team.

B9 Quality Control Requirements

Quality control activities for the field and the laboratory functions on this project are discussed in the following sections. Data management quality control is discussed as part of the data validation activities (Section D15).

Table 2
VOC Target Analyte List

Method	Analyte	Detection Limit (ppbv)
EPA Method TO-15	Tetrachloroethene	0.05
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Note: ppbv – part per billion by volume

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Revised Closure Plan, Final CMS

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TABLES

FIGURES

FIGURES, Cont'd.

APPENDICES

1.0 INTRODUCTION

This *Revised Closure Plan, Final Corrective Measure Study Report, and Preliminary Corrective Measure Implementation Work Plan* (*CMS Report*) has been prepared by URS Corporation (URS) on behalf of General Electric Power Systems (GEPS) for the Former GEPS Apparatus Service Center (USEPA ID Number NMD047140256), located at 4420 McLeod Road, NE, in Albuquerque, New Mexico (site or facility).

The purpose of this *CMS Report* is to present corrective measure objectives and recommend an appropriate corrective measure alternative based on the conditions at the facility. The revised *CMS Report* was prepared based on the outcome of recent meetings and discussions between the United States Environmental Protection Agency (USEPA), the New Mexico Environmental Department (NMED), and GEPS in which the USEPA and NMED suggested that GEPS revisit the approach and activities necessary for closure of the site under the Resource Conservation and Recovery Act (RCRA) and expand the overall content/scope of this document to its current configuration.

In February 2002, URS submitted, on behalf of GEPS, a *Revised Corrective Measures Study Report dated February 14, 2002*. The *Revised Corrective Measures Study Report* superceded the preceding CMS Report that was prepared by Law Environmental, Inc., (Law) on behalf of GEPS and submitted to the USEPA and NMED in April 1992 pursuant to Consent Decree (Civil Action Number 87-1073-jb). The USEPA and NMED had not provided comments on the April 1992 *CMS Report* and it was understood that the USEPA and NMED would review and comment on the February 2002 CMS instead of the preceding 1992 CMS. On June 4, 2002 GEPS received comments on the February 2002 CMS from NMED. On June 18, 2002, GEPS received comments on the February 2002 CMS from USEPA. This *CMS Report*, which addresses NMED and USEPA comments, is submitted within the established 60-day period following receipt of both NMED and USEPA comments following the preceding submittal.

Following review and acceptance of this document by the USEPA and NMED, it is understood that the *CMS Report* will be subject to a 30-day public comment period per the Order on Consent.

This *CMS Report*, which also serves as a *Revised Closure Plan*, includes actions to address two dry wells at the site that have not yet been formally closed under RCRA. In July 1985, GEPS submitted a *Closure Plan* for an inactive dry well at the Albuquerque shop. The 1985 *Closure Plan* was never approved by NMED and has not been implemented. Therefore, it is GEPS' intent that the scope of work for the corrective measures at the facility will include formal closure of the former dry wells. Based on recent discussions with USEPA and NMED, GEPS understands that the agencies agree conceptually with this approach.

In accordance with the Order on Consent, this *CMS Report* includes elements of the design phase. Specifically, the *Preliminary Corrective Measure Implementation Work Plan* includes:

- Program Management Plan
- Community Relation Plan
- Preliminary Construction Schedule
- Quality Assurance Project Plan
- Health and Safety Plan

After this introductory section, background information and a summary of the RCRA facility investigation, are provided in Sections 2.0 and 3.0, respectively. Section 4.0 summarizes the revised and updated risk characterization conducted for the property. Section 6.0 presents the CMS and Section 7.0 discusses the Closure Plan. Section 8.0 presents the corrective measure implementation program. Section 9.0 discusses the project schedule.

2.0 BACKGROUND

This section provides background information about the site. The information in this section is based on previous reports prepared by Law.

2.1 SITE DESCRIPTION

The Former GEPS Apparatus Service Center is located at 4420 McLeod Road, NE, Albuquerque, New Mexico, on an approximate two-acre property within a light industrial park. The site is approximately four miles northeast of Albuquerque and approximately 4.5 miles east of the Rio Grande River, as shown on Figure 1.

The site layout is presented on Figure 2. There is one building on the property. The former service shop building is in the northeast quadrant of the property. An enclosure, which was formerly used for equipment storage and steam cleaning of parts, is attached to the south side of the building. The south end of this enclosure is open and a concrete slab extends approximately 20 feet beyond the enclosure. Asphalt pavement covers the area immediately north and northeast of the building. The remainder of the area to the east and the area to the south is covered with gravel and natural sparsely-vegetated soils. All equipment and materials were removed from outdoor areas when operations were discontinued and the facility was closed in 1994. There are no equipment or materials currently stored outdoors at the property and the property is not being used for any business purpose at this time.

GEPS retains a property manager to maintain the property. The entire parcel is secured by a perimeter chain link fence except for the McLeod Road frontage, which extends approximately 80 feet south from the McLeod Road curb to the front wall of the building, and the parking area at the northeast corner of the building.

The Former GEPS Apparatus Service Shop was constructed in 1969 for the repair of industrial equipment, primarily electrical motors. Transformers containing dielectric

fluids and insulating oils (some containing polychlorinated biphenyl [PCBs] compounds) were also repaired at the shop. Until 1983, wastewater from steam cleaning operations was discharged into two on-site dry wells. Site operations were discontinued and the facility was closed in 1994.

2.2 HYDROGEOLOGY

The geology underneath the site consists of gravel sediments. These deposits form a veneer on the river-cut surfaces and have a maximum thickness of approximately 50 feet. Borings conducted at the site indicated the presence of interbedded layers of sands with minor silt and clay layers (Law, 1990). Soils encountered in the vicinity of the dry wells are generally silty gravels that are partially cemented in some areas. Fine to coarse sands were encountered from a depth of 10 to 15 feet below the ground surface.

The depth to groundwater at the site ranges from approximately 250 feet below ground surface (bgs) to approximately 260 feet bgs. Based on the groundwater data presented by Law, groundwater generally flows to the south beneath the site.

3.0 RCRA FACILITY INVESTIGATION

In 1990, a RCRA Facility Investigation (RFI) was performed at the site by Law on behalf of GEPS to obtain information and other data to characterize the facility, identify sources of contamination, determine the nature and extent of contamination, and identify actual and potential receptors. The RFI Report was submitted to the USEPA Region VI, in November 1990.

The remainder of this section discusses the results of the RFI regarding sources, nature and extent, and receptors. Figure 2 presents the locations sampled during the RFI and supplemental investigations.

3.1 POTENTIAL SOURCES

Three former release areas were identified during the RFI:

- The former dry well areas;
- The former waste storage area; and
- The former drum rack area.

Each of these areas, which are shown on Figure 2, are described briefly below.

Former Dry Well Areas

The two dry wells were constructed in 1969 during the construction of the facility. Dry well #1 is approximately 10 feet northwest of the southwest corner of the building (see Figure 2). Dry well #1 is approximately 12 feet deep, with an inner diameter of approximately 2.5 feet at the top. The base of the dry well is slightly wider than the surface. The wall of the dry well is reportedly constructed of masonry blocks with the cavities oriented horizontally. A concrete lid, which spans the concrete blocks, is approximately one foot below the ground surface.

Dry well #2 is approximately 20 feet northwest of dry well #1 (see Figure 2). Dry well #2 is approximately 15 feet deep, with an inner diameter of approximately 3 to 5 feet, based on borings conducted during the supplemental soil boring investigation. The boring (B-7) advanced in dry well 2 encountered soil from the surface to approximately seven feet bgs, and cobbles from 7 feet bgs to the bottom of the dry well, approximately 15 feet. It has been assumed that the cobbles are confined to the dry well and were placed into the dry well when it was taken out of service.

Former Waste Storage Area

The former waste storage area is approximately 130 feet southwest of the building, as shown on Figure 2, and measures approximately 30 feet by 20 feet. This area was formerly used for the temporary storage of 55-gallon drums of waste oil from facility operations.

Former Drum Rack

The former drum rack is approximately 50 feet south of the building, and was used from approximately 1970 to 1985.

