ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Douglas A. Ducey
Governor

Misael Cabrera
Director

Via U.S. Mail

May 15, 2020
VRP 20-161

Berendo Property, a California general partnership, and Harrison Properties, L.L.C.
Attention: Mr. James Harrison
5112 North 40th Street, Suite 105
Phoenix, Arizona 85018

Re: Review of (revised) Non-Time-Critical Removal Action Work Plan
Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Suite 120 and 130
Phoenix, Arizona 85043
VRP Site Code: 513246-00

Dear Mr. Harrison:

The Arizona Department of Environmental Quality (ADEQ), Voluntary Remediation Program (VRP) has reviewed the following documents:

- (revised) *Non-Time-Critical Removal Action Work Plan* (the Work Plan), prepared by Wood Environment & Infrastructure Solutions, Inc. on behalf of Berendo Property, a California general partnership, and Harrison Properties, L.L.C. (Berendo/Harrison), and dated March 27, 2020
- *Response to ADEQ Letter Comments dated April 13, 2020*, sent by Pearson Law Group, LLC and dated April 28, 2020
- Email from Pearson Law Group, LLC dated May 13, 2020

The Work Plan proposes profiling, removal, and disposal of Cathode Ray Tube (CRT) glass stored in boxes and piles in addition to soil sampling. The VRP approves the Work Plan, incorporating Berendo/Harrison responses in the April 28, 2020 and May 13, 2020 correspondence.

Please submit the project-specific Health and Safety Plan for review and comment prior to commencement of field activities.

How to Respond

No response is necessary at this time. A final version of the Work Plan, incorporating Berendo/Harrison responses in the April 28, 2020 and May 13, 2020 correspondence, may be submitted for the VRP file at your convenience thereby ensuring submittal does not delay the start of field activities.

Please notify me via email when site activities begin. Please attached an updated schedule to the email.

Berendo/Harrison is responsible for obtaining and complying with any and all applicable permits for the work proposed.

The VRP understands Berendo/Harrison will be performing additional phases of work at the site including the removal of processed and unprocessed CRT glass from inside the building, decontamination of the

building, and additional drywell investigation and/or soil remediation, if necessary, based on laboratory analytical data collected in this phase of work. The VRP expects Berendo/Harrison to submit fully developed work plans for these next phases of work for VRP review and approval prior to initiation of those activities.

If you have any questions or comments, please feel free to contact me at 602-771-4847, toll-free at 1-800-234-5677, or osuch.nichole@azdeq.gov.

Sincerely,

Nichole Osuch

Nichole Osuch, PMP
Project Manager
Voluntary Remediation Program

cc: Mr. William Pearson, Pearson Law Group L.L.C. – via email
Ms. Sarah Sanz, The Sanz Law Firm P.L.L.C. – via email

PEARSON
LAW GROUP

William W. Pearson
3509 E. Shea Blvd., Suite 117
Phoenix, Arizona 85028
602.237.5405
wink@pearsonlg.com

January 9, 2020

Nichole Osuch, Project Manager
Voluntary Remediation Program
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007
osuch.nichole@azdeq.gov

Re: Removal Action Work Plan for Exterior CRT Material
Berendo/Harrison 59th Avenue Warehouse
435 South 59th Avenue
Phoenix, Arizona 85043
VRP Site Code: 513246-00

Dear Nichole,

In compliance with the Arizona Department of Environmental Quality (ADEQ), Voluntary Remediation Program (VRP) request, stated in your letter dated December 9, 2019, and in compliance with A.R.S. § 49-175, Berendo Property and Harrison Properties (Berendo/Harrison) hereby submit their Removal Action Work Plan for CRT material located on the exterior of the 59th Avenue Warehouse located at 435 South 59th Avenue, Phoenix, Arizona 85043 (Work Plan). As requested, a completed Voluntary Remediation Program Work Plan Checklist accompanies the Work Plan.

Because the holidays caused some unplanned review and approval delays, this Work Plan is being submitted by email attachment. Our consultants are preparing one bound hard copy, one unbound hard copy and one compact disc as requested which will be delivered to you as soon as they are prepared, hopefully tomorrow. I called you to discuss this and some related matters but your voice mail says you are out of your office until Monday, January 13, 2020.

As we discussed recently on the phone, Berendo/Harrison will be submitting work plans at this facility in three phases – 1) removal of the exterior CRT material; 2) removal of the interior intact CRT gaylord boxes; and, 3) removal of the interior CRT material. The three phases are necessitated because information generated in each phase will be incorporated into the later phase(s). The interior work cannot start until a significant portion, if not all, of the exterior material is removed for access, trucking logistics and sampling. The interior intact CRT gaylord boxes need to be removed for space prior to

interior CRT material stabilization and removal. We expect to submit the sequential work plans in fairly quick succession.

Berendo/Harrison want to complete this first phase Work Plan, and all three work plans, as efficiently and cost effectively as possible. This Work Plan is virtually identical to the work plan implemented by ADOT on its exterior CRT material so my clients are hopeful that ADEQ/VRP can review and approve the Work Plan expeditiously so the actual field work can proceed soon. We would like to meet with you and discuss how various steps, like agency review and the start of the public comment period, might be compressed and/or accelerated to enable us to proceed with the next phases.

Because there are external legal issues associated with a project like this, the Work Plan is submitted without prejudice to, and should not be deemed a waiver of, any of the positions taken by Berendo/Harrison in its letter to the ADEQ VRP Program dated August 27, 2019, or in any other prior correspondence with ADEQ. Harrison/Berendo expressly reserves all other rights, claims, and defenses relating to this matter.

Please contact me on your return at your earliest convenience so we can discuss next steps in this important project.

Regards,

Wink Pearson
Counsel for Berendo/Harrison

CC: Scott Green

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name:	Closed Loop 59th Avenue Warehouse	VRP Site Code:	513246-00
Volunteer/Applicant Name:	Berendo Property and Harrison Properties, L.L.C		
Volunteer/Applicant Email Address and Phone:			
Authorized Agent (AA)/Consulting Company:	Pearson Law Group LLC		
AA/Consultant Email Address and Phone:	wink@pearsonlg.com, 602-237-5405		

Reference	Summary of Statutory Requirement (please review all statutes in their entirety to ensure compliance)	Page(s) Where Addressed in Work Plan (write N/A if not applicable)	VRP Use Only
§49-175A.1	Summary of existing site characterization and assessment information; information regarding any remediation previously conducted; copies of referenced reports not previously submitted;	Section 1.1, Pg 1 & Section 1.2 Pg 2	☐
§49-175A.2	If the site has not been characterized, a plan to conduct site characterization and a schedule for completion.	Section 2.4, Pg 7	☐
§49-175A.3.a	If site characterization is completed, a description of how the remediation will comply with §49-175B ("Work Plans") and how the completion of remediation will be verified. A schedule for completion must be included.	N/A	☐
§49-175A.3.b	If site characterization is completed, the work plan may provide for the remediation to be conducted in phases or tasks. A schedule for completion must be included.	N/A	☐
§49-175A.4	Schedule for submission of progress reports.	Appendix B	☐
§49-175A.5	A proposal for community involvement as prescribed by §49-176 ("Community Involvement Requirements")	Section 5.0, Pg 19	☐
§49-175A.6	If known, a list of institutional or engineering controls necessary during remediation and after completion of the proposed remediation to control exposure to contaminants.	Section 2.1.1 through 2.1.3, Pg 3-4 and Section 2.1.6, Pg 5	☐
§49-175A.7	A proposal for monitoring during remediation and after the remediation if necessary to verify whether the approved remediation levels or controls have been attained and will be maintained.	Section 2.4, Pg 7	☐
§49-175A.8	A list of any permits or legal requirements known to apply to the work or already performed by the applicant.	Section 2.1.2 through Section 2.1.4 Pg 4	☐
§49-175A.9	If requested by the department, information regarding the financial capability of the applicant to conduct the work identified in the application. *(IF APPLICABLE)*	N/A	☐

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name: Closed Loop 59th Avenue Warehouse VRP Site Code: 513246-00

Reference	Summary of Statutory Requirement (please review all statutes in their entirety to ensure compliance)	Page(s) Where Addressed in Work Plan (write N/A if not applicable)	VRP Use Only
§49-175B	Remediation levels or controls for remediation conducted pursuant to this article shall be established in accordance with rules adopted pursuant to §49-282.06 unless one or more of the following applies: see §49-175B.1 through §49-175B.4, below.	Section 1.3 & 1.4 Pg 2	☐
§49-175B.1	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of contaminated soil comply with §49-152 and the rules adopted.	Section 1.3 & 1.4 Pg 2	☐
§49-175B.2	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of landfills or other facilities that contain materials that are not subject to §49-152 (i.e.: asbestos) do not exceed a cumulative excess lifetime cancer risk between $1X10^{-4}$ to $1X10^{-6}$, and a hazard index of no greater than 1.	N/A	☐
§49-175B.3	The applicant demonstrates that on achieving remediation levels or controls for a source or potential source of contamination to a navigable water, the source of contamination will not cause or contribute to an exceedance of surface water quality standards, or if a permit is required pursuant to 33 United States Code §1342 for any discharge from the source, that any discharges from the source will comply with the permit.	N/A	☐
§49-175B.4	The applicant demonstrates that, on achieving remediation levels or controls for a source of contamination to an aquifer, the source will not cause or contribute to an exceedance of aquifer water quality standards (AWQS) beyond the boundary of the facility where the source is located.	Section 1.4 Pg 2	☐
§49-175C	The VRP may waive any work plan requirement under this section that it determines to be unnecessary to make any of the determinations required under §49-177. *If any waivers are requested in the Work Plan or have been previously requested and approved by the VRP, cite them in the Work Plan, including a citation of the statute for which the waiver applies.*	N/A	☐

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name: Closed Loop 59th Avenue Warehouse VRP Site Code: 513246-00

To support the prerequisites established by A.R.S. §49-177 and §49-180, the VRP expects certain documentation to accompany a Work Plan. The following provides a list of attachments/exhibits which are recommended for submittal with a Work Plan to provide the information required by the statutes.

Work Plan Information	Title of Figure/Table/Attachment/Exhibit Where Requested Information is Cited (write N/A if not applicable)	Figure/Table/ Attachment or Report Page Number (write N/A if not applicable)	VRP Use Only
Site Location Map *(topographic or aerial)*	Vicinity Map	Figure 1	☐
Site Map *(to scale)*	Site Map	Figure 2	☐
Historical Sampling Data Table	N/A	N/A	☐
Historical Sample Location Map (to scale)	N/A	N/A	☐
Proposed Sample Location Map (to scale)	Soil Characterization Sampling Location Map	Figure 5	☐
Sampling and Analysis Plan (includes Field Sampling Plan & Quality Assurance Plan)	Field Sampling Plan, Quality Assurance and Quality Control	Section 3.0, Pgs 7 - 15	☐
Proposed Remediation System Location Map	Cathode Ray Tube Exterior Storage Layout	Figure 3	☐
Proposed Remediation System Layout (Design Drawings)	Haul Route and Equipment Staging Area	Figure 4	☐
Schedule for Implementation of Project Activities* (Gantt Style Chart)	Project Schedule	Appendix B	☐
*Project Activities are defined in A.R.S. §§49-175A.2 through 49-175A.4, and 49-176A.2 (Community Involvement).			
Proposed Language for Public Notification of Remediation (i.e.: example signage)	NOTICE OF AVAILABILITY AND 30-DAY PUBLIC COMMENT PERIOD	Appendix C	☐
Plan for Investigative Derived Waste (IDW)	Investigation-Derived Waste Disposal	Section 3.10, Pg 15	☐
Evaluation of Remedial Alternatives (i.e: for Feasibility Study Work Plan)	N/A	Summarized in Section 1.1	☐

DOES THE WORK PLAN PROPOSE IMPLEMENTING SITE-SPECIFIC REMEDIATION LEVELS?

Yes	No
☐	☑

DOES THE WORK PLAN PROPOSE EVALUATION OF BACKGROUND LEVELS?

Yes	No
☐	☑

NOTE: When reports are submitted which document any type of sampling activity, the submittal of Electronic Data per ADEQ's *Groundwater Data Submittal Guidance (V3.4)* is strongly recommended.

wood.