3.1.1 Nature and Extent of Contamination

The available site data provide a thorough and adequate delineation of the degree and extent of compounds of concern in soils at the site. A comprehensive presentation of all sampling locations completed as part of the various phases of RCRA investigations are presented on Figure 2. Areas of stained surface soil are shown on Figure 3. The results of laboratory analysis for PCBs performed on samples collected during the RFI and the supplemental investigations are presented on Figure 4. As can be seen from the results presented on Figure 4, PCBs were limited in their lateral extent and the vertical extent varied across the site from 0 to 0.5 foot bgs to as much as 30 feet bgs. The data indicate that the majority of impacts are limited to the upper 15 feet of soil surrounding the dry

wells. Data also indicate the presence of incidental near-surface PCB impacts at other locations south and southwest of the building.

The analytical results for the soil sampling conducted at the former waste storage and former drum rack areas did not indicate evidence of any extensive impact to those areas by analyzed chemicals. Furthermore, additional near-surface soil sampling and analysis was conducted in these areas to explore for previously undetected impacts (if any). Similarly, this additional sampling did not identify evidence of extensive impacts. Surface soil in the former waste storage and former drum rack areas contains low concentrations (below detection levels to 10.8 milligrams per kilogram [mg/kg]) of PCBs. In addition, stained surface soil, shown on Figure 3, has been observed near each area. These impacted areas will be addressed in this CMS.

The analytical results for the soil sampling conducted to investigate the former dry wells indicated the presence of compounds of concern at levels requiring additional investigation. Consequently, a series of additional investigations were conducted to thoroughly evaluate the degree and extent of compound of concerns in the vicinity of the former dry wells. Additional investigation in the area of the dry wells was proposed in a Work Plan prepared by Law on behalf of GEPS and submitted to the USEPA in January 1991, and revised and resubmitted in February 1991. Following approval, the workplan was implemented and the results of the investigation were presented in the Supplemental Soil Assessment Report, submitted to the USEPA in July 1991.

The findings of the RFI and supplemental investigations also indicated the presence of select volatile organics compounds (primarily xylene, ethylbenzene, and toluene) in the soils. Table 1 summarizes the locations within the upper 15 feet of soil at which the greatest concentration of these constituents have been detected. The results also indicated the presence of chlorinated volatile organic compounds in soils at much lower concentrations. Volatile organic compounds were predominantly found near the former dry wells.

During the RFI and supplemental investigations, select samples were analyzed for metals. The highest concentration of metals was in the soil sample collected from boring B-1 at the 11-12 foot bgs horizon. Boring B-1 was completed through dry well #1.

During the RFI, several monitoring wells and piezometers were installed across the site to characterize the groundwater quality, depth to the groundwater, and groundwater flow direction. The monitoring wells and piezometers are shown on Figure 2. The monitoring wells ranged in depth from approximately 279 feet bgs to 290 feet bgs. Groundwater was encountered at approximately 250 feet bgs to 260 feet bgs. Two groundwater sampling events were conducted during the RFI. The analytical results of these sampling events are summarized in Table 2. The results of the groundwater samples collected from the monitoring wells during two rounds of groundwater sampling at the site indicated that groundwater quality had not been impacted.

3.1.2 Potential Receptors

The RFI efforts included identification of potential migration pathways for site constituents and a review of potential human and environmental receptors. Based on the review of the potential exposure pathways and potential receptors, Law concluded that site workers could potentially be exposed to constituents in the soils via dermal contact and ingestion. Based upon the nature of the development near the service shop and population distribution discussed in the RFI, it is considered unlikely that potential environmental receptors would be affected by site-specific constituents detected in site soils.

Law also identified groundwater as a potential receptor. Based on the RFI work, Law concluded that the potential for exposure to site-specific constituents via the groundwater pathway is low to non-existent. Groundwater as a potential receptor has been further evaluated since the RFI and is discussed in Section 4.0.

4.0 RISK CHARACTERIZATION

On the behalf of GEPS, URS has revised the previously-completed Risk Assessment for the site. The Revised Risk Assessment is in Appendix A. In accordance with the USEPA's December 12, 2001 letter, the revision to the Risk Assessment was performed based on an uncontrolled, residential future land use scenario assumption to satisfy January 2001 changes in New Mexico law. Based on information provided by USEPA and NMED, GEPS understands that this revision to the risk assessment is required due to a change of the risk-based goals for RCRA corrective action remediation of soils by the NMED Hazardous Waste Bureau (HWB). Because the State of New Mexico currently has no available mechanism in place to restrict future land use and ensure that industrial use scenarios will permanently be met, under the new risk-based regulations, NMED HWB no longer allows the use of industrial screening levels (which was the basis of the previous Risk Assessment) to achieve a No-Further-Action (NFA) RCRA closure determination for soils. In conjunction with this, the NMED HWB has also revised the target excess risk level for determination of NFA closures from 10^{-6} to 10^{-5} for the total risk from all carcinogenic constituents in soil. NMED HWB target screening levels for non-carcinogenic compounds remain based on a Hazard Index (HI) of 1.

The risk assessment has been performed to evaluate non-PCB compounds of potential concern present in site soils. Quantitative risk assessment of PCB compounds has been excluded from the attached Revised Risk Assessment. Instead, PCB data are compared to TSCA guidance for PCB remediation waste (40 CFR §761.61), which has been adopted as the corrective measure objective (i.e., cleanup level) for the site. The risk assessment has employed standard values and approaches as set out by the USEPA, NMED, and relevant guidance, which are typically designed to be conservative and thus are likely to overestimate actual exposure potential. Use of these values and approaches in the Revised Risk Assessment should not be regarded as agreement that they represent the actual exposures at the site. Similarly, the use of published TSCA cleanup levels should not be regarded as agreement that these standards represent levels above which excess risks may be encountered. GEPS' election to use these inputs for PCBs and non-

PCB compounds does not represent a conclusion that this approach is appropriate for all sites.

The primary potential exposure pathways at the site are associated with potential ingestion or dermal contact with shallow soils (less than 15 feet bgs). The Revised Risk Assessment also evaluated a potential exposure pathway of inhalation of volatile organic compounds from the soil. The current potential human receptors at the site include the caretaker of the property. Potential future human receptors are likely to be industrial users of the site. However, as explained above, the Revised Risk Assessment considers an uncontrolled, residential future land use scenario in accordance with NMED requirements. Exposures associated with residential use are likely limited to the top five feet of soil. It was further assumed that a construction worker could be exposed to contaminants from the five feet to 15 feet interval during redevelopment of the site. Investigations conducted at the site have demonstrated that there is no potential for groundwater contamination at the site and as such, potential future use of the groundwater is not a complete potential exposure pathway for the site. Information presented in Section 4.2 demonstrates that there is no potential threat to site groundwater regardless of the depth at which chemical constituents are present.

As stated above, a PCB cleanup level of less than or equal to 1 milligram per kilogram (mg/kg) has been adopted as the corrective measure objective (i.e., cleanup goal) for soils from zero to 15 feet bgs at the site. As supported by the regulating agency, based on established potential exposure risk assessment scenarios, there is no potential for direct exposure to soil at depths greater than 15 feet bgs and the corresponding direct-contact exposure pathway to these deep soils can be eliminated from further consideration. Specifically in relation to PCBs, it is therefore understood that the corrective measures proposed in this *CMS Report* will satisfy the requirements of the Consent Decree and allow USEPA to provide a termination notification in accordance with Section XXX of the Consent Decree for the site once corrective action measures are completed.

4.1 SOIL

The complete Revised Risk Assessment is presented in Appendix A. Based on the conservative inputs for the evaluated compounds, the results of the risk assessment (even in the absence of corrective action/remediation) demonstrate that there is no significant risk to human health or the environment posed by non-PCB compounds except possibly VOCs through intrusion into indoor air based on a conservative exposure scenario using the maximum VOC concentrations present in site soil. This determination is based on the recently-promulgated revision to NMED HWB regulations that requires risk assessments petitioning for NFA RCRA closure utilize an uncontrolled, residential future land use scenario.