NON-TIME-CRITICAL REMOVAL ACTION WORK PLAN
EXTERIOR CATHODE RAY TUBE MATERIAL
LOCATED AT THE CLOSED LOOP 59TH AVENUE WAREHOUSE
435 SOUTH 59TH AVENUE
PHOENIX, ARIZONA 85043
VRP SITE CODE: 513246-00

Prepared for:
Berendo Property and Harrison Properties, L.L.C.
5112 North 40th Street Suite 105
Phoenix, Arizona 85018

Submitted by:
Wood Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

January 9, 2020

Project No. 14-2018-2030

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LIST OF ACRONYMS AND ABBREVIATIONS

°C	Degrees Celsius
%	percent
%R	Percent recovery
59th Avenue Warehouse	former Closed Loop warehouse located at 435 South 59th Avenue
A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADHS	Arizona Department of Health Services
ADOT	Arizona Department of Transportation
AZPDES	Arizona Pollutant Discharge Elimination System
Berendo / Harrison	Berendo Property and Harrison Properties, L.L.C.
BTEX	benzene, toluene, ethylbenzene, and xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
Closed Loop	Closed Loop Recovery and Refining
COC	Chain-of-Custody
CRT	cathode ray tube
ft	foot, feet
ft^2	square feet
GPL	Groundwater Protection Limit
HASP	Health and Safety Plan
IDW	investigation-derived waste
LCS	laboratory control sample
mg/L	milligrams per liter
mg/kg	milligrams per kilogram
MS	matrix spike
MSD	matrix spike duplicate
MT2	Metals Treatment Technologies, LLC
NFA	No Further Action
NOI	Notice of Intent
PAHs	polycyclic aromatic hydrocarbons
PPE	personal protective equipment
QA	quality assurance
QC	quality control
RAO	removal action objective

RCRA	Resource Conservation Recovery Act
RPD	Relative Percent Difference
SRL	Soil Remediation Level
SWPPP	Storm Water Pollution Prevention Plan
TCLP	Toxicity Characteristic Leaching Procedure
Toxicity Characteristic	Maximum Concentration of Contaminants for Toxicity Characteristic
USEPA	U.S. Environmental Protection Agency
VOCs	volatile organic compounds
VRP	Voluntary Remediation Program
Wood	Wood Environment & Infrastructure Solutions, Inc.
Work Plan	Non-Time-Critical Removal Action Work Plan
yd^3	cubic yard

1.0 INTRODUCTION

The purpose of this Non-Time-Critical Removal Action Work Plan (Work Plan) is to describe the approach for the removal and disposal of cathode ray tube (CRT) material located on the exterior of the former Closed Loop Recovery and Refining (Closed Loop) processing center and warehouse located at 435 South 59th Avenue in Phoenix, Arizona (59th Avenue Warehouse) (the Site) (**Figure 1** & **Figure 2**).

Regulatory oversight for the scope of work presented by this Work Plan is being provided by the Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP). The 59th Avenue Warehouse was accepted in the ADEQ VRP Program on May 23, 2019. The VRP will be responsible for regulatory review and approval of project documents and issuance of a Letter of No Further Action (NFA) upon completion of the scope of work and request by the Property Owners, Berendo Property and Harrison Properties, L.L.C. (Berendo / Harrison). The VRP Site Code is 513246-00. This Work Plan has been prepared in general accordance with Arizona Revised Statutes §49-175.

1.1 Background

The 59th Avenue Warehouse was leased and operated by Closed Loop, a former processor of CRT television and computer monitors. The CRT television and computer monitors were processed and the resulting material (i.e. glass and scrap metal components) were boxed or stockpiled at the 59th Avenue Warehouse. CRT material is currently stored in gaylord boxes and large stockpiles on the exterior of the warehouse. ADEQ has requested that the CRT material be removed from the Site and properly disposed. Sampling and laboratory analysis performed of the CRT material indicates that a portion of the CRT material would be considered hazardous waste if disposed off-site.

An abbreviated Removal Action Alternative Evaluation (Wood Environment & Infrastructure Solutions, Inc. [Wood], 2019) was performed in general accordance with current U.S. Environmental Protection Agency (USEPA) guidance for conducting non-time-critical removal actions under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of the evaluation was to develop and evaluate removal action objectives (RAOs) for the CRT material and potentially lead-impacted soils that may pose unacceptable risks on the exterior of the 59th Avenue Warehouse. Based on the comparative analysis of the removal action alternatives, the recommended action was Alternative 3 – Waste Segregation and Off-Site Disposal. In Alternative 3, the CRT material would be segregated and batch tested using the Toxicity Characteristic Leaching Procedure (TCLP) method to determine if concentrations of leachable lead are present in the CRT material. If leachable lead concentrations in the CRT material exceed the Maximum Concentration of Contaminants for Toxicity Characteristic (Toxicity Characteristic) of 5.0 milligrams per liter (mg/L) for lead, the material will be classified as hazardous waste and will be transported and disposed off-site at a Resource Conservation Recovery Act (RCRA)-permitted Subtitle C landfill as hazardous waste in accordance with local, state and federal requirements. CRT material with leachable lead concentrations less than the Toxicity Characteristic of 5.0 mg/L for lead will be classified as non-hazardous waste and will be transported and disposed of off-site at a Subtitle D landfill. CRT-impacted soil will be characterized and disposed off-site at a Subtitle D landfill if concentrations of lead in soil do not exceed the Toxicity Characteristic of 5.0 mg/L for lead.

The process of CRT material waste segregation and off-site disposal was previously implemented by the Arizona Department of Transportation (ADOT) for approximately 5,750 cubic yards (yd^3) of stockpiled CRT material located on Maricopa County Assessor's Parcel Number 104-19-003E located at 445 South 59th Avenue in Phoenix, Arizona. This CRT material originated from Closed Loop. ADEQ agreed to allow ADOT to dispose of the CRT material as non-hazardous waste as long as the following criteria were met: 1) the

CRT material is first placed into waste roll-off containers and every waste roll-off container of CRT material is sampled and analyzed using the TCLP method; 2) lead concentrations are below the Toxicity Characteristic of 5.0 mg/L; and, 3) the landfill accepts the waste profile and CRT material as non-hazardous waste. Loading, transportation and disposal of stockpiled CRT material at the ADOT parcel was conducted in accordance with ADEQ criteria and was completed in 2018.

1.2 Initial Site Characterization

An initial inventory assessment was conducted in January 2019 to refine mass estimates of CRT material at the Site. As a part of inventory assessments at the Site, an aerial drone survey was conducted to estimate the volume of CRT material staged on the exterior of the 59th Avenue Warehouse. The Survey Report is included in **Appendix A**. As shown on **Figure 3**, the drone survey resulted in the volume calculations for eighteen individual areas of stockpiled CRT material to determine a total volume estimate of approximately 8,945 yd^3 of CRT glass. An estimated 28,623,000 pounds (14,311.5 tons) of processed CRT material was estimated from the volume of CRT material that is present. The mass of stockpiled CRT material is estimated to be 22,426,000 pounds (11,213 tons) and the mass of CRT material contained within large boxes is estimated to be 6,197,000 (3,098.5 tons).

Sampling and analysis of the exterior CRT material revealed that concentrations of leachable lead range from <0.1 mg/L to 12.2 mg/L (Metals Treatment Technologies, LLC [MT2], 2019). The CRT material on the exterior of the 59th Avenue Warehouse is primarily staged on asphalt or concrete ground surfaces. A limited portion of the CRT material is staged on bare soil east of the warehouse and spilled CRT material is present on the undeveloped portion of the Site. Based on a review of aerial images, an estimated 62,000 square feet (ft^2) of unpaved land surface may have been impacted by CRT material.

1.3 Removal Action Objectives

The following RAOs are identified for the project:

- Prevent human exposure to lead in CRT material and soils that would pose an unacceptable health risk under current or future potential land uses and reduce potential impacts to groundwater.
- Remove CRT material from the Site to render the property available for future commercial leasing opportunities.

1.4 Chemical-Specific Removal Action Goals

The chemical-specific removal action goals applicable for NFA are specified in **Table 1**. The Arizona Residential Soil Remediation Level (SRL) for lead is 400 milligrams per kilogram (mg/kg). In the absence of site-specific soil data, the minimum Groundwater Protection Limit (GPL) for lead is 290 mg/kg as shown in **Table 1**. The minimum GPL is lower than the Arizona Residential SRL and is identified as the removal action level unless an alternate GPL is calculated. Following removal of the CRT material and the collection of sufficient site-specific data to determine the ratio between the total metals concentration and leachate concentration, an alternative GPL may be calculated using ADEQ's leachability guidance policy (ADEQ, 1996).

Table 1 Removal Action Goals for Soil

Chemical	Arizona Residential SRL[1] Non-Carcinogen (mg/kg)	Minimum Groundwater Protection Limit [2] (mg/kg)
Lead	400	290

Notes:
1 = Arizona Administrative Code Title 18, Chapter 7, Appendix A, effective May 5, 2007
2 = A Screening Method to Determine Soil Concentrations Protective of Groundwater Quality (ADEQ, 1996)
mg/kg = milligrams per kilogram
SRL = Soil Remediation Level

2.0 SCOPE OF WORK

The scope of work for this project is described in the table and following subsections.

Table 2 Scope of Work

Scope of Work Phase	Phase Description	Phase Scope Items
Phase 1	Planning, Permitting, and Site Preparation	• Preparation of a, site-specific HASP, Maricopa County Dust Control Plan and SWPPP • Obtain Generator ID, AZPDES Construction General Permit, Maricopa County Dust Control Permit • Utility Clearance • Equipment Mobilization
Phase 2	CRT Glass Removal, Transport and Disposal	• Remove, load, transport and dispose of an estimated 14,311.5 tons of CRT material
Phase 3	Soil Removal, Transport and Disposal	• Surface scrape, load, transport and dispose of up to 500 tons of soil visually impacted with CRT material
Phase 4	Post-Removal Soil Characterization Sampling	• Collection and analysis of soil samples within soil excavation areas
Phase 5	Reporting	• Monthly Progress Reporting • Removal Action Completion / Site Characterization Report

The removal actions will be performed by Berendo / Harrison's contractor (the Contractor). Waste characterization sample collection, data validation and reporting will be conducted by Wood, Berendo / Harrison's environmental consultant.

2.1 Phase 1: Planning, Permitting, and Site Preparation

2.1.1 Health and Safety Plan

A project-specific health and safety plan (HASP) will be prepared and will include specific requirements for the sampling and removal activities. The HASP will be kept on-site and will address the health and safety hazards of each task conducted by employees for this project, including the requirements and procedures for worker protection (per 29 Code of Federal Regulations [CFR] 1910.120). The HASP will be developed based on the hazards known or suspected to be present, specifically as they relate to the work to be conducted by on-site employees. Air quality monitoring will be performed during the remedial activities in accordance with the project HASP. Air monitoring is designed to identify and quantify airborne contaminants, evaluate the impact of Site activities on the worker, and reduce or eliminate the migration of

dust. Real-time air monitoring will be required during removal activities, appropriate levels of personal protective equipment (PPE) and decontamination procedures will be determined using monitoring data.

2.1.2 Arizona Pollutant Discharge Elimination System Construction General Permit

The removal action will not result in a discharge of process waters to waters of the United States, and therefore, will not require coverage under an individual Arizona Pollutant Discharge Elimination System (AZPDES) permit. If the anticipated area of disturbance at the Site, including excavation, equipment staging, and other earth disturbing activities, during the remedial activities exceeds 1 acre, a general construction permit would be required per Arizona Administrative Code (A.A.C.) R18-9-A905 and 40 CFR 122.26(b)(15), and a Notice of Intent (NOI) must be submitted to ADEQ. The anticipated total area of disturbance is greater than one acre, therefore, an NOI will be required for this remediation project.

Additionally, Wood will prepare a Storm Water Pollution Prevention Plan (SWPPP), which will be implemented in accordance with good engineering practices and identifies potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the Site. The SWPPP ensures implementation of control measures that will be used to reduce pollutants in stormwater discharges from the project Site, assures compliance with the terms and conditions of the 2013 Arizona Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction Activity to Waters of the United States (AZG2013-001) (ADEQ CGP), and identifies the responsible party or parties for on-site SWPPP implementation.

2.1.3 Maricopa County Air Quality Department Dust Control Permit

The Contractor will prepare and submit a dust control permit application and dust control plan to obtain a Dust Control Permit from the Maricopa County Air Quality Department prior to the commencement of removal actions. The dust control plan will include specific primary, contingency, and required dust control measures. Removal actions will be conducted in accordance with the dust control plan for the duration of the field activities.

The Contractor will be responsible for performing all dust control during the removal action. The effectiveness of dust control will be determined by the air monitoring results. The primary engineering control for controlling dust on the Site will be the use of water to wet the areas of disturbance, both the traffic area as well as the areas being excavated for disposal. A water truck or trailer will be utilized to control dust generation during glass disturbance and in consolidation cells and stockpiles. To ensure engineering controls are properly implemented by the application of water for dust suppression air monitoring for particulate levels will be conducted using a real-time dust monitor. Wind speed and direction during removal actions will be monitored periodically

2.1.4 Hazardous Waste Requirements

Due to the potential volume of characteristic RCRA waste that may be generated from the Site, Berendo/Harrison will be required to obtain an USEPA ID Number as a Large Quantity Generator. An initial notification will be submitted to ADEQ to obtain the facility USEPA ID number. It is anticipated that more than 1,000 kg/month (2,200 pounds/month) of non-acute hazardous waste will be removed from the Site as a part of short-term remedial actions. The RCRA USEPA ID Number will be used on transport manifests as required under Subtitle C of RCRA.

2.1.5 Utility Locating

The Contractor will contact Arizona 811 at least 72 hours in advance of initiating removal activities for public utility marking. Upon arrival at the Site, utility markings will be checked against a list of companies notified to confirm that the appropriate utilities have been identified and marked. As Arizona 811 typically will not mark utilities on private property, a private utility locator will be mobilized to the Site to mark utilities in the areas of soil removal. Arizona 811 will be contacted to revalidate markings every 14 working days through the duration intrusive activities, if applicable.

2.1.6 Mobilization and Site Preparation

The Site will be accessed from 59th Avenue through the southwestern corner of the property. **Figure 4** depicts the proposed haul route, security fencing, bin staging area and consolidation areas. The following activities will be performed as part of mobilization and site preparation:

- Areas specified for truck access and egress, decontamination of equipment, equipment staging, the loading and unloading of materials, and transport bin staging will be defined.
- A construction trailer with diesel generator, portable toilets and hand wash stations will be staged in a support area which will include a heater, air conditioner, lighting and electrical for Contractor and Wood personnel.
- Equipment mobilization will include excavators, loaders, water truck, water holding tank, sampling equipment, air monitoring equipment, and health and safety equipment.
- As part of community involvement activities required by A.R.S. Section 49-176(A)(2)(a), signage will be displayed on-site during removal activities and posted on the main entry gate on the west side of the Site.
- Installation of additional fencing and lockable gate along the western boundary of the Site. The additional fencing is proposed for installation prior to the start of the removal actions. Once the additional fencing is complete, the entirety of the Site will be located within a secured area. The fencing will serve to limit Site access and potential exposure to contaminants during removal actions.
- Implementation of the SWPPP, which may include run-on/runoff control measures that may include silt fences, hay bales, and silt curtains.

2.2 Phase 2: CRT Material Removal, Transport and Disposal

CRT material removal will be divided into two processes: (1) removal and disposal of boxed material as hazardous waste and (2) waste characterization, removal and disposal of piled CRT material. These two processes will be conducted concurrently throughout the removal action. In general, the removal of the CRT material will follow the number sequencing of the stockpiled and boxed areas denoted in **Figure 3**. This sequencing is proposed to maximize the potential for utilization of bay doors on the northern portion of the warehouse for future removal actions. The following sections detail the procedures for waste handing, characterization, transportation and disposal of CRT material. The

2.2.1 Disposal of Boxed CRT Material as Hazardous Waste

The Contractor will dispose of approximately 6,197,000 (3,098.5 tons) of boxed CRT material. The locations of the boxed CRT material are shown on **Figure 3**. As depicted in **Figure 3**, boxed CRT material is located to the west, north and east of the 59th Avenue Warehouse in designated areas denoted as Pile 1, Pile 3, Pile 5, Pile 7, Pile 10, Pile 11, Piles 13 through 16 and collocated with stockpiled CRT material in Pile 2 and Pile 17. The Contractor will use an excavator, loader or where appropriate a forklift, to load the CRT material

directly into end dump trucks for transport. Each waste shipping container will be fully lined with six (6) mil polyethylene liner and covered with solid, vinyl, dust free roll top covers that completely overlap the top of the truck on all sides. Wood will collect discrete samples of the CRT material to be analyzed for the Eight RCRA Metals by USEPA Method 1311 TCLP to develop a hazardous waste profile. The Contractor will develop a waste profile for the CRT material and provide waste manifests to document the shipment of truckloads from the Site. Uniform Hazardous Waste Manifests (USEPA Form 8700-22) will be prepared by the Contractor for approval by Berendo/Harrison prior to transportation. Approved manifests will require signature by Berendo/Harrison authorized personnel prior or the day of transport. Copies of manifests, bills of lading, and weight tickets will be managed by Wood and presented in the Removal Action Completion Report.

CRT material that contains lead in excess of the Toxicity Characteristic of 5.0 mg/L will require management as a RCRA hazardous waste carrying waste code D008 and will be properly transported in placarded and permitted vehicles and shipped to U.S. Ecology Nevada Landfill in Beatty, Nevada. US Ecology treats the waste using a stabilization process that de-characterizes the waste so that it meets the Land Disposal Restrictions and can be disposed of in a non-hazardous subtitle D landfill. Off-site disposal of materials will be performed in accordance with applicable Federal, state, and local regulations pursuant to 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste ([45 FR 33142, May 19, 1980, as amended at 70 FR 10818, Mar. 4, 2005; 81 FR 85724, Nov. 28, 2016]) and 40 CFR Part 266, Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities (50 FR 666, Jan. 4, 1985).

If boxed CRT material appears to be visually consistent with piled CRT materials, the contents of the boxes may be placed in 20 to 25 yd^3 capacity roll-off containers that are staged on the Site and will be characterized for disposal consistent with the procedures described Section 2.2.2.

2.2.2 Waste Characterization and Disposal of CRT Material as Non-Hazardous or Hazardous Waste

The Contractor, in conjunction with characterization efforts performed by Wood, will dispose of an estimated 22,426,000 pounds (11,213 tons) of stockpiled CRT material. The locations of the stockpiled CRT material are shown on **Figure 3**. As shown in **Figure 3**, stockpiled CRT material is located to the north and east of the 59th Avenue Warehouse in designated areas denoted as Pile 2, Pile 4, Pile 6, Pile 8, Pile 12, Pile 17, and Pile 18. The Contractor will use an excavator to remove CRT material from the stockpiles. A wheel loader will take the CRT material from the excavator and placed in 20 yd^3 capacity roll-off containers that will be staged on the eastern portion of the Site. The contents of each container will be sampled by Wood for the Eight RCRA Metals by USEPA Method 1311 TCLP on standard or an expedited 72-hour turn-around time. Following receipt of analytical results, each container will be categorized for disposal as hazardous or non-hazardous waste based on the characterization sample result value for the Eight RCRA Metals compared to the Toxicity Characteristic. Following receipt and verification/validation of analytical results, waste containers will be labeled as hazardous or non-hazardous waste. Labels will be verified by Wood personnel prior to consolidation for transport. The Contractor will develop a waste profile for the CRT material using representative analytical data and provide waste manifests to document the shipment of truckloads from the Site.

Roll-off containers will be emptied, and the contents will be placed into a corresponding temporary consolidation cell. CRT material that is placed in the temporary consolidation cell will be directly loaded into end dumps trucks for transport to the appropriate hazardous or non-hazardous waste facility to maximize transportation efficiency. Each temporary consolidation cell will initially consist of an approximately 20-ft by 15-ft area located on the asphalt or concrete within the Site. Consolidation cell areas may increase to

accommodate additional CRT volume as daily waste disposal volumes are expected to increase through the duration of the removal action. Waste cells will be enclosed on three sides with concrete jersey barriers and will be clearly labeled with the appropriate waste characterization (**Figure 4**).

Waste will be transported and disposed of at the appropriate hazardous or non-hazardous waste facility based on the classification of waste. Hazardous waste is proposed to be disposed of at US Ecology Nevada, Beatty, Nevada in accordance with the procedures defined in Section 2.2.1, and non-hazardous waste will be disposed of at Republic Services Southwest Regional Landfill in Buckeye, Arizona.

2.3 Phase 3: Soil Removal, Transport and Disposal

Following removal of the boxes and piles of CRT material, the Contractor will perform a surface scrape to remove soil visually impacted with CRT material, located on the northern and eastern portion of the Site. The northern area proposed for removal of visually impacted soil includes the area north of Piles 2, 6, 7, 8, 9, 13 and 14. The eastern areas proposed for removal of visually impacted soil includes the area east of Pile 9, beneath Pile 16 and 18, beneath portions of Pile 17 and the triangular shaped dirt lot on the eastern portion of the Site where spilled CRT material was observed. **Figure 5** depicts the areas of proposed areas for removal of soil visually impacted with CRT material. The Contractor will use a loader to surface scrape and remove up to an estimated 62,000 ft^2 of unpaved land surface that may have been impacted by CRT material to a depth of three (3) inches for a volume of approximately 575 yd^3. A wheel loader will place the removed soil into roll-off containers. The containerized soil will be sampled using procedures consistent with the CRT waste characterization sampling of roll-off containers, profiled, transported and disposed as hazardous or non-hazardous waste in accordance with the procedures specified in Section 2.1 based on laboratory results. It is estimated that 500 tons of soil with visible CRT material will be removed from the Site.

2.4 Phase 4: Soil Sampling Characterization

Following the completion of removal of all CRT material and soil visually impacted with CRT material, the bare soil areas where CRT material was stored will be divided into 25-ft by 25-ft grid cells (**Figure 5**). Wood will collect one discreet soil sample from each grid cell for analysis by USEPA Methods 6010C for lead. The samples will be collected from approximately 0 to 4 inches below grade. No samples are proposed to be collected beneath intact asphalt or concrete where CRT material was staged. Based on the analytical results, additional excavation may be required to achieve the removal action goals.

2.5 Phase 5: Drywell Investigation

Following the completion of removal of all CRT material and soil visually impacted with CRT material, one sediment sample from the on-site drywell settling chamber(s) will be collected. These samples will be submitted to an Arizona Department of Health Services (ADHS) approved laboratory for analysis of for volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX) by Method EPA 8260B, polycyclic aromatic hydrocarbons (PAHs) by Method 8270C-SIM, and for 13 priority pollutant metals plus barium (total metals) by EPA Method 6000 and 7000 series. These analyses are in accordance with the recommendations in the ADEQ Drywell Investigation Guidelines. Depending on construction details for the on-site drywell system and results of the sampling, additional activities will likely be needed. The drywell may need to be registered with the State of Arizona and remediation may be required. It is anticipated that multiple soil boring will be advanced in the immediate vicinity of the drywell system for registration and/or clean closure.

3.0 FIELD SAMPLING PLAN, QUALITY ASSURANCE AND QUALITY CONTROL

This section provides general information regarding the methods that will be employed for various sampling activities to be completed during site activities. Sampling will be conducted for waste profiling and soil characterization. A summary of analytical methods, sample containers, preservatives, and holding times are provided in **Table 3**.

The following subsections provide details regarding sample collection and management, quality assurance (QA) and quality control (QC), surveying of sample locations, decontamination of non-disposable sampling equipment, and investigation-derived waste (IDW) management.

3.1 Collection of Samples

3.1.1 CRT Glass for Waste Characterization

CRT material will be sampled in order to determine if the CRT material exhibit a hazardous waste characteristic under 40 CFR part 261, subpart C. Each CRT waste characterization sample will be composed of one, six-part areal composite sample collected from each waste container (i.e. 20-yard roll-off). The sampler will lay out a grid of six individual cells at the surface of each roll off. A total of six individual samples, of equal volume, will be collected at a rate of one grid cell. Individual samples will be collected with a decontaminated or disposable scoop from the roll-off containers to a maximum depth of six inches below the surface of the CRT material. The waste unit container is presumed to be homogenized by the process of loading the CRT material from the stockpiled areas into the waste container, therefore no individual samples will be collected at depth greater than six inches from the surface of the waste container. The six individual samples will be placed into double plastic zipper bags, mechanically mixed to homogenize the waste characterization composite sample.

The samples will be submitted for analysis by USEPA Methods1311/6010C/7471 TCLP for analysis for Eight RCRA Metals. Due to variation in glass composition, no duplicate/replicate CRT glass samples will be collected and analyzed for the purposes of waste characterization.