The results of the exposure assessment were combined with the toxicity criteria to estimate lifetime excess cancer risk for carcinogenic chemicals and a hazard quotient for non-carcinogenic chemicals. A hazard quotient below one was assumed to be below the threshold for non-carcinogenic effects. In accordance with current NMED HWB regulations, both NMED and USEPA agree upon a target risk level of 10^{-5} for this site, which meets the residential risk exposure scenario. The results of the Revised Risk Assessment demonstrate that under current (unremediated) site conditions, the VOCs present in the soil pose a hazard quotient of 1.3. The hazard quotient is conservatively modeled on the maximum VOC concentrations found in site soils. Theoretically, this means there may be a potential for non-carcinogenic health effects to potential future residents or construction workers; however, the majority of maximum VOC concentrations found in site soils are within the drywells, which will be removed. Current RCRA guidance emphasizes modeling based on soil vapor gas data and not soil data. Evaluation of soil vapor gas data provides a hazard quotient of 0.009, which indicates that there is no risk from soil vapor. Thus, the vapor modeling based on soil data appears to be overly conservative. However, indoor air samples would be needed to confirm that the indoor air pathway does not pose a risk.

4.2 GROUNDWATER

The results of the RFI and subsequent investigations indicated that the groundwater at the site has not been affected by the former site operations or presence of compounds of potential concern at this site. Furthermore, as part of the previously submitted 1992 CMS effort, Daniel B. Stephens and Associates, Inc. (Stephens) of Albuquerque, New Mexico, under subcontract to Law, completed a conservative contaminant transport model for the site. Appendix B of this document presents Stephens' contaminant transport model for the site.

The results of this conservative modeling indicate that the concentrations of chemical constituents present at the site would not surpass drinking water standards at the point of regulatory compliance, which is the GE property boundary, at any point in the future regardless of site remedial activities. Furthermore, soil quality sampling indicate that in general the highest concentrations of compounds are relegated to within 15 feet of the surface that concentrations diminish with greater depth, and the results of groundwater sampling conducted at the site did not detect the presence of chemicals in groundwater. Also, the results of soil gas sampling conducted years after discontinuation of discharge of materials into the dry wells indicate no impact that would suggest the potential or possibility for groundwater contamination to occur at the site. The results of these evaluations including the conservative modeling, soil and groundwater sampling, and soil gas sampling provide sufficient evidence that there is no apparent potential for impact to the groundwater beneath the site from site-related compounds.

5.0 CORRECTIVE MEASURE AREAS

This CMS will address the closure of two former dry wells and soil that has been impacted by site activities. The primary contaminant of concern at the site is PCBs. Specifically, this *CMS Report* will address these four areas:

- Two former dry wells;
- The area west of the building, near the former dry wells, where PCB contamination extends to the subsurface soils;
- Several smaller areas at the site with surface soils that contain PCBs at concentrations greater than the TSCA cleanup objective of 1 mg/kg; and
- The three areas at the site with stained surface soil.

6.0 CORRECTIVE MEASURE STUDY

This section of the *CMS Report* is intended to serve as the *Final Corrective Measure Study Report*. As discussed previously, Law Environmental, Inc (Law) submitted a *CMS Report* on behalf of GEPS in April 1992. Based on the alternative comparison in Law's CMS, NMED, USEPA and GEPS agreed that excavation of PCB containing soil was the appropriate corrective measure for GEPS' Albuquerque site. Therefore, the *Revised CMS*, prepared by URS and submitted in February 2002, and this *CMS Report* include discussion of only one alternative.

This section of the *CMS Report* includes only a brief description of the CMS alternative. Section 8.0 of this report includes a *Preliminary Corrective Measure Implementation Work Plan,* which provides a detailed description of the proposed corrective measure.

6.1 CORRECTIVE MEASURE OBJECTIVES

The cleanup goals for the corrective measures planned for the site are based on the RFI information, public health and environmental criteria, USEPA guidance, and applicable state and federal statutes. Determination of site specific, non-PCB constituent cleanup goals has been based on NMED Technical Background Document for Development of Soil Screening Levels, dated December 18, 2000, and site specific risk assessment evaluations. Based on the results of the various phases of RFI and the revised Risk Assessment, volatile and semi-volatile organic compounds found in soils at the site do not present an unacceptable risk based on the exposure scenarios and pathways evaluated. As shown by the RFI results and the transport modeling previously conducted for the site, groundwater quality has not and will not be impacted by the site. Therefore, the cleanup goals for the corrective measures at the site are limited to PCB constituents.

The cleanup goal for PCBs in soils from zero to 15 feet bgs is equal to or less than 1 milligram per kilogram (mg/kg) (based on USEPA recommended TSCA bulk PCB remediation waste standard for high-occupancy areas without further conditions). As

stated previously in this document, soils at depths greater than 15 feet bgs that may exhibit PCBs do not pose a risk to human health or the environment and therefore do not require excavation.

In addition to this numerical cleanup goal for the corrective measures, these two additional cleanup goals have been established:

- Removal of stained surface soil west of the building, near the former waste storage area, and near the former drum storage rack; and

- Removal of two former dry well structures in order to close these units.

Fulfilling the corrective measure objective will require remediation of the areas discussed in Section 5.0 and presented on Figures 5 and 6. The areas shown on Figures 5 and 6 represent the minimum excavation limits to obtain the remedial goals based on current site-information. The areas identified for corrective measures are driven by the PCB concentrations and include the former dry well locations, stained surface soil, and several other localized areas where incidental impacts of PCBs have been identified. A more detailed discussion of the soil removal areas is presented in Section 8.3.

As discussed and reviewed with the USEPA and NMED, GEPS understands that completion of the corrective measure activities presented herein will facilitate complete closure of all environmental cases with the subject site and allow unrestricted use and possibly including divestment of the property. Specifically, the proposed corrective measure is intended to:

- Obtain a clean closure of two RCRA units (dry wells) at the site;

- Complete RCRA corrective actions at the site;

- Fulfill TSCA cleanup requirements for the site;

- Obtain a No Further Action declaration from USEPA and NMED with respect to RCRA; and

- Obtain a termination notification in accordance with Section XXX of the Consent Decree from USEPA.

GEPS will demonstrate that the site activities completed during this corrective measure meet the requirements of clean closure equivalency [40 CFR 270.1 (c) (5) and (c) (6) and 20.4.1.00 NMAC] through the collection of appropriate samples during closure and reliance on existing data previously collected during the RFI. Clean closure equivalency will be demonstrated in the Corrective Measure Certification Report, which will be prepared following successful implementation.

6.2 EVALUATION CRITERIA

The following criteria were used to evaluate and confirm the suitability of the corrective measure alternative recommended for the site.

Short Term Effectiveness:	The ability of the corrective measure to meet the corrective measure goals in the short term and be effective;
Long Term Effectiveness and Reliability:	The demonstrated and/or expected ability of the corrective measure alternative to function properly without frequent and/or complex operating or maintenance activities and maintain the corrective measure goals;
Remediation of Sources:	The ability of the corrective measure to remediate the source areas;
Implementability:	The technical and administrative feasibility of constructing and operating the corrective measure system including the time it takes

to implement and the time required to achieve a given level of response;

Health and Safety:	The ability to comply with all regulatory requirements to protect human health and minimize human exposure to compounds of potential concern;
Community Acceptance:	The effectiveness to mitigate potential impacts to the environment and the ability to comply with environmental standards and criteria and be accepted by the public; and
Cost:	The affordability of the corrective measure alternative from capital, operational, and maintenance perspectives.

6.3 CORRECTIVE MEASURE ALTERNATIVE - EXCAVATION AND OFF-SITE DISPOSAL

This alternative includes excavation and off-site disposal of soil in the zero to 15-foot horizon that exceeds the cleanup goal of 1 mg/kg for PCBs.

Based upon the laboratory data, the extent of soil that exceeds the cleanup objectives was identified for shallow soil and soil at depth. Next, potential minimum limits of the proposed corrective action excavation areas were developed. Figures 5 and 6 show the minimum excavation limits for shallow soil and soil at depth, respectively. Section 8.0 describes how minimum excavation limits were developed. Figures 5 and 6 incorporate not only the areas of soil above 15 feet bgs with concentrations of PCBs greater than the cleanup objective but also include the three stained soil areas and the two dry well structures.

The actual extent of excavation and volume of soil removed is expected to vary based upon the results of the additional delineation sampling, excavation methodology, and the analytical results of post-excavation sampling. Because it would be impractical to excavate only the minimum excavation areas for soils at depth, depicted in Figure 6, the

anticipated excavation limits have been expanded, as shown in Figure 7. The anticipated limits of excavation for soils at depth are depicted in Figure 7. The anticipated removal volume is approximately 1,200 cubic yards of (in-situ) soil.