3.1.2 Soil Characterization

Discrete soil samples for laboratory analysis will be collected using a disposable scoop directly into laboratory supplied clean containers with a moisture-tight lid. The sample containers will then be placed into an ice chest with ice and cooled to less than or equal to 6 degrees Celsius (ºC). Ice chest lids will be sealed by labels or custody seals to prevent tampering.

Note: Non-disposable equipment, such as shovels or hand augers may be utilized to advance proposed sample to depth if soil is compact or hard. Non-disposable equipment is not expected to come into direct contact with soil samples recovered for laboratory analysis. However, the equipment will be decontaminated between sampling locations.

3.2 Quality Control

In order to attain data of sufficient quality to support project objectives, specific procedures are required to allow evaluation of data quality. These procedures and requirements for their evaluation are described in this section.

Field and Laboratory Quality Control Samples

Evaluation of field sampling procedures and laboratory equipment accuracy and precision requires the collection and evaluation of field and laboratory QC samples. **Table 4** summarizes the planned QC samples for this project. A description of each QC sample type is provided in the following sections.

3.2.1 Quality Control Analyses/Parameters Originated by the Laboratory

Method Blank

Method blanks are used to monitor each preparation or analytical batch for interference and/or contamination from glassware, reagents, and other potential sources within the laboratory. A method blank is a contaminant-free matrix (laboratory reagent water for aqueous samples or Ottawa sand, sodium sulfate, or glass beads [metals] for soil samples) to which all reagents are added in the same amount or proportions as are added to the samples. It is processed through the entire sample preparation and analytical procedures along with the samples in the batch.

There will be at least one method blank per preparation or analytical batch. If a target constituent is found at a concentration that exceeds one half the reporting limit, corrective action must be performed in an attempt to identify and, if possible, eliminate the contamination source. If sufficient sample volume remains in the sample container, samples associated with the blank contamination should be re-prepared and reanalyzed after the contamination source has been eliminated.

Laboratory Control Sample

The Laboratory Control Sample (LCS) will consist of a contaminant-free matrix such as laboratory reagent water for aqueous samples or Ottawa sand, sodium sulfate, or glass beads (metals) for soil samples spiked with known amounts of constituents that come from a source different than that used for calibration standards. Target constituents will be spiked into the LCS. The spike levels will be less than or equal to the midpoint of the calibration range. If LCS results are outside the specified control limits, corrective action must be taken, including sample re-preparation and re-analysis, if appropriate. If more than one LCS is analyzed in a preparation or analytical batch, the results for each LCS must be reported. Any LCS recovery outside QC limits affects the accuracy for the entire batch and requires corrective action.

Matrix Spike/Matrix Spike Duplicate

A sample matrix fortified with known quantities of specific compounds is called a matrix spike (MS). It is subjected to the same preparation and analytical procedures as the native sample. For this project, all target constituents will be spiked into the MS sample. Sample MS recoveries are used to evaluate the effect of the sample matrix on the recovery of the analytes of interest. A matrix spike duplicate (MSD) is a second aliquot of the MS sample, fortified at the same concentration as the MS. The Relative Percent Difference (RPD) between the results of the duplicate MSs measures the precision of sample results.

Project-specific samples will be used by the laboratory for the MS/MSD samples, which will be designated on the Chain-of-Custody (COC) form. The spike levels will be less than or equal to the midpoint of the calibration range. MS/MSD pairs will be collected at a frequency of 5 percent (%). MS/MSDs are required in every analytical batch regardless of the rate of collection and how samples are received at the laboratory.

3.2.2 Quality Control Analyses Originated by the Field Team

Field QC samples will be collected to determine the accuracy and precision of the analytical results. The QC sample frequencies are stated in the following subsections.

Field Duplicate

Field duplicates are collected in the field from a single aliquot of the sample to determine the precision and accuracy of the field team's sampling procedures. Field duplicates will be collected and analyzed at a frequency of 10% for soil characterization samples. Due to variation in CRT material composition, no duplicate/replicate CRT material samples will be collected and analyzed for the purposes of waste characterization.

3.2.3 Data Precision, Accuracy, Representativeness, Comparability and Completeness

Field QA/QC samples and laboratory internal QA/QC samples are collected and analyzed to assess the data's quality and usability. The following subsections discuss the parameters that are used to assess the data quality.

Precision

The precision of laboratory analysis will be assessed by comparing the analytical results between MS/MSD and laboratory duplicate samples. The precision of the field sampling procedures will be assessed by reviewing field duplicate sample results. The RPD will be calculated for the duplicate samples using the equation:

$$\%RPD = \{(S - D)/[(S + D)/2]\} \times 100$$

where:

S = first sample value (original value)
D = second sample value (duplicate value)

The precision criteria for the duplicate samples will be ±50% in soil samples.

Accuracy

Accuracy of laboratory results will be assessed for compliance with the established QC criteria using the analytical results of method blanks, reagent/ preparation blanks, LCS and MS/MSD samples and surrogate results, where applicable. Laboratory accuracy will be assessed for compliance with the established QC criteria and the analytical standard operating procedures. The percent recovery (%R) of LCSs will be calculated using the equation:

$$\%R = (A/B) \times 100$$

where:

A = the analyte concentration determined experimentally from the LCS
B = the known amount of concentration in the sample

Completeness

The data completeness of laboratory analyses results will be assessed for compliance with the amount of data required for decision making. Complete data are data that are not rejected. Data with qualifiers such as "J" or "UJ" are deemed acceptable and can be used to make project decisions as qualified. The completeness of the analytical data is calculated using the equation:

$$\%\text{Completeness} = [(\text{complete data obtained})/(\text{total data planned})] \times 100$$

The percent completeness goal for this sampling event is 90% per method.

Representativeness

Representativeness is the degree to which sampling data accurately and precisely represent site conditions and is dependent on sampling and analytical variability and the variability of environmental media at the site. Representativeness is a qualitative "measure" of data quality.

Achieving representative data in the field starts with a properly designed and executed sampling program that carefully considers the project's overall objectives. Proper location controls and sample handling are critical to obtaining representative samples.

The goal of achieving representative data in the laboratory is measured by assessing accuracy and precision. The laboratory will provide representative data when the analytical systems are in control. Therefore, representativeness is a redundant objective for laboratory systems if sample chains of custody and sample preservation are properly documented, analytical procedures are followed and holding times are met.

Comparability

Comparability is the degree of confidence to which one data set can be compared to another. Comparability is a qualitative "measure" of data quality.

Achieving comparable data in the field starts with a properly designed and executed sampling program that carefully considers the project's overall objectives. Proper location controls and sample handling are critical to obtaining comparable samples.

The goal of achieving comparable data in the laboratory is measured by assessing accuracy and precision. The laboratory will provide comparable data when analytical systems are in control. Therefore, comparability is a redundant QC objective for laboratory systems if proper analytical procedures are followed and holding times are met.

Sensitivity

Sensitivity is the ability of the method or instrument to detect the contaminant of concern and other target compounds at the level of interest. Appropriate sampling and analytical methods were selected that have QC acceptance limits that support the achievement of established performance criteria. Assessment of analytical sensitivity will require thorough data validation. The laboratory practical quantitation limit will be established and verified as outlined in the analytical methods and in accordance with ADHS laboratory licensure rules. Where applicable, the laboratory quantitation limits required for this project must be below Arizona Residential SRLs. A comparison of the Toxicity Characteristic for waste characterization to laboratory reporting limits is provided in **Table 5.** A comparison of Arizona SRLs and Minimum GPLs to Laboratory Reporting Limits is provided in **Table 6**.

3.2.4 Data Verification and Data Review Procedures

Personnel involved in data validation will be independent of any data generation effort. The project chemist will be responsible for the oversight of data validation. Data validation will be performed when the data packages are received from the laboratory. Waste characterization samples will undergo Stage 2A validation. Post-Removal Soil Sampling Clearance data from field samples will undergo Stage 2b data validation with an additional 10% reviewed manually back to Stage 3 and/or 4 data validation depending on the analytical method. The following items will be addressed in the data validation report:

- A review of the data set narrative to identify any issues that the lab reported in the data deliverable.
- A check of sample integrity (sample collection, preservation, and holding times).
- An evaluation of basic QC measurements used to assess the accuracy, precision and representativeness of data, including QC blanks, LCSs, MS/MSDs, surrogate recovery when applicable, and field or laboratory duplicate results.
- A review of sample results, target compound lists, and detection limits to verify that project analytical requirements are met.
- Initiation of corrective actions, as necessary, based on the data review findings.
- Qualification of the data using appropriate qualifier flags, as necessary, to reflect data usability limitations.
- Qualifier flags, if required, will be applied to the electronic sample results. If multiple flags are required for a result, the most severe flag will be applied to the electronic result. The hierarchy of flags from the most severe to the least severe will be as follows: R, NJ, UJ, U, and J. The qualifier flags are defined in **Table 7**.
- Any significant data quality problems will be brought to the attention of the project chemist.

Data Assessment

Limitations on data usability will be assigned, if appropriate, as a result of the validation process described earlier. The results of the data validation will be discussed in a separate report so that overall data quality can be verified through the precision, accuracy, representativeness, comparability, and completeness of sample results.

3.3 Sample Identification

Each sample ID will consist of a combination of source of sample, increment number, type of sample, and depth of sample collection. Following are example sample numbers and a description of the sample identifiers to be used during implementation of this work plan.

Example Glass Waste Characterization Sample ID:

CRT##-XXXX-093019

Location: CRT## (CRT Pile Number)

4 Digit Bin Identification Code: XXXX (Bin ID located on the roll off container, if no number is present on the bin, a unique bin identification number will be assigned)

Date Collected: 100119 (mmddyy)

Example Post–Removal Soil Characterization Sample ID:

XX-SC-0.0-0.5D-SO

2 Digit Grid Number: XX

Purpose of Sample: SC (site characterization)

Sample Depth: Depth of samples will be designated with a 4-digit number, the first 2 digits starting depth, second 2 digits bottom depth (in this case 0.0 to 0.5 feet)

Sample Type: D (discrete) or C (composite) (in this case it's discrete)

Sample Matrix: SO (soil) or Duplicate (DUP)

Example Duplicate of Post–Removal Soil Characterization Sample ID:

02-SC-0.0-0.5D-DUP

3.4 Chain-of-Custody

COC forms will be completed and will accompany each sample at all times. Data on the COC will include the sample ID (as described in Section 3.3), depth interval, date sampled, time sampled, project name, project number, and signatures of those in possession of the sample. COC forms will accompany those samples shipped to the designated laboratory so that sample possession information can be maintained. The field team will retain a separate copy of the COC at the field office. Additionally, the sample ID, date and time collected, collection location, and analysis requested will be documented in the field log book as discussed in Section 3.6.

3.5 Packaging and Shipping Procedures

All samples will be shipped by overnight air freight to the laboratory or hand-delivered. Unless otherwise indicated, samples will be treated as environmental samples, shipped in heavy duty coolers, packed in materials to prevent breakage, and preserved with ice in sealed plastic bags. Each shipment will include the appropriate field QC samples (i.e., trip blanks, duplicates, and rinsates).

Corresponding COC forms will be placed in waterproof bags and taped to the inside of the cooler lids. All coolers will be taped shut and a custody seal will be placed over the tape to prevent tampering.

3.6 Sample Documentation

Sample control and tracking information will be recorded in bound dedicated field logbooks and will include the following information: sample number and location, date, sampler's name, method of sampling, sample depth, soil sample physical description, ambient weather conditions, and miscellaneous observations. At the conclusion of each day in the field, the sampling team leader will review each page of the logbook for errors and omissions. He or she will then date and sign each reviewed page.

3.7 Field Instrument Calibration

All field instruments will be calibrated following manufacturer recommended calibration procedures and frequencies. Field instrument calibrations will be recorded in a designated portion of the field logbook at the time of the calibration. Adverse trends in instrument calibration behavior will be corrected.

3.8 Survey of Sample Locations

The location of each sample collected, including pre- and post-removal soil samples, will be surveyed using appropriate instrumentation and procedures to obtain horizontal accuracy of less than one (1) meter. A Trimble GeoXH with Arcpad 10, or equivalent, will be utilized to collect the soil sample locations. Data will be collected within the Trimble GeoXH unit and retrieved following field activities using the Windows Mobil Device Center and incorporated into a project specific database. Survey data will be supplied in the Final Report in Arizona State Plane and Universal Transverse Mercator coordinates.