The following sub-sections summarize the corrective measure alternative and evaluate the alternative against the criteria listed above. Additional details concerning the implementation of this alternative are provided in Section 8.0, which presents the *Preliminary Corrective Measure Implementation Work Plan.*

6.3.1 Alternative Description

Excavation involves the physical removal of the contaminated materials from the ground. This can be accomplished using conventional excavation techniques and equipment such as a backhoe or front-end loader. Conventional excavation equipment should be capable of excavating soils down to the maximum excavation depth of 15 feet bgs.

Prior to excavation, additional soil samples will be collected to better delineate the lateral extent of PCB impacts. The scope of the pre-implementation investigation is discussed in Section 8.2.2. Based upon current site data, the depth and lateral limits of the soils that would be excavated are illustrated on Figures 5 and 7. Based on the distribution of PCBs in site soils and the maximum excavation depth of 15 feet bgs, it is estimated that approximately 1,200 cubic yards (in place) of soil would be excavated during implementation of the corrective measure. Actual excavation volumes and areas may vary depending on the results of the pre-implementation investigation, if unanticipated conditions arise, such as potential for building or utility instability, or if results of the post excavation sampling do not meet the cleanup goals.

Following excavation, post-excavation soil samples would be collected from exposed excavation surfaces above the maximum excavation depth for laboratory analysis of PCBs. This data would be evaluated to evaluate if the corrective measure objective has been achieved. Additional excavation, to a maximum depth of 15 feet, would be

contemplated for areas that indicate residual levels of PCBs are greater than the cleanup goals.

After post-excavation sampling demonstrates that the cleanup levels have been achieved, the excavated areas would be backfilled with clean soil obtained from an off-site source, which would be sampled/analyzed and confirmed clean prior to placement. Following backfilling operations the ground surface would be restored to pre-existing conditions.

We anticipate that excavated soils will be temporarily stockpiled at the site in roll-off containers lined with and covered with plastic sheeting. However, the method of transporting removed soil to disposal facilities soil may be altered during implementation. Representative samples would be collected from the stockpiled materials and submitted to a laboratory for analyses to characterize the waste in accordance with RCRA 40 CFR §261 protocol. The method of waste disposal would be based on the waste characterization data, applicable regulations, GEPS waste management policy and cost. Landfilling is the probable off-site disposal option. However, off-site destruction by incineration (possibly for liquid wastes such as decontamination rinsates) may also be considered by GEPS.

6.3.2 Alternative Evaluation

This alternative has been evaluated against the seven criteria presented in Section 6.2.

6.3.2.1 Short Term Effectiveness

The excavation and off-site disposal of the soils would effectively address the areas considered for corrective action in a short period of time. It is anticipated that the effort can be coordinated and performed over a period of several months.

6.3.2.2 Long-Term Effectiveness and Reliability

Excavation and off-site disposal is a one time operation and does not require complex or frequent maintenance activities. Excavation and off-site disposal of soils would result in an effective long-term and permanent corrective measure.

6.3.2.3 Remediation of Sources

The excavation and off-site disposal of impacted soils would result in the removal of all potential source areas.

6.3.2.4 Implementability

Excavation and off-site disposal is a widely used corrective action measure and is considered to be both technically and administratively feasible. Since this alternative involves the excavation and off-site disposal of the contaminated materials the cleanup goals for the site would be met when the material is removed.

6.3.2.5 Health and Safety

Potential short-term impacts during the excavation and removal operations primarily involve exposure to air borne constituents and organic vapors and physical risks associated with construction equipment. The potential for physical risks and exposure would be reduced through the implementation of site health and safety controls such as site access restriction, dust control, decontamination and use of personnel protective equipment during site activities.

Potential exposure to the public due to accidental releases, can be minimized by utilizing sealed transport containers, decontamination of transport vehicles before exiting the site, and the use of reputable transportation companies.

The long-term impact to the public health would be minimal since this alternative involves the excavation and off-site disposal of soils to meet the cleanup goals and the placement of clean fill.

6.3.2.6 Community Acceptance

As presented in the RFI report, the soils at the site do not presently pose any adverse potential impacts to the environment. Removal of the impacted soils would meet the corrective measure objective and eliminate the potential for future potential environmental impacts. The removal and off-site disposal of the impacted soils is expected to meet with high community acceptance, any comments generated on the proposed corrective measure would be addressed during the public comment period.

6.3.2.7 Cost

The budgetary cost estimate associated with the implementation of this alternative is anticipated to be up to $750,000. However, GE and URS will work hard to control the costs and complete the project as economically as possible. This budgetary cost estimate is based on the excavation of approximately 1,200 cubic yards (in place) of soil and disposal of the majority of the soil (approximately 1,000 cubic yards) at a landfill as a non-regulated waste. Limited quantities of other wastes generated during the implementation of the corrective measure may also be generated. These wastes, including but not limited to equipment decontamination rinsates, would also be disposed appropriately.

7.0 CLOSURE PLAN

This section of the *CMS Report* serves as the *Revised Closure Plan.* A brief discussion of the work to be performed is presented in this section. Section 9.0 provides a more detailed discussion of the overall project.

7.1 INTRODUCTION

As discussed in Section 2.1, there are two out of service dry wells at the site that never underwent formal RCRA closure. As shown on Figures 2 and 7 the dry wells are on the west side of the building and lie within the CMS soil removal area. Therefore, removal of the dry well structures has been included in the corrective measures for the site.

7.2 SCOPE OF WORK

During implementation of the CMS, the two dry well structures will be removed. The remediation waste generated from the dry well removal will be segregated from the waste generated during the soil removal efforts. Based on the analytical results from soil borings in the former dry wells, a portion of the dry well waste may be a characteristic hazardous waste due to elevated concentrations of cadmium, chromium, and lead. Therefore, this portion of the removed material will be segregated and managed separately during the remedial effort. A sample of the waste will be collected and characterized to determine the appropriate disposal method.

Upon removal of the dry well structures, two soil samples will be collected from the base of the excavation below each former dry well to document the quality of soil left in place. A backhoe will be used to collect soil from the base of the excavation and each soil sample will be collected from the backhoe bucket. The four soil samples will be analyzed for VOCs, SVOCs, and PCBs. We anticipate that contaminant concentrations in the post excavation samples will be comparable to previous analytical results for soil samples in the area. If contaminant concentrations are significantly greater than

anticipated, GEPS will discuss with NMED and USEPA the significance of the analytical results.

The dry well areas will be restored in the same manner as the PCB removal areas. The excavated area will be backfilled with clean soil obtained from an off-site source, which would be sampled/analyzed and confirmed clean prior to placement. Following backfilling operations the ground surface would be restored to pre-existing conditions.

7.3 REPORTING

An agent of GEPS will be on-site to document the removal activities. A description of the work performed will be included in the certification report that will document all CMS activities. The results of the post-excavation sampling and documentation of proper disposal of remediation waste will be included in the report.

8.0 PRELIMINARY CORRECTIVE MEASURE IMPLEMENTATION WORKPLAN

This section serves as the *Preliminary Corrective Measure Implementation Program Plan* and the *Preliminary Corrective Measure Design.* The estimated cost for implementing the corrective measure that was presented in Section 7.0 is intended to be detailed enough to meet the requirement in the Order that the preliminary design plan include a cost estimate.

8.1 CORRECTIVE MEASURE OBJECTIVES

As discussed in Section 6.1, the corrective measure objectives for the Albuquerque site are:

- Removal of soil in the 0 to 15-foot depth horizon that contains PCBs at concentrations greater than 1 mg/kg;

- Removal of stained surface soil west of the building, near the former waste storage area, and near the former drum storage rack; and

- Removal of two former dry well structures in order to close these units.

8.2 DESIGN APPROACH

This section describes the design approach for the CMS. The first part of this section describes how the excavation limits have been developed based on the existing analytical data. The second part of this section describes the areas targeted for additional delineation to refine the excavation limits.

8.2.1 Extent of Excavation

As discussed in Section 6.0, the soil targeted for excavation is based on data obtained during the preceding RFI and supplemental investigations. Figure 5 shows the minimum soil removal areas for shallow excavations and Figure 6 shows the minimum soil removal areas for the deeper excavations.

The minimum lateral limits of excavation were developed based on the analytical data and the following two guidelines:

- For isolated samples with PCB concentrations exceeding the cleanup objective, a lateral radius equal to half the distance to the nearest sample location with analytical results meeting the cleanup objective was applied. If the distance to the nearest adjacent soil sample exceeded twelve feet, a radius of twelve feet was applied.