3.9 Decontamination Procedures

Decontamination of reusable sampling equipment, if used, and personnel will be performed to ensure chemical analyses reflect actual concentrations at sampling locations by maintaining the quality of samples and preventing cross-contamination. The standard equipment decontamination procedures to be used during completion of soil sampling activities are as follows:

- Hand augers and reusable drive samplers are not expected to come into direct contact with soil samples recovered for laboratory analysis. However, the equipment will be decontaminated between boreholes.
- A simple decontamination wash pad shall be constructed using plastic sheeting which is rolled up at the ends (typically with lumber) to contain water. The pad shall be large enough to hold multiple 5-gallon buckets and equipment that requires decontamination and to provide ample working area within the pad (roughly 8 ft by 8 ft).
- Sampling equipment will be washed using a bristle brush in potable water to which Alconox or Liquinox laboratory detergent has been added. All items will then be thoroughly rinsed with potable water and allowed to air dry.
- Decontamination should be performed on the plastic sheeting of the temporary decontamination pad. Accumulated wash and rinse water will be left within the decontamination pad and allowed to evaporate.
- Once all decontamination water is evaporated, the plastic sheeting and associated pad materials shall be disposed of at an approved facility.
- After field cleaning, equipment will be handled only by personnel wearing clean gloves to prevent re-contamination. The equipment will be moved away from the cleaning area to prevent re-contamination. If the equipment is not to be immediately reused it will be covered with plastic sheeting or wrapped in aluminum foil to prevent re-contamination. The area where the equipment is stored prior to re-use must be free of contaminants.

3.10 Investigation-Derived Waste Disposal

IDW anticipated to be generated during sampling activities may include disposable sampling equipment and PPE. Used IDW will be placed in polyethylene trash bags, which will be placed in transport containers along with excavated waste destined for landfill disposal.

Table 3 Summary of Analytical Methods, Sample Containers, Preservation, and Holding Times

Target Analytes	Matrix	Analytical Method (USEPA SW846)	Sample Volume/Container	Preservative	Holding Time
CRT Glass Waste Characterization					
Eight RCRA Metals	Glass	1311/6010C/7471	100 grams (minimum) in double plastic zipper bags	None	Hg-28 days, All Others - 6 Months
Soil Waste Profile Sampling					
Volatile Organic Compounds (VOCs)	Soil	8260B (AZ List)	3 X 5 grams	Methanol Cool to ≤ 6°C	14 days
Polycyclic Aromatic Hydrocarbons (PAHs)	Soil	8270C-SIM	4-oz Glass Jar	Cool to ≤ 6°C	14 days
Eight RCRA Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver)	Soil	6010C/7471	4-oz Glass Jar	Cool to ≤ 6°C	Hg-28 days, All Others - 6 Months
Post-Removal Soil Characterization Sampling					
Lead	Soil	6010C	4-oz Glass Jar	Cool to ≤ 6°C	6 Months

Notes:
Samples will be analyzed using the most recently published versions of the analytical methods.
USEPA = U.S. Environmental Protection Agency
oz = ounce
RCRA = Resource Conservation and Recovery Act

Table 4 Quality Control Samples for Precision and Accuracy

Quality Control Type	Precision	Accuracy	Minimum Frequency
Field	Relative Percent Difference (RPD) Goal of ≤ 20%	Duplicate Sample Laboratory Analysis	One every 10 samples (10%), applicable only to soil samples
Laboratory	Matrix Spike/Matrix Spike Duplicate (RPD goal of ≤ 20%)	Method Blank	One per batch, at least one every 20 samples (rounded up) (5%)
		Laboratory Control Sample or Blank Spike	One per batch, at least one every 20 samples (rounded up) (5%)
		Matrix Spike Percent Recovery (Percent Recovery Goal of 80% to 120%)	One every 20 samples (rounded up) (5%)
		Surrogate Sample (for organics only)	One every 20 samples (rounded up) (5%)

Table 5 Comparison of Waste Characterization Requirements for Hazardous and Non-Hazardous Disposal to Laboratory Reporting Limits

Chemical	Maximum Concentration of Contaminants for Toxicity Characteristic (mg/L)	Reporting Limit (mg/L)
Arsenic	5.0	0.100
Barium	100.0	0.100
Cadmium	1.0	0.100
Chromium	5.0	0.100
Lead	5.0	0.100
Mercury	0.2	0.0100
Selenium	1.0	0.100
Silver	5.0	0.100

Notes:
mg/L = milligrams per liter

Table 6 Comparison of Arizona SRLs and Minimum GPLs to Laboratory Reporting Limits

Chemical	Arizona Residential SRLs[1] Non-Carcinogen (mg/kg)	Minimum Groundwater Protection Limits [2] (mg/kg)	Reporting Limit (mg/kg)
Lead	400	290	0.500

Notes:
1 = Arizona Administrative Code Title 18, Chapter 7, Appendix A, effective May 5, 2007
2 = A Screening Method to Determine Soil Concentrations Protective of Groundwater Quality (ADEQ, 1996)
mg/kg = milligrams per kilogram
NA = Not Applicable
SRL = Soil Remediation Levels

Table 7 Data Validation Flags

Flag	Interpretation
R	The sample results are rejected because of serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the constituent cannot be verified.
NJ	The analysis indicates the presence of a constituent that has been tentatively identified and the associated numerical value represents its approximate concentration.
UJ	The constituent was not detected above the reported sample quantification limit. However, the reported quantification limit is approximate and may or may not represent the actual limit of quantification necessary to accurately and precisely measure the constituent in the sample.
U	The constituent was analyzed for but was not detected above the reported sample quantification limit.
J	The constituent was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Notes:
Flags are listed in order of severity, from most severe (R) to least severe (J).

4.0 SCHEDULE

The tentative project schedule, including progress and reporting deliverables, is provided in **Appendix B**.

It is anticipated that field work will take approximately five to six months to compete. The tentative schedule is based on an operational disposal rate of 130 tons per day of hazardous waste and 180 tons per day of non-hazardous waste. Qualities of hazardous and non-hazardous waste are estimated based on volume. The relative ratio of hazardous and non-hazardous waste is subject to change based on waste characterization sampling. Increases in the ratio of hazardous to non-hazardous waste and/or overall increase in mass of CRT disposal may increase throughout duration of the field activities.

5.0 COMMINUTY INVOLVEMENT

Community involvement will consist of a public notice published in the local newspaper. The public notice will be submitted following ADEQ approval of this removal action work plan. A copy of the public notice is provided in **Appendix C**. Public notices will also be delivered to adjacent businesses to the Site prior to the commencement of field activities and will include basic information regarding scope of work and will identify the name and telephone number of a person(s) who may be contacted for information regarding the fieldwork. As part of community involvement activities required by A.R.S. Section 49-176(A)(2)(a), signage will be displayed on-site during removal activities and posted on the main entry gate on the southwest side of the Site.

6.0 PHASE 5: REPORTING

6.1 Monthly Progress Reporting

A Progress Report will be submitted monthly via email to the VRP Project Manager beginning after the completion of the site preparation activities. Progress reports will include a summary of site activities for the previous month and including quantities of CRT disposed of at each disposal facility, the estimated percent removal complete and anticipated activities for the next month.

6.2 Removal Action Completion / Site Characterization Report

Following completion of the CRT glass removal, impacted soil removal and following receipt of all disposal and analytical laboratory data, Wood will prepare a Removal Action Completion / Site Characterization Report. The report will provide a summary of field activities and will include copies of all received waste profiles, disposal documents and a load transportation summary. The soil characterization activities following the removal actions will also be documented in this report. The report will present the analytical results with relevant comparisons to current Arizona Residential Soil Residential Levels and / or groundwater protection levels, as appropriate.

The report will be submitted via email to VRP within 45 days of receipt of all laboratory analytical results and waste disposal / field documentation. The Report will be submitted to the ADEQ VRP and will allow 45 calendar days for VRP review and comment. The Revised Report will be submitted within 14 days of receipt of approval from the VRP. Coordination with Berendo / Harrison and regulatory agencies will be conducted by teleconference as needed to resolve all comments in a timely manner.

7.0 REFERENCES

Arizona Department of Environmental Quality (ADEQ), 1996. Screening Method to Determine Soil Concentration Protective of Groundwater Quality. September.

Metals Treatment Technologies LLC (MT2), 2019. Draft Final Report Onsite Field Study: ECOBOND® application for lead-containing CRT glass materials. June.

Wood Environment & Infrastructure Solutions, Inc. (Wood), 2019. Draft Evaluation of Removal Action Alternatives for Cathode Ray Tube (CRT) Glass Located Outside the Closed Loop 59th Avenue Facility, 435 South 59th Avenue, Phoenix, Arizona. VRP Site Code: 513246-00. August.

FIGURES

0 500 1,000 2,000 Feet

Job No.:	14-2018-2030
PM:	TO
Date:	9/10/2019
Scale:	1" = 1000'

N

The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 14-2018-2030. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

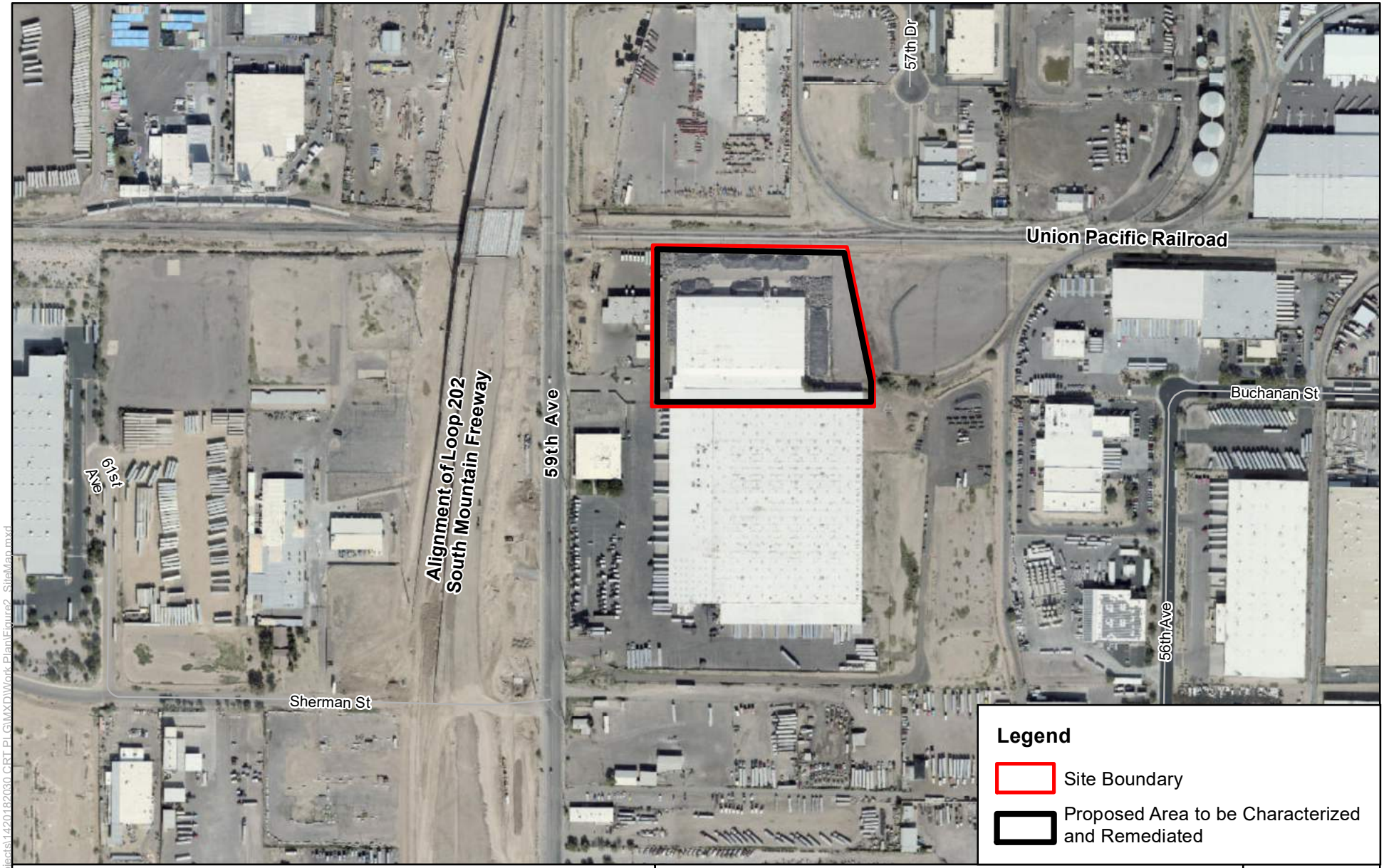
Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Phoenix, Arizona 85043

Vicinity Map

FIGURE
1

wood.

Path: X:\Projects\2018 Projects\14-2018-2030 CRT PLC\MXD\Work Plan\Figure1_VicinityMap.mxd



0 200 400 800 Feet

Job No.:	14-2018-2030
PM:	TO
Date:	9/11/2019
Scale:	1" = 400'

N

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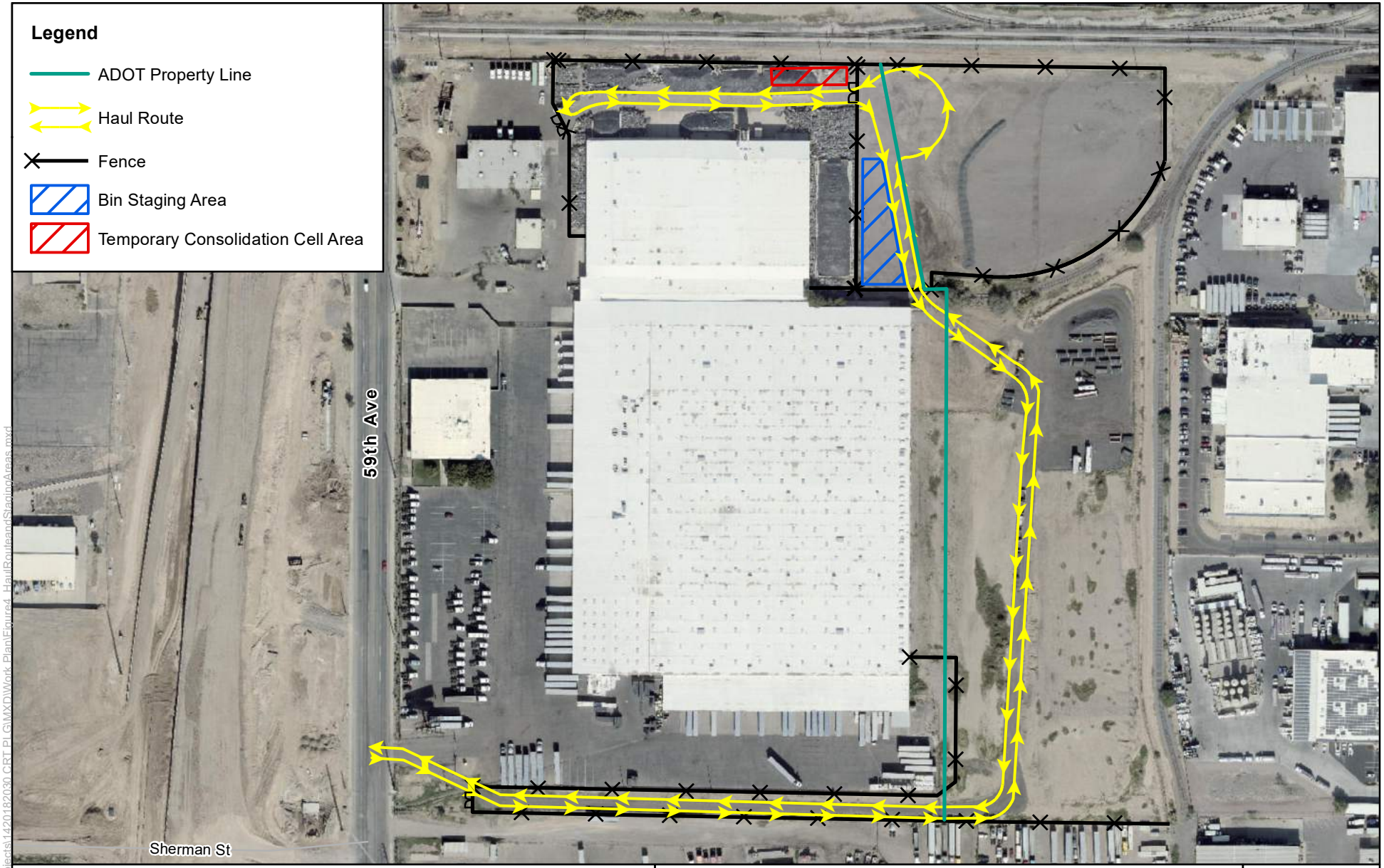
Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Phoenix, Arizona 85043

Site Map

FIGURE **2**

wood.

Path: X:\Projects\2018 Projects\14-2018-2030 CRT PLC\MXD\Work Plan\Figure2_SiteMap.mxd



0 115 230 460 Feet

Job No.:	14-2018-2030
PM:	RP
Date:	12/16/2019
Scale:	1" = 230'

N

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Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Phoenix, Arizona 85043

Haul Route and Equipment Staging Area

FIGURE **4**

wood.

Path: X:\Projects\2018 Projects\14201820300 CRT PLGMXD\Work Plan\Figure4_HaulRouteandStagingAreas.mxd

Area Name	Perimeter (ft)	Area (ft^2)	Volume (yd^3)
Pile 1	476.84	8898.55	922.21
Pile 2	287.40	4918.61	1324.47
Pile 3	206.69	2421.41	203.25
Pile 4	287.40	3664.49	332.73
Pile 5	56.73	183.319	18.26
Pile 6	199.64	2475.78	104.99
Pile 7	130.91	861.582	76.42
Pile 8	273.49	3672.21	733.02
Pile 9	276.15	4396.15	739.53
Pile 10	154.56	1061.39	82.72
Pile 11	463.62	2179.45	140.51
Pile 12	301.28	3069.09	196.32
Pile 13	174.61	1752.49	160.09
Pile 14	150.00	1308.88	90.57
Pile 15	87.01	407.183	43.77
Pile 16	350.10	3970.85	198.82
Pile 17	572.11	16407.8	3446.74
Pile 18	157.84	1117.99	130.15

Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop
59th Avenue Warehouse
435 South 59th Avenue, Phoenix, AZ 85043

FIGURE **3**

Cathode Ray Tube Exterior Storage Layout

Job No.	14-2018-2030
PM:	RP
Date:	12/16/2019
Scale:	As Shown

wood.

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X:\Projects\2018 Projects\14201820030 CRT PLG\MXD\Work Plan\Figure3_CathodeRayTubeExteriorStorageLayout_v2

0 50 100 200 Feet

Job No.:	14-2018-2030
PM:	TO
Date:	9/11/2019
Scale:	1" = 100'

N

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Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Phoenix, Arizona 85043

Soil Characterization Sampling Location Map

FIGURE **5**

wood.

Path: X:\Projects\2018 Projects\14201812030 CRT PLGMXD\Work Plan\Figure5_SampleGridMap.mxd

APPENDIX A

SURVEY REPORT

PROJECT: REMOVAL ACTION 435/445 South 59TH AVENUE WAREHOUSE

Authorizing Div. Project No. 1420182030
Wood Environment & Infrastructure Solutions
Survey Report

SUMMARY

Narrative

Wood Survey Department was tasked with the performance of creating a quantities report for the materials, Cathode Ray Tube (CRT) contained outside of the warehouse at 59th Avenue location. The materials are stored in cardboard containers approximately 4'x4'x4' individually placed on its own pallet stacked at varying heights ranging from a single pallet to two (2) pallets in height and loose crushed stockpiles. Having completed an initial site inspection, it was determined a combination of survey methods would be applied to this project.

Survey Methods:

- Conventional Robotic Total Station to define the footprint and limits of concrete barriers that surround and help contain a portion of the stockpiled CRT materials outside of the warehouse. Also, to collect data on aerial flight targets in preparation for Small Unmanned Aerial System (sUAS) flights.
- Trimble GPS System was also used to supplement the robotic total station information where needed.
- Small Unmanned Aerial System (sUAS) DJI Phantom 4 Pro V2.0 was used to collect aerial photography and video of the stockpiled CRT materials. The purpose of the flights was to capture data used to generate point cloud data and compile an ortho-mosaic image used to calculate volumes of the CRT stockpiled materials.

Data Processing:

The information from the DJI Phantom 4 aerial vehicle was input into PIX 4D software where the point cloud data and ortho-mosaic image were generated, and the volumes computed. Upon processing the data with Trimble Business Center and AutoCAD Civil 3D 2016 the volume of the concrete barriers was calculated. Once volumes of the stockpiled CRT materials were obtained from the Pix-4D software the volumes for the concrete barriers were removed from the appropriate CRT stockpiles, the results represent the material itself. The volume for the boxed CRT materials include the containers.

Control Datum:

Horizontal datum is Arizona State Plane Coordinate System NAD83, Zone: Arizona Central

Vertical datum is North American Vertical Datum 1988 (NAVD88).

Area Name	Perimeter (ft)	Area (ft²)	Volume (yd³)
Pile 1	174.61	1752.49	160.09
Pile 2	150.00	1308.88	90.57
Pile 3	87.01	407.18	43.77
Pile 4	130.91	861.58	76.42
Pile 5	350.10	3970.85	198.82
Pile 6	154.56	1061.39	82.72
Pile 7	276.15	4396.15	739.53
Pile 8	273.49	3672.21	733.02
Pile 9	287.40	4918.61	1324.47
Pile 10	287.40	3664.49	332.73
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Pile 12	206.69	2421.41	203.25
Pile 13	199.64	2475.78	104.99
Pile 14	463.62	2179.45	140.51
Pile 15	301.28	3069.09	196.32
Pile 16	476.84	8898.55	922.21
Pile 17	572.11	16407.76	3446.74
Pile 18	157.84	1117.99	130.15

N

Closed Loop Refining & Recovery
435 South 59th Avenue, Suite 120
Phoenix, Arizona 85043

Cathode Ray Tube Exterior Storage Layout

FIGURE 1

Job No.:	1420182030
PM:	TO
Date:	1/21/2019
Scale:	Not to Scale

The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 1420182030. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

wood.