- Similar logic was applied for areas with contiguous soil samples exceeding the cleanup objective in order to estimate the likely lateral extent of impacted soil beyond the contiguous area.

The anticipated minimum depth of each removal area was estimated based on the analytical data and these two guidelines:

- For most soil sampling locations the depth of impacted soil was estimated to be one foot below the bottom of the sample interval corresponding to the soil sample which exceed the cleanup objective. This approach is supported by existing analytical data.

- The minimum excavation depth was extended deeper in areas with considerably higher concentrations of PCBs and no contiguous sampling.

The actual extent of excavation and volume of soil removed is expected to vary based upon the results of the additional delineation sampling, actual excavation methodology, and the analytical results of post-excavation sampling. Because the minimum excavation areas for soil at depth depicted in Figure 6 would be impractical to excavate, the anticipated excavation limits have been expanded as shown in Figure 7. The total anticipated removal volume is approximately 1,200 cubic yards of (in-situ) soil.

8.2.2 Pre-Implementation Investigation

The RFI and subsequent investigations generated a significant amount of data regarding soil quality at the site. However, the lateral extent of the PCB impacts in some areas remains uncertain. GEPS intends to conduct additional soil sampling prior to excavation to better delineate the lateral and vertical extent of the PCB impacts. In addition, at least one sample will be sent for geotechnical testing to classify the soil type. As shown in Figure 8, additional sampling will be conducted in these four areas:

- From 0 to 15 feet below grade along the building foundation, which lies along the east side of deepest excavation area;
- From 0 to 15 feet below grade along the north, west, and south sides of the deepest excavation area;
- From 0 to 11 feet below grade around the 11 foot deep excavation area corresponding to soil boring 7B-6; and
- Surface soil samples along the southwestern boundary of the stained area immediately west of the building.

GEPS has proposed to NMED and USEPA that the pre-implementation sampling results be used in lieu of post-excavation sampling. GEPS has proposed to NMED and USEPA that the pre-implementation sampling around the deeper excavations be conducted at the

same grid sampling intervals (every 1.5 meters [five feet], as defined by TSCA) as will be used for post-excavation sampling. The pre-implementation sampling results would be used to establish the excavation boundary. The excavation effort would extend to the boundary established by the 'clean' samples. This data will be used to delineate the degree of excavation and true post-excavation samples will not be collected for these excavation faces.

Soil borings will be placed at five-foot intervals around the anticipated perimeter of the two deeper excavation areas using a geoprobe. Soil samples will be collected from the borings at five-foot intervals beginning at 5 feet bgs for the 15 foot deep excavation and beginning at 6 feet bgs for the 11 foot deep excavation area. Surface soil samples will not be collected from the borings because both areas lie within the large shallow excavation area west of the building, that will be removed to a depth of 1.5 feet. After the shallow excavation is completed, post-excavation samples will be collected from base of the excavation, including the grid nodes corresponding to the soil borings. All samples will be analyzed for PCBs by USEPA Method 8082. The following table summarizes the proposed sampling.

Location	Number of Borings	Sample Depths	Number of Samples	Analysis
Along Building Foundation	11	5, 10 and 15 feet bgs	33	PCBs
Dry Well Area (15 feet deep)	24	5, 10 and 15 feet bgs	72	PCBs
Near Boring 7B-6 (11 feet deep)	12	6 and 11 feet bgs	24	PCBs
Surface Soil	3	0 to 6 inches	3	PCBs

If evidence, such as staining or strong odor, indicates that the soil from a different sampling interval may be more contaminated than the designated sampling interval, the sampling depth will be adjusted so that the soil sample will be collected from the depth of suspected greater impact. If a judgmental soil sample is collected, the judgmental sample will replace the nearest planned grid location soil sample. For example, if staining is

encountered between eight and nine feet bgs, field personnel will collect the sample from the stained interval instead of the planned 10 foot grid location.

Additional surface soil samples will be collected from the locations shown on Figure 8. The locations are intended to delineate between soil impacted by site activities and soil not impacted by site activities. The locations of the surface soil samples may be adjusted in the field if evidence indicates the planned sampling locations are within the stained area. The surface soil samples will be analyzed for PCBs by USEPA Method 8082.

All soil sampling locations will be marked with wooden stakes. The sampling will be conducted in accordance with the sampling protocol, *Quality Assurance Project Plan* and URS' *Health and Safety Plan*, which are discussed in Section 9.3.

The results of the additional sampling will be used to finalize the excavation layout. If the results of the additional sampling do not provide sufficient information to delineate the lateral and vertical extent of PCB impacts, GEPS may elect to conduct additional sampling.

8.2.3 Finalize Excavation Layout

After the additional sampling is completed, the excavation layout will be finalized. Figures will be prepared that show the limits of excavation, the soils that will be segregated for waste disposal purposes, and the anticipated post-excavation sampling locations. These figures will be used to layout the excavation areas in the field and will be part of the final design package.

8.2.4 Indoor Air Sampling

Based on the results of the risk assessment and at the request of USEPA, indoor air sampling will be conducted prior to remediation activities. The goal of the sampling will

be to validate the results of the soil gas vapor modeling, which demonstrated that the site poses no risk to human health through the vapor intrusion pathway. The results of the indoor air sampling will be compared to appropriate standards and reviewed with USEPA. If the results of the indoor air sampling indicate that the indoor air may pose a risk, GE will work with USEPA to address the issue. Possible actions include resampling indoor air during or after soil remediation activities, modifying soil remediation activities.

The air sampling plan is designed to evaluate the potential for migration of target VOCs in subsurface soils to indoor air under baseline conditions that are representative of worst-case operating conditions at the site. Air quality will be allowed to equilibrate within the shop building after shutting off the HVAC system for approximately 24 hours prior to the start of sampling. Doors, windows, and other building openings will be left in their typical configuration (open or shut) prior to, and during, sampling. Samples will be collected at breathing zone height (i.e., approximately five feet above floor grade) over an eight hour period on one day. Samples will be collected at two locations inside the building and one location outdoors and upwind of the building. The external sample will be collected to establish the concentration of VOCs in the ambient air.

Each of the air samples will be collected using evacuated six-liter SUMMA passivated, stainless-steel canisters. Each sample canister will be equipped with a particulate filter, a vacuum gauge, and a flow controller to collect the time-integrated samples. A Milliflow®, Veriflow®, or an equivalent regulator will be used to ensure proper volume of air into the cylinder. The flow regulators will be individually adjusted for each canister.

The canisters will be prepared for sampling at a certified laboratory. Prior to sampling each canister will be cleaned and blanked. Following cleaning and blanking, the canisters will be evacuated, leak-checked, their vacuum measured, and prepared for field deployment. The air samples will be analyzed for tetrachloroethene and trichloroethene by EPA Method TO-15. Appendix H, *Quality Assurance Project Plan For Indoor Air*

Quality Investigation, provides additional details on the air sampling methods and quality control procedures.

8.3 PRE-IMPLEMENTATION ACTIVITIES

This section describes the activities that will be completed before construction of the corrective measure.

8.3.1 Program Management Plan

The information required within the *Program Management Plan*, as defined by the Order, is incorporated throughout Section 8.0. Operation, maintenance, and monitoring have been omitted because the selected corrective measure is intended to be a permanent and final remedy for the site. As such, there will be no ongoing operation, maintenance, or monitoring activities once the corrective measure has been completed. During implementation, monitoring for health and safety purposes will be conducted.

The following table summarizes the key personnel involved in the project. As the design phase progresses, additional organizations and personnel will be identified. The qualifications of the identified personnel are presented in Appendix C.

Organization	Role	Personnel
General Electric Power Systems	Responsible Party/Owner Project Manager	 Edward Jamison
URS Corporation	Oversight Project Manager Engineer Field Oversight	 Don Porterfield, P.E. Steven Geiger, P.E. To be determined
To be determined	Surveyor	To be determined
To be determined	Excavation	To be determined
To be determined	Analytical Laboratory	To be determined
To be determined	Waste Disposal Facility(ies)	To be determined

8.3.2 Permits

Based on the preliminary design, no permits will be needed from the City of Albuquerque or Bernalillo County. A *Topsoil Disturbance Permit* may be required from the City of Albuquerque Department of Health if more than 0.75 acres will be excavated.