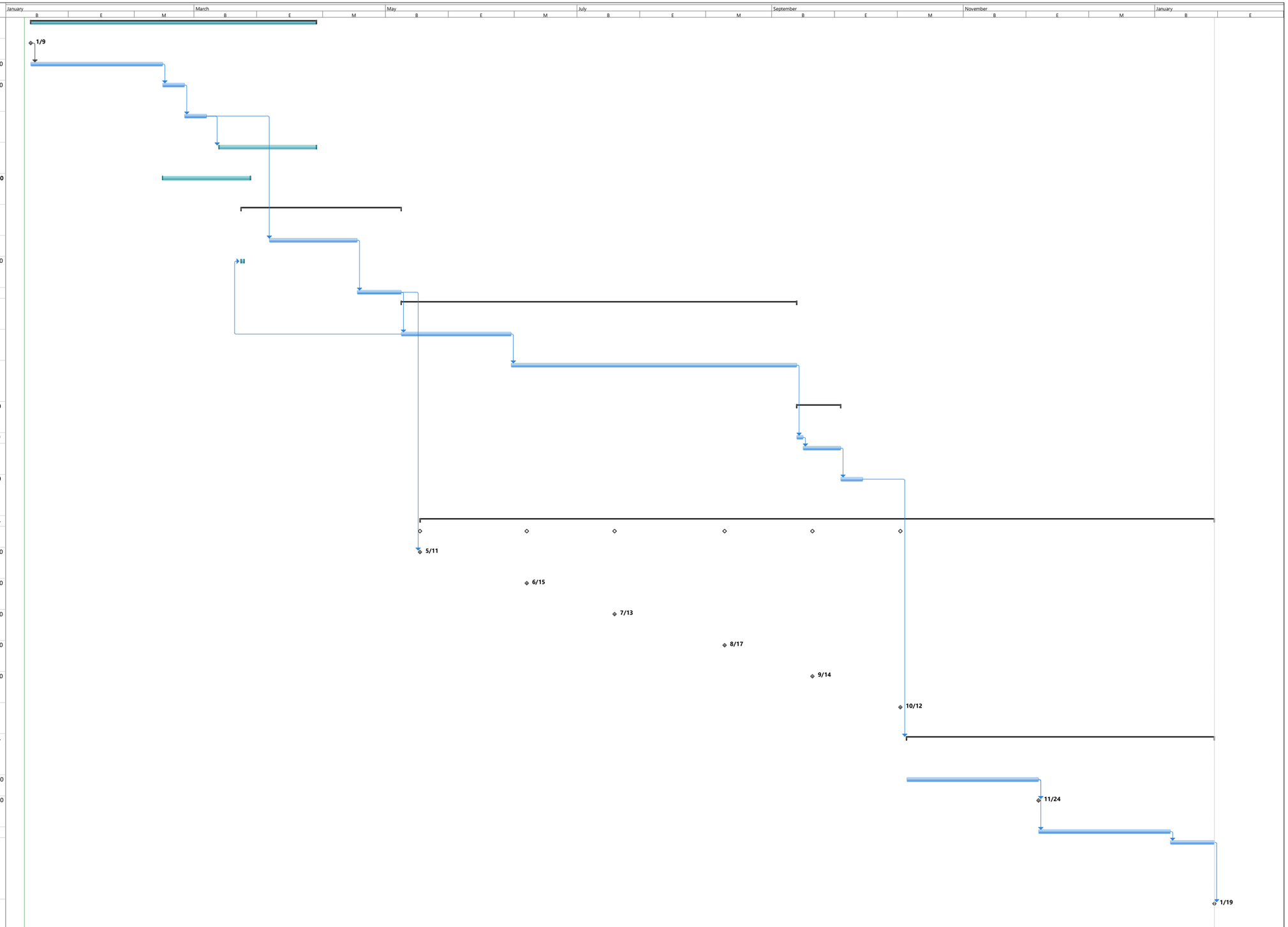
WOOD AERIAL SURVEY-CRT 59TH AVENUE

WOOD AERIAL SURVEY-CRT 59TH AVENUE

APPENDIX B

PROJECT SCHEDULE

ID	Task Mode	Task Name	Duration	Start	Finish
1		**Removal Action Work plan**	**65 days**	**Thu 1/9/20**	**Wed 4/8/20**
2		Submission of Work Plan to VRP	0 days	Thu 1/9/20	Thu 1/9/20
3		VRP Review of Work Plan to VRP	30 days	Thu 1/9/20	Wed 2/19/20
4		Response to VRP Review of Work Plan	5 days	Thu 2/20/20	Wed 2/26/20
5		VRP Review and Acceptance of Work Plan	5 days	Thu 2/27/20	Wed 3/4/20
6		Public Notice and Public Comment Period	23 days	Mon 3/9/20	Wed 4/8/20
7		**Removal Action Contractor Procurement**	**20 days**	**Thu 2/20/20**	**Wed 3/18/20**
8		**Phase 1 - Planning, Permitting, and Site Preparation**	**37 days**	**Mon 3/16/20**	**Tue 5/5/20**
9		Planning and Permitting	20 days	Wed 3/25/20	Tue 4/21/20
10		Distribution of Public Notifications	1 day	Mon 3/16/20	Mon 3/16/20
11		Site Preparation	10 days	Wed 4/22/20	Tue 5/5/20
12		**Phase 2: CRT Glass Removal, Transport and Disposal**	**90 days**	**Wed 5/6/20**	**Tue 9/8/20**
13		Boxed CRT Disposal as Hazardous Waste	25 days	Wed 5/6/20	Tue 6/9/20
14		Stockpiled CRT Glass Characterization and Disposal	65 days	Wed 6/10/20	Tue 9/8/20
15		**Phase 3: Soil Removal, Transport and Disposal**	**10 days**	**Wed 9/9/20**	**Tue 9/22/20**
16		Soil Excavation	2 days	Wed 9/9/20	Thu 9/10/20
17		Stockpile Soil Characterization and Disposal	8 days	Fri 9/11/20	Tue 9/22/20
18		**Phase 4 : Post-Removal Soil Characterization Sampling**	**5 days**	**Wed 9/23/20**	**Tue 9/29/20**
19		**Phase 5: Reporting**	**181 days**	**Mon 5/11/20**	**Tue 1/19/21**
20		**Monthly Progress Reporting**	**109 days**	**Mon 5/11/20**	**Mon 10/12/20**
21		Monthly Progress Reporting 1	0 days	Mon 5/11/20	Mon 5/11/20
22		Monthly Progress Reporting 2	0 days	Mon 6/15/20	Mon 6/15/20
23		Monthly Progress Reporting 3	0 days	Mon 7/13/20	Mon 7/13/20
24		Monthly Progress Reporting 4	0 days	Mon 8/17/20	Mon 8/17/20
25		Monthly Progress Reporting 5	0 days	Mon 9/14/20	Mon 9/14/20
26		Monthly Progress Reporting 6	0 days	Mon 10/12/20	Mon 10/12/20
27		**Removal Action Completion/Site Characterization Report**	**70 days**	**Wed 10/14/20**	**Tue 1/19/21**
28		RA/SC Report Preparation	30 days	Wed 10/14/20	Tue 11/24/20
29		Submission of RA/SC Report to VRP	0 days	Tue 11/24/20	Tue 11/24/20
30		VRP Review	30 days	Wed 11/25/20	Tue 1/5/21
31		Response to VRP RA/SC Report Review and Revised Report Preparation	10 days	Wed 1/6/21	Tue 1/19/21
32		Submission of Revised RA/SC Report to VRP	0 days	Tue 1/19/21	Tue 1/19/21



Project: Draft 59th Avenue RA S
Date: Tue 1/7/20

Task, Split, Milestone, Summary, Project Summary, Inactive Task, Inactive Milestone, Inactive Summary, Manual Task, Duration-only, Manual Summary Rollup, Manual Summary, Start-only, Finish-only, External Tasks, External Milestone, Deadline, Progress, Manual Progress

APPENDIX C

PUBLIC NOTICE

NOTICE OF AVAILABILITY AND 30-DAY PUBLIC COMMENT PERIOD
CLOSED LOOP 59TH AVENUE WAREHOUSE
VOLUNTARY REMEDIATION PROGRAM (VRP) SITE
WORK PLAN FOR REMOVAL ACTION

The Arizona Department of Environmental Quality (ADEQ) has received a work plan for the Closed Loop 59th Avenue Warehouse VRP site. The work plan proposes removal of cathode ray tube glass and impacted soil for proper disposal and was submitted in accordance with Arizona Revised Statutes (A.R.S.) § 49-175 and § 176.

The 59th Avenue Warehouse VRP site consists of approximately a six-acre former cathode ray tube glass processing center and warehouse in Phoenix, Arizona. Contaminants of potential concern at the site is lead.

The work plan is available online at: http://azdeq.gov/notices, and at the ADEQ Records Center, 1110 W. Washington St., Phoenix, (602) 771-4380, or (800) 234-5677, ext. 6027714380; please call for hours of operation and to schedule an appointment.

PARTIES WISHING TO SUBMIT WRITTEN COMMENTS regarding the remedial work plan for the Closed Loop 59th Avenue Warehouse VRP site may do so to ADEQ, Attention: Nichole Osuch, Voluntary Remediation Program, 1110 W. Washington St., Phoenix, AZ 85007 or nso@azdeq.gov and reference this listing. **Comments must be postmarked or received by ADEQ by close of business MONTH DAY, YEAR.**

Dated this DAY day of MONTH, YEAR

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Douglas A. Ducey
Governor

Misael Cabrera
Director

Via U.S. Mail

February 24, 2020
VRP 20-116

Berendo Property, a California general partnership, and Harrison Properties, L.L.C.
Attention: Mr. James Harrison
5112 North 40th Street, Suite 105
Phoenix, Arizona 85018

Re: Review of Non-Time-Critical Removal Action Work Plan
Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Suite 120 and 130
Phoenix, Arizona 85043
VRP Site Code: 513246-00

Dear Mr. Harrison:

The Arizona Department of Environmental Quality (ADEQ), Voluntary Remediation Program (VRP) has reviewed the document titled *Non-Time-Critical Removal Action Work Plan* (the Work Plan) prepared by Wood Environment & Infrastructure Solutions, Inc. on behalf of Berendo Property, a California general partnership, and Harrison Properties, L.L.C. (Berendo/Harrison) and dated January 2020. The Work Plan proposes profiling, removal, and disposal of Cathode Ray Tube (CRT) glass piles in addition to soil sampling. The VRP has the following comments:

General Comments

1. References to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) applicability at the site are improper as described in the VRP's letter titled *Response to VRP Work Plan: Legal Basis for CERCLA Removal Action Using MT2 Stabilization* and dated September 30, 2019.
2. Application for an Environmental Protection Agency ID number can be made via ADEQ's "my DEQ" online portal found at http://www.azdeq.gov/node/5308.
3. All dry wells at the site must be registered prior to conducting any investigation.

Specific Comments

1. Section 1.1 states if leachable lead concentrations in the CRT material exceed the maximum concentration of contaminants for the toxicity characteristic of 5.0 milligrams per liter (mg/L) for lead, the material will be classified as hazardous waste and will be transported and disposed off-site at a Resource Conservation and Recovery act (RCRA)–permitted Subtitle C landfill as hazardous waste in accordance with local, state and federal requirements.

   The Work Plan must be revised to state if the toxicity characteristic leaching procedure (TCLP) of 5 mg/L for lead is exceeded, laboratory analysis will also be conducted for underlying hazardous constituents (UHCs) as defined at 40 Code of Federal Regulations (C.F.R.) § 268.2(i), to determine if the universal treatment standards (UTS) for UHCs, if present, are met, prior to disposal of material determined to be hazardous waste. CRT glass samples collected by Closed Loop in 2013, and ADEQ in 2018, showed the presence of barium above its UTS of 21 mg/L.

2. At the end of the second paragraph of Section 1.1, the Work Plan states CRT-impacted soil will be characterized and disposed off-site at a Subtitle- D landfill if concentrations of lead in soil do not exceed the TCLP of 5.0 mg/L for lead.

   The Work Plan must be revised to state if the concentrations of lead in soil earmarked for disposal exceed the TCLP of 5.0 mg/L for lead, such soil would be classified as hazardous and will be disposed of at a Subtitle C landfill.

3. CRT glass is known to contain metals other than lead, therefore the VRP requests soil samples collected at the site be analyzed for Priority Pollutant Metals. Please add this information to Section 1.4, Table 1, Section 2.4, and Table 6.

4. Table 1 identifies a list of tasks that will be performed to complete the project but does not indicate sampling of the CRT glass to determine the hazardous from the non-hazardous portions prior to removal. Sampling should be either a Phase 1 or Phase 2 activity.

5. Section 2.1 must propose a preventative measure(s) such as a drywell filter or catch basin to prevent contamination to the drywell(s) during CRT glass removal and soil scrape activities.

6. Section 2.1.2 must state the Stormwater Pollution Prevention Plan will be implemented prior to beginning all other CRT glass removal activities.

7. Section 2.2.1 paragraphs 1 and 2 indicate the boxed CRT material will be placed into end dump trucks for transport, and TCLP testing will be done for characterization, except for boxed CRT material that appears to be visually consistent with piled CRT materials. The latter may be placed in 20 to 25 cubic yard capacity roll-off containers staged on site. Additionally, the section must provide a description of the sampling design including number of samples and locations and criteria for disposal.

8. Section 2.3 must describe the sampling design including number of samples and locations for soil after conducting the soil scrape once CRT glass piles are removed. Additionally, the section must describe criteria for disposal.

9. Section 2.4 must propose collection of samples from all locations where CRT material was stored, including beneath the asphalt and concrete. During ADEQ inspections, cracks and other structural discontinuities were observed, indicating a degree of permeability that would likely be conducive to migration of leachate from the exposed CRT material. These samples should be analyzed for RCRA 8 metals.

10. In the fourth bullet of Section 2.1.6, please note the language for the on-site sign must be approved by the VRP prior to posting.

11. The VRP requests the collection of five individual soil samples, distributed in an 'X' pattern across the decision unit, then composited into one sample for laboratory analysis, as opposed to the collection of one discrete soil sample per decision unit proposed in Section 2.4.

12. Section 2.5 must include the approximate depth of drywell sample(s).

13. The VRP requests the collection a duplicate sample from the drywell in addition to the sample described in Section 2.5.

14. Section 2.5 must describe the criteria for which the contingency drywell investigation will occur.

15. In Section 3.9, the fourth and fifth bullet points must be amended to state a hazardous waste determination will be conducted to determine proper management protocol of accumulated wash and rinse water. The plastic sheeting and associated pad materials must be considered solid wastes for which a hazardous waste determination must also be made. If they are determined to be hazardous, they should be managed as hazardous debris pursuant to 40 C.F.R. § 268.45.