The City of Albuquerque Department of Health and the local fire department will be notified of the impending work before excavation begins.

8.3.3 Health, Safety, and Site Planning

Conducting the soil removal in a manner that is protective of the workers, public, and the environment is a priority. Figure 9 presents a site layout with the anticipated staging, exclusion, waste staging (within exclusion zone), and decontamination zones. Traffic flow through the site will be controlled to minimize the potential for migration of impacted soils. In addition, all equipment and at a minimum the tires of all transport vehicles (i.e trucks that transport the rolloff containers) will be decontaminated before leaving the site. Non-essential vehicles will remain in the paved or graveled portions of the site north of the shop building outside of the area of influence.

Dust monitoring will be conducted during excavation activities. The selected excavation contractor will be required to have dust suppression materials on-hand prior to commencing excavation. If dust suppression methods fail to reduce air borne dust levels to those listed in the *Health and Safety Plan*, excavation will be halted until after response actions have been implemented.

A copy of URS' *Health and Safety Plan* is included as Appendix D. The excavation contractor selected to perform the work will be required to prepare their own Health and Safety Plan, which will at least meet the requirements of URS' *Health and Safety Plan.* A copy of the contractor's Health and Safety Plan will be provided to NMED and USEPA before the start of work.

8.3.4 Contingency Plan

Implementation of the corrective measure represents a change in site activities that requires modification of the *Contingency Plan.* A *Contingency Plan* that is based on the scope of the proposed corrective measure is provided as Appendix E.

8.3.5 Community Relation Plan

Implementation of the corrective measure also requires modification of the Community Relations Plan. A *Community Relations Plan* that is based on the scope of the proposed corrective measure is provided as Appendix F.

8.4 IMPLEMETATION

Implementation of the corrective measure will include these five tasks:

- Preparations and Mobilization
- Excavation
- Verification Sampling, Analysis, and Evaluation
- Remediation Waste Handling
- Site Restoration

Some of these tasks will occur concurrently. Figure 10 presents the anticipated construction schedule. Progress towards completion of the CMS will be reported in the ongoing monthly progress reports submitted to the NMED and USEPA. Each of these tasks is described below.

8.4.1 Preparations and Mobilization

Prior to excavation, certain tasks and project coordination efforts will commence. The Table below summarizes these tasks and the responsible party.

Task Description	Responsible Party
Issue Notice to Proceed	GEPS
Coordinate with Selected Analytical Laboratory	URS
Coordinate with Selected Waste Disposal Facility	Selected Excavation Contractor
Lay out excavation areas and survey dry well locations	URS
Mobilize to site	Excavation Contractor and URS

During mobilization, the decontamination area, exclusion zone, and staging area will be set up on the site as shown on Figure 9. The extent of these areas may be modified in the field. Existing site fences will aid in delineation of the zones. Signs will be posted at the site that state "RCRA CORRECTIVE ACTION IN PROGRESS – STAY OUT." In addition, portable sanitary facilities will be brought to the site and placed outside of the decontamination area.

8.4.2 Excavation

This subsection describes the site layout and control measures, safety measures, and excavation procedures that will be employed during construction of the corrective measure.

8.4.2.1 Site Layout and Control

As shown on Figure 9, all excavation will occur within the exclusion zone. Remediation waste will be staged at the south end of the site. Prior to leaving the site, vehicles and workers will pass through the decontamination area. These areas are surrounded by existing fencing that will be secured at the end of each work day. The existing site fencing will prevent unauthorized personnel or passersby from entering the work area.

8.4.2.2 Safety

All work will be performed in accordance with applicable OSHA regulations and the site-specific Health and Safety Plans prepared by URS and the selected excavation contractor. The *Contingency Plan*, provided as Appendix E, contains procedures that will be followed in the event of an emergency.

Dust monitoring will be conducted throughout the period of excavation. If dust levels exceed 100 $\mu g/m^3$ or dust is visible leaving the site, dust control measures will be

implemented. If dust levels exceed 150 $\mu g/m^3$, work will stop and dust control methods will be re-evaluated.

Excavation will be performed in accordance with applicable OSHA regulations. All excavations greater than 5 feet in depth will be barricaded upon completion of work in that area and barricades will be placed around active work areas at the end of the work day. Barricades will conform with OSHA standards and may include wooden barricades or stakes and tape.

8.4.2.3 Excavation Procedures

As discussed in Section 8.2.3, figures showing excavation layout, excavation order, and portions of the soil that will be segregated and tracked separately will be finalized after the results of the additional delineation, presented in Section 8.2.2, are available. Based on current site knowledge, URS has prepared preliminary drawings that depict the excavation areas. Figures 11 and 12 present the excavation layout for shallow and deeper soils, respectively.

Excavation Approach

Excavation will begin with the shallow areas. After each shallow area is excavated, post-excavation samples will be collected from the base and sidewalls of the excavation to verify that the cleanup objectives were met. By starting with the shallow areas, verification results can be obtained and possible need for additional soil removal can be evaluated. Specifically, the area immediately west of the building includes removal of shallow and deeper soils. By starting in this area, results of verification samples for the shallow excavation area will be available prior to commencing with the deeper excavations. This approach will allow additional excavation of shallow soils, if necessary, prior to excavation of deeper soils that may cause collapse of sidewalls and

mixing of soil. A detailed discussion of verification sampling is provided in Section 8.4.3.

Shallow Excavation

As shown on Figure 11, the large shallow area immediately west of the building will be excavated first. The soil in the southeast portion of this area, labeled "1" on Figure 11, contains the higher concentration of PCBs found at the site and will be excavated to two feet. The concentration of PCBs in this soil exceeds 50 mg/kg, which will require that the soil be managed as a TSCA waste. Therefore, this soil will be segregated from other soils to be excavated. The remainder of the soil in the large shallow excavation area west of the building is expected to be a non-TSCA, non-hazardous waste. This portion is labeled "2" on Figure 11 and will excavated to 1.5 feet. The dry well structures are anticipated to begin deeper than the 1.5 foot depth of the shallow excavation. However, if the structures are encountered during shallow excavation, they will be segregated as well.

The other shallow excavation areas (labeled "3") will be excavated next. The excavation depths in these areas will range from 1 to 2.5 feet. The soil in these areas is a non-TSCA waste.

As excavation in each area is completed, URS will establish sampling grids and collect the post-excavation soil samples (see Section 8.4.3). For the large area west of the building, verification samples will not be collected from the portions of area where deeper soils will be subsequently excavated and disposed.

Deeper Excavation

Excavation of soil at depth will not begin until the results of the verification sampling for the surrounding shallow excavation area are available and have been evaluated. If sufficient shallow soil has not been removed from the surrounding shallow area to meet the cleanup objective, the excavation plan will be re-evaluated and adjusted as needed.

The remainder of this section describes the excavation plan that will be implemented following verification of clean shallow soils.

The sequence of excavation for the deeper areas will be chosen based on discussions with the selected excavation contractor. A primary consideration during development of the excavation sequence is the need to segregate portions of the deeper soil. Figure 12 shows the deeper excavations and the soil that will be segregated based on previous analytical results. A portion of the excavation area contains concentration of PCBs greater than 50 mg/kg, and therefore will be managed as a TSCA waste. The dry wells will also be segregated because they may contain characteristically hazardous waste. The remainder of the soil in the deeper excavation areas is anticipated to be a non-TSCA, non-hazardous waste.

Previous analytical results show that soil in the area of the dry wells contains elevated concentrations of VOCs. However, the concentrations of VOCs detected are not expected to be high enough to constitute a characteristically hazardous waste. Analytical results from the boring placed through dry well #1, show that material at the bottom of the dry well (11-12 feet bgs) contains elevated concentrations of cadmium, chromium, and lead. The concentrations of these metals are high enough that the sludge may be a characteristic hazardous waste. Therefore, the sludge from the base of both dry wells will be segregated during excavation for characterization prior to making a final determination of waste disposal.

As shown on Figure 12, one of the deep excavation areas will be excavated to 15 feet bgs and therefore, will not require post excavation sampling, with the exception of four samples, two from the base of each dry well, to document the quality of soil left in place. The other two deep excavation areas do not extend to 15 feet and therefore will require collection of post-excavation verification samples. After excavation of the areas that do not extend to a depth of 15 feet is complete, URS will establish the sampling grid and collect verification soil samples from the base and sidewalls of the excavation.

Excavation Methods

Excavation will be in accordance with applicable OSHA regulations. Currently, GEPS plans to leave the selection of using sloping or benching for deeper excavations to the excavation contractor.

8.4.3 Post-Excavation Verification Sampling, Analysis, and Evaluation

Post-excavation samples will be collected from the base and sidewalls of excavated areas. As discussed in Section 8.2.2, GEPS proposes to substitute pre-excavation borings for some of the post-excavation samples. TSCA (40 CFR 761) requires collection of post-excavation samples based on a 1.5 meter (approximately 5 feet) square grid. A five-foot by five-foot grid will be applied to each face of each excavation area less than 15 feet bgs. Post excavation samples will be collected from the node of each grid. Figure 8 shows the pre-excavation borings and the anticipated post-excavation sampling grid.

Each soil sample will be assigned a unique ID based on the location of the sample. Each grid that is established will be named after the boring or location it represents., such as drum rack or HB-30. The grid lines that extend north-south will be assigned letters and the grid lines that extend east-west will be assigned numbers. The sample ID will be comprised of the grid name, the grid location, and depth below grade surface (in feet) that that the sample represents. Therefore, a soil sample collected from 1.5 feet below grade at the intersection of grid line B and grid line 2 near the former drum rack will be given the sample designation DR-B2-1.5.

8.4.3.1 Sampling Procedure and Analysis

This section describes the sampling methods, sample handling procedures, and the planned analysis.

Manual Collection of Soil Samples

Soil samples collected from the surface during the pre-implementation investigation or from the base or sidewalls of excavated areas may be collected using hand augers or stainless-steel trowels. Samples collected from the base of the deeper excavation will be collected from the bucket of the excavator or backhoe. The remainder of this subsection describes the equipment and procedures for soil sample collection with a hand auger or stainless-steel trowel and general soil sampling procedures.

The trowel or hand auger will be decontaminated, examined for cleanliness, and checked for defects or any need of repair prior to sampling. A description of the sampling area from which the sample is being taken, and other pertinent sample information will be recorded on a field soil boring log or in a field notebook.

The soil sample will be scooped up with the trowel and put into a stainless steel bowl. If using a hand auger, scoop sample from auger into the stainless steel bowl using a trowel. If the soil will be analyzed for VOCs, an aliquot of soil will be immediately transferred into the VOC sample containers. The VOC sample containers will be completely filled in order to minimize head-space in the containers. A second aliquot of soil will be immediately retained for head-space analysis using a PID. The remaining soil will be mixed (homogenized) in the bowl and then the remaining sample containers will be filled (grab samples).

The field observations and sample details will be recorded on a field soil boring log or in a field notebook. All soil sample locations less than four feet bgs will be marked on the ground. Identification materials and markings that will last until the end of the project will be used.

To prevent cross-contamination of samples, the field personnel will wear disposable gloves when collecting and handling samples. The gloves will be changed between

samples. The hand augers and stainless-steel hand trowels will be decontaminated between samples.

Quality assurance samples, including matrix spike/matrix spike duplicates, duplicate samples, equipment rinseate blanks, and trip blanks will be collected as necessary in accordance with the procedures described in the *Quality Assurance Project Plan (QAPP)*. Once sample containers are filled, they will be immediately placed in the cooler with sufficient sealed bags of ice or ice packs to maintain the samples at 4°C. The field sampler will indicate sample designation/location number in the space provided on the appropriate chain-of-custody for each sample. The sample custody procedures are also described in the *QAPP*.

Soil Sampling Using Geoprobe® Equipped with MacroCore® Samples

Soil borings will be advanced using a Geoprobe unit mounted to a truck or van. Macro Core open samplers will likely be used to collect the samples. These samplers have an open tube design and measure approximately two-inches in diameter (outer) by 44-inches long. The samplers will be fitted with a removable cutting shoe and disposable acetate liners. Each of the samplers will be fitted with a new acetate liner prior to collection of a sample. The acetate liner will be split open to collect the soil.

The length of sample recovery, percent recovery, and soil description, including odors will be recorded on the boring log. The soil samples obtained from the Macro Core open samplers will be collected and handled in a similar manner as the soil samples obtained manually.

Delineation of a potential contaminated zone within a boring will be based on the following field screening parameters:

- Discoloration or staining;
- Unusual odors or VOC measurements (PID);

- Unusual textures; and
- Presence of sludges or other anthropogenic features.

All acetate liners will be disposed after use at an appropriate off-site facility. Upon completion of sampling at each location, all sampling equipment will be decontaminated in accordance with the procedures described below.

Rinseate blanks will be denoted with a ARB≅ followed by the six digit date (i.e.,: RBYYMMDD).

Collection of Soil Samples from Backhoe Bucket

Post-excavation soil samples that are to be collected from depths greater than four feet below original grade will be collected from the backhoe or excavator bucket. The equipment operator will be directed to bring soil from the desired sampling location to the ground surface. The sampling location will be as close as feasible to the intended grid sampling location. If the soil near the grid is disturbed, the equipment operator will be directed to move the disturbed soil and collect the sample from the undisturbed soil beneath.

After the soil has been brought to grade, a clean trowel will be used to transfer soil from the bucket of the excavator to a clean stainless steel bowl or directly into the VOC sample container, if a sample is to be collected for VOC analysis. The soil sample will be collected from the interior of the bucket where soil has not touched the bucket itself and is minimally disturbed. The soil samples obtained from the backhoe or excavator bucket will be collected and handled in a similar manner as the soil samples obtained manually.

Collection of Waste Characterization Soil Samples

Waste characterization soil samples will be collected and handled in a manner similar to the soil samples obtained manually. However, waste characterization soil samples will composite, except for the sample for VOC analysis. The soil collected for the VOC

analysis will be a grab sample. The samples will be collected from the rolloff container. Soil from a minimum of three separate locations will transferred to a clean stainless steel bowl to be composited.

If a composite sample is needed for non-volatile constituent analysis, additional soil will be placed in a clean stainless-steel bowl. After removal of any stones, large twigs, or other vegetation, the sample will be thoroughly homogenized by mixing the sample in the bowl with a stainless-steel spoon. The sample will then be quartered in the bowl and each quarter then will be mixed separately, before finally mixing the entire sample again. The sample will then be placed in sample containers using a trowel for non-volatile constituent analysis. This type of sample, defined as a composite sample, will not be analyzed for VOCs.

Duplicate Samples

The analysis of blind duplicate samples provides a means of evaluating the relative precision of the sample collection and analytical procedures. An important factor in evaluating the analytical data from sample pairs is the homogeneity of the analyte within the sample matrix. Therefore, whenever possible, one will homogenize an aliquot from a discrete location or interval before the sample and duplicate are collected. However, VOC samples must never be homogenized in order to prevent the loss of VOCs. In general, the handling of VOC samples will be minimized to preserve the physical integrity of the VOC fraction. Duplicate samples will be prepared for each sample matrix at a rate of one duplicate per ten samples.

Duplicates of solid samples for VOC analysis will be obtained by alternately filling the sample containers for the sample and duplicate for VOC analysis with aliquots collected from the same discrete location or interval. Once samples for VOC analysis have been collected, the sample will be thoroughly homogenized. Following homogenization, the sample containers for the remaining parameters will be filled. Duplicates will be denoted with a ADUP≅ followed by the six digit date (i.e., DUP-MM/DD/YY).

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate (MS/MSD) samples provide a measurement of matrix effects, in which other sample components interfere with the analysis of the contaminants of interest. The laboratory will be supplied with sufficient sample volume in order to perform matrix spike and matrix spike duplicate analyses for each analysis. The MS/MD samples will be denoted with AMS≅ or AMSD≅ followed by the six digit date (i.e.,: MSYYMMDD). The COC will contain a notation explaining which sampling location the MS/MSD was obtained from.

Sampling Equipment Decontamination Procedures

Sampling equipment will be decontaminated in the laboratory or the field prior to site use and between sampling locations. The sampling device and equipment decontamination method will involve a non-phosphate detergent wash, tap water rinse, distilled/deionized water rinse, hexane rinse, air drying, and a second distilled/deionized water rinse.

Drilling tools will be steam cleaned between each drilling location to prevent cross-contamination. Decontamination will be conducted on the temporary decontamination pad. The decontamination water will be containerized for proper disposal.