16. Table 3 must include drywell sampling.

17. Please add RCRA 8 metals and Priority Pollutant Metals to Table 6.
18. Page 18 must include a table for drywell sampling.
19. Please note the laboratory performing analysis of samples must use Arizona Data Qualifiers Revision 4.0. Table 7 lists flags that are not Arizona data qualifiers.
20. Section 5.0 states a public notice, included in Appendix C, will be published in a local newspaper. This notice is unnecessary at this time. An on-site sign is all that is necessary for this portion of the activities at the site. Please note the language for the on-site sign must be approved by the VRP prior to posting. The sign should be visible during all activities at the site.
21. Please include an updated project schedule as found in Appendix B with the monthly progress reports described in Section 6.1.
22. Please note the laboratory and disposal documents described in Section 6.2 may be placed on a compact disc.
23. Please add drywell location(s) on Figure 5.

How to Respond

The VRP requests Berendo/Harrison incorporate the comments herein into a revised Work Plan. Please submit one bound hard copy and one CD within 30 days of this letter to the VRP for review.

The VRP understands Berendo/Harrison will be performing additional phases of work at the site including the removal of processed and unprocessed CRT glass from inside the building, decontamination of the building, and additional drywell investigation and/or soil remediation, if necessary, based on laboratory analytical data collected in this phase of work. The VRP expects Berendo/Harrison to submit fully developed work plans for these next phases of work for VRP review and approval prior to initiation of those activities.

If you have any questions or comments, please feel free to contact me at 602-771-4847, toll-free at 1-800-234-5677, or osuch.nichole@azdeq.gov.

Sincerely,

Nichole Osuch, PMP
Project Manager
Voluntary Remediation Program

cc: Mr. William Pearson, Pearson Law Group L.L.C. – via email
Ms. Sarah Sanz, The Sanz Law Firm P.L.L.C. – via email

Gmail by Google

Nichole Osuch <osuch.nichole@azdeq.gov>

Berendo/Harrison Work Plan for Removal of CRT Material on Exterior of 59th Ave Warehouse

1 message

William Pearson <wink@pearsonlg.com> Fri, Mar 27, 2020 at 3:54 PM
To: Nichole Osuch <osuch.nichole@azdeq.gov>
Cc: Scott Green <green.scott@azdeq.gov>

Nichole,

Please find attached a transmittal letter with a *Non-Time-Critical Removal Action Work Plan Exterior Cathode Ray Tube Material Located at the Closed Loop 59th Avenue Warehouse* - Revised March 27, 2020 as well as the *Response To ADEQ Comments dated February 24, 2020 Non-Time Critical Removal Action Work Plan*.

We planned to hand deliver a hard copy, a bound hard copy and a CD to your office today but because of shutdowns due to the Covid-19 pandemic and related limitations on travel, we are mailing it to your office for delivery next week.

Please contact me with any questions or need for more information.

Wink

William W. Pearson

Pearson Law Group LLC

3509 E. Shea Blvd, Suite 117

Phoenix, AZ 85028

o 602.237.5405 c 602.320.4344

wink@pearsonlg.com | pearsonlg.com

PLG PEARSON LAWGROUP

3 attachments

2020.3.27 Harr Transmittal Rev Work Plan to VRP.pdf
432K

2020.3.27 59thAve ExteriorCRTRemoval WorkPlan.pdf
13088K

2020.3.27 59th Exterior WP RTC Table.pdf
93K

PEARSON
LAW GROUP

William W. Pearson
3509 E. Shea Blvd., Suite 117
Phoenix, Arizona 85028
602.237.5405
wink@pearsonlg.com

March 27, 2020

Nichole Osuch, Project Manager
Voluntary Remediation Program
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007
osuch.nichole@azdeq.gov

Re: Removal Action Work Plan for Exterior CRT Material (Revised)
Berendo/Harrison 59th Avenue Warehouse
435 South 59th Avenue
Phoenix, Arizona 85043
VRP Site Code: 513246-00

Dear Nichole,

Pursuant to your letter dated February 24, 2020 and email dated March 25, 2020, Berendo Property and Harrison Properties (Berendo/Harrison) hereby submit their Revised Removal Action Work Plan for CRT material located on the exterior of the 59th Avenue Warehouse located at 435 South 59th Avenue, Phoenix, Arizona 85043 (Revised Work Plan). In addition, Berendo/Harrison are submitting a Response to Comments table that addresses and responds to each of the ADEQ/VRP comments provided in your letter dated February 24, 2020. We have incorporated our responses to comments into the text of the Revised Work Plan. We do not believe any of our revisions are controversial or unresponsive to comments made by ADEQ/VRP to the original Work Plan.

Due to the logistical problems caused by shut-downs of non-essential activities by businesses and other entities, this Revised Work Plan and Response to Comments table is being submitted by email attachment to insure it is received by ADEQ/VRP on March 27, 2020. We planned to deliver to ADEQ/VRP today one unbound hard bound copy, one bound hard copy and one CD as requested. Because of shutdowns due to the Covid-19 pandemic and related limitations on travel, we are mailing it to your office for delivery next week.

As we have discussed several times, Berendo/Harrison will be submitting work plans at this facility in three phases – 1) removal of the exterior CRT material; 2) removal of the interior intact CRT gaylord boxes; and, 3) removal of the interior CRT material. The three phases are necessitated because information generated in each phase will be

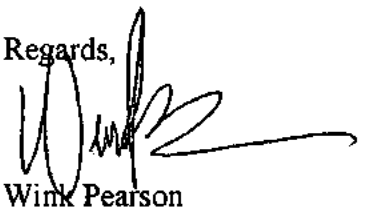
incorporated into the later phase(s). The interior work cannot start until a significant portion, if not all, of the exterior material is removed for access, trucking logistics and sampling. The interior intact CRT gaylord boxes need to be removed for space prior to interior CRT material stabilization and removal. We expect to submit the sequential work plans in fairly quick succession.

Berendo/Harrison want to complete this first phase Work Plan, and all three work plans, as efficiently and cost effectively as possible. However, given the Covid-19 activity restrictions in Arizona and nationwide, we are presently evaluating any technical and financial impacts they may have on the ability of Berendo/Harrison to perform these activities within a projected schedule. We will communicate with ADEQ/VRP as we evaluate the impact of these evolving restrictions.

Because there are external legal issues associated with a project like this, the Work Plan is submitted without prejudice to, and should not be deemed a waiver of, any of the positions taken by Berendo/Harrison in its letter to the ADEQ VRP Program dated August 27, 2019, February 9, 2020 or in any other prior correspondence with ADEQ. Harrison/Berendo expressly reserves all other rights, claims, and defenses relating to this matter.

Please contact me on your return at your earliest convenience so we can discuss next steps in this important project.

Regards,



Wink Pearson
Counsel for Berendo/Harrison

CC: Scott Green

Response To ADEQ Comments dated February 24, 2020
Non-Time Critical Removal Action Work Plan
Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Suite 120 and 130
Phoenix, Arizona 85043
VRP Site Code 513246-00

Item	Page	Section	ADEQ Comment	Response to Comment (RTC)
General Comments				
1			References to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)·applicability at the site are improper as described in the VRP's letter titled Response to VRP Work Plan: Legal Basis for CERCLA Removal Action Using MT2 Stabilization and dated September 30, 2019.	The references to CECRLA have been omitted from Section 1.1 per ADEQ/VRP request. However, Berendo /Harrison are conducting this removal action in conformity with CERCLA requirements and, therefore, expressly reserve all rights, claims and defenses as applicable under CERCLA, related laws and regulations.
2			Application for an Environmental Protection Agency ID number can be made via ADEQ's "my DEQ" online portal found at http://www.azdeq.gov/node/5308.	Noted.
3			All dry wells at the site must be registered prior to conducting any investigation.	The subject drywell is currently registered with the State of Arizona. The drywell registration number is 77011.
Specific Comments				
1		Section 1.1	Section 1.1 states if leachable lead concentrations in the CRT material exceed the maximum concentration of contaminants for the toxicity characteristic of 5.0 milligrams per liter (mg/L) for lead, the material will be classified as hazardous waste and will be transported and disposed off-site at a Resource Conservation and Recovery act (RCRA}-permitted Subtitle C landfill as hazardous waste in accordance with local, state and federal requirements. The Work Plan must be revised to state if the toxicity characteristic leaching procedure (TCLP) of 5 mg/L for lead is exceeded, laboratory analysis will also be conducted for underlying hazardous constituents (UHCs) as defined at 40	The remedial action evaluation referenced in Section 1.1 was prepared with lead as the main contaminant for the development RAOs. As stated in Section 2.2.2 and Table 3, the contents of each waste container filled with CRT material will be analyzed for Eight RCRA metals, which is inclusive of barium, and the results of the analysis will be compared to the maximum concentration of contaminants for the Toxicity Characteristic denoted in Table 5. Material with any of the Eight RCRA Metals in excess of the Toxicity Characteristic will require disposal at a hazardous waste facility.

			Code of Federal Regulations (C.F.R.) § 268.2(i), to determine if the universal treatment standards (UTS) for UHCs, if present, are met, prior to disposal of material determined to be hazardous waste. CRT glass samples collected by Closed Loop in 2013, and ADEQ in 2018, showed the presence of barium above its UTS of 21 mg/L.	
2		Section 1.1	At the end of the second paragraph of Section 1.1, the Work Plan states CRT-impacted soil will be characterized and disposed off-site at a Subtitle- D landfill if concentrations of lead in soil do not exceed the TCLP of 5.0 mg/L for lead. The Work Plan must be revised to state if the concentrations of lead in soil earmarked for disposal exceed the TCLP of 5.0 mg/L for lead, such soil would be classified as hazardous and will be disposed of at a Subtitle C landfill.	Concentrations in lead in soil are not anticipated to exceed hazardous waste criteria for lead. As specified, the response to Specific Comment #8 Section 2.3 has been amended to include decision criteria for soil disposal.
3		Section 1.4, Table 1, Section 2.4, and Table 6	CRT glass is known to contain metals other than lead, therefore the VRP requests soil samples collected at the site be analyzed for Priority Pollutant Metals. Please add this information to Section 1.4, Table 1, Section 2.4, and Table 6.	Soil samples collected from areas where the soil scrape is proposed to be performed or where bare soil is currently exposed (identified within the sampling grids on Figure 5) will be analyzed for the 13 Priority Pollutant Metals plus barium. Section 1.4, Table 1, Section 2.4, and Table 6 has been revised accordingly. Soil samples collected from beneath asphalt or concrete will be analyzed for the Eight RCRA metals as specified in Specific Comment #9.
4	3	Table 2	Table 1 identifies a list of tasks that will be performed to complete the project but does not indicate sampling of the CRT glass to determine the hazardous from the non-hazardous portions prior to removal. Sampling should be either a Phase 1 or Phase 2 activity.	Table 2, Phase 2 Scope Items has been amended to include the waste characterization of the CRT described in Section 2.2.2.
5	4	Section 2.1	Section 2.1 must propose a preventative measure(s) such as a drywell filter or catch basin to prevent contamination to the drywell(s) during CRT glass removal and soil scrape activities.	The Stormwater Pollution Prevention Plan (SWPPP) will prescribe the appropriate preventive measures for protection of the drywells during CRT and soil removal activities. The SWPPP will be implemented as a part of the Mobilization and Site Preparation Activities as specified in Section 2.1.6.

6	4	Section 2.1.2	Section 2.1.2 must state the Stormwater Pollution Prevention Plan will be implemented prior to beginning all other CRT glass removal activities.	Section 2.1.6 specifies that the SWPPP will be implemented as a part of the Mobilization and Site Preparation Activities which will be conducted prior to removal actions.
7	6	Section 2.2.1	Section 2.2.1 paragraphs 1 and 2 indicate the boxed CRT material will be placed into end dump trucks for transport, and TCLP testing will be done for characterization, except for boxed CRT material that appears to be visually consistent with piled CRT materials. The latter may be placed in 20 to 25 cubic yard capacity roll-off containers staged on site. Additionally, the section must provide a description of the sampling design including number of samples and locations and criteria for disposal.	As stated in Section 2.2.1, procedures for characterization, sampling and disposal criteria of the boxed CRT material visually similar with piled CRT material will be consistent with the procedures outlined in Section 2.2.2 once the material is placed within a 20-25 cubic yard capacity roll-off.
8	7	Section 2.3	Section 2.3 must describe the sampling design including number of samples and locations for soil after conducting the soil scrape once CRT glass piles are removed. Additionally, the section must describe criteria for disposal.	Section 2.4 and Figure 5 detail the methodology and locations of soil samples to be collected in-situ following the soil scrape. Relative to the disposal of excavated soils, one six-part composite sample will be collected from each 20 cubic yard