Sample Handling and Analysis

All samples will be collected and handled in a manner such that sample agitation, cross-contamination, and contact with the atmosphere is reduced or kept to minimum. Field personnel will wear disposable gloves when collecting and handling samples.

As required, samples will be immediately preserved, and stored at 4EC until delivered to the laboratory. The samples will be kept cool at 4EC using insulated containers containing sufficient ice or ice packs. If ice is used, the ice will be double-bagged at a

minimum. VOC sample jars will be placed in resealable plastic bags prior to placement in coolers.

Analysis and Turnaround Time

Because proceeding with certain stages of the project (deep excavation, backfill) will be dependent on the analytical results of prior project stages, rapid turnaround time (TAT) will be requested for some samples. The following table summarizes the anticipated post-excavation sampling, analysis, and laboratory turnaround time.

Sampling Location	**Turnaround Time**	**Number of Samples**	**Analysis**
Post-Excavation Verification Samples			
Shallow Excavation West of Building	3 day TAT	124	PCBs
Other Shallow Excavation Areas	14 day TAT	101	PCBs
Deep Excavations	24 hour TAT	10	PCBs
Dry Well Soil Quality Samples			
Base of dry wells	3 day TAT	4	PCBs VOCs SVOCs

8.4.3.2 Evaluation of Post-Excavation Verification Sampling Results

The analytical results of the post-excavation verification sampling will be compared to the corrective measure cleanup objective of 1 mg/kg PCBs for soil less than 15 feet below ground surface. If the analytical results show that the cleanup objective has been met, work will continue as planned.

If the analytical results show that soil containing PCBs at concentrations greater than 1 mg/kg remains in place at less than 15 feet bgs, excavation will be continued until concentrations less than 1 mg/kg or 15 feet bgs has been reached.

8.4.4 Waste Handling

This section describes the waste handling procedures that will be used for the project. The majority of waste generated by this project will be excavated soil. The majority of the excavated soil will be a non-TSCA non-hazardous waste. The TSCA waste generated during the project will be stored, transported, and disposed in accordance with the applicable portions of 40 CFR §761. If characterization sampling demonstrates that a portion of the waste generated is a characteristic waste, that waste will be transported and disposed in accordance with hazardous waste regulations. Decontamination of equipment will generate a relatively small amount of liquid waste. The liquid wastes will be stored in drums and will be managed in a manner similar to the removed soil.

8.4.4.1 Storage of Excavated Material

We anticipate excavated material will be placed into rolloff containers that are lined with plastic sheeting. After being loaded, covers will be secured on the rolloff containers. Partially filled containers will be securely covered at the end of each work day. As removed material is placed in each container, it will be labeled with a sign "Remediation Waste – Pending Analysis" and dated. During contractor and waste disposal facility selection, GE may re-evaluate the use of roll-off containers for transportation of remediation waste.

Waste generated during the remediation will be removed from the site within 90 days of generation. TSCA waste will be removed from the site within the timeframe specified in TSCA regulations. However, if the waste characterization sampling results indicate that the material is a non-TSCA non-hazardous waste, the soils will be disposed as soon as possible, but may remain on site longer than 90 days.

8.4.4.2 Waste Characterization

The majority of the soil to be removed is expected to be non-TSCA, non-hazardous remediation waste. As discussed in Section 8.4.2, excavated soil will be segregated based on the waste type (non-TSCA non-hazardous, TSCA waste, potentially hazardous waste).

Existing site characterization data and additional data from the delineation program to will be used to characterize the concentrations of PCBs in soil for disposal purposes. However, GE may elect to collect additional grab samples from stockpiled soils and analyze them for PCBs by EPA Method 8082 to provide supplemental data to support/ensure proper management and disposal of soils.

The exact analyses required for waste characterization and the frequency of sampling will depend on the requirements of the selected disposal facilities. For the purpose of estimating the cost associated with implementing this corrective measure we assumed that one sample would initially be required for every three rolloff containers of each anticipated waste type and that each sample would be analyzed for TLCP VOCs by EPA Method 8260, TCLP SVOCs by EPA Method 8270, TCLP metals by EPA Method 6010, corrosivity (pH) by EPA Method 9040/9045, and reactivity by EPA Method 7.3, ignitability (flashpoint) by EPA Method 1010, and paint filter test by EPA Method 9095. The frequency of waste characterization sampling is expected to decrease after sufficient data has been generated to document contaminant levels and waste characterization.

8.4.4.3 Waste Transportation and Disposal

Based on previous analytical results, most of the waste generated by this corrective measure is expected to be non-TSCA, non hazardous remediation waste. As such, it will landfilled as a non-regulated waste. A portion of the waste, approximately 60 cubic yards, is expected to be a TSCA waste and will therefore be disposed at a TSCA landfill. A small portion of the waste, approximately 7 cubic yards, may possibly be classified as

a characteristic hazardous waste after the waste characterization sampling is complete. Wastes will be disposed based upon the characterization analysis performed.

All waste will be transported by licensed waste handlers to appropriately permitted facilities. Currently, waste disposal facilities have not been finalized.

8.4.5 Site Restoration

After the verification sampling results have been evaluated and the results demonstrate that the cleanup objectives have been met, the excavation areas will be backfilled and the area will be restored to approximate original grade. Prior to being brought to the site, a sample of the potential backfill will be analyzed for VOCs, SVOCs, PCBs, pesticides, and metals and confirmed to be clean. The results of this sampling will be included in the *Certification Report*.

8.5 POST-IMPLEMENTATION ACTIONS

This section describes the actions that will be taken after construction of the corrective measure is complete.

8.5.1 Decommission Groundwater Monitoring Wells

The results of the RFI and supplemental investigations indicate that groundwater has not been impacted site activities. In addition, modeling indicates that the constituents known to be present at the site are not present at sufficiently high concentrations to impact groundwater in the future. Because this corrective measure includes removal of the dry wells and nearby soil, it is anticipated that the soil, which suffered the greatest impacts from site activities will be removed. No threat to groundwater is anticipated. Therefore, there is no need to monitor groundwater quality in the future. After the corrective

measure is implemented, the post excavation sampling results will be discussed with USEPA and NMED. If post excavation sampling results verify that soil remaining at the site does not contain significantly greater concentrations of constituents than were identified during the RFI, the groundwater monitoring wells will be properly decommissioned after USEPA and NMED concur. Monitoring wells will be decommissioned in accordance with NMED *Monitoring Well Construction and Abandonment Guidelines*. The monitoring wells will either be removed and filled or the casing will be perforated and filled. After abandonment activities are complete, a letter report summarizing decommissioning method will be submitted to the Groundwater Pollution Prevention Section of NMED.

8.5.2 Construction Certification Report

After the corrective measure activities are completed, a *Construction Certification Report* that documents the corrective measure implementation will be prepared. The report will include a description of activities, sampling results, and copies of waste manifests. The report will include a clean closure equivalency demonstration that meets the requirements of 40 CFR 270.1 (c) (5) and (c) (6) and 20.4.1.00 NMAC. The report will also include certification by a professional engineer licensed in New Mexico.

8.5.3 Monitoring

As discussed previously, the corrective measure is intended to remove, in accordance with this plan, all soil at the site that has been impacted by site activities and that could pose a threat to human health or the environment. Therefore, neither long nor short term monitoring is anticipated to be required after completion of the corrective measure.

8.5.4 Progress Reports

GEPS will continue to submit monthly progress reports until the *Construction Certification Report* is accepted by NMED and USEPA. The monthly progress reports will include information regarding the status of the corrective measure implementation. In addition, the monthly progress reports will provide notification of modifications to the schedule if changes become necessary, such as the advent of unforeseen circumstances.

9.0 PROJECT SCHEDULE

A corrective measure implementation schedule is included in Figure 13. After approval of this *CMS Report*, the pre-implementation investigation will be conducted. We estimate that the investigation phase will last approximately two to four months for collection of soil samples and evaluation of the analytical results. After the pre-implementation investigation is completed the corrective measure design will be refined, prior to solicitation of bids from qualified contractors.

The monthly progress reports will include information regarding the status of the corrective measure implementation work in relation to the schedule. In addition, the monthly progress reports will provide notification of modifications to the schedule if changes become necessary, such as the advent of unforeseen circumstances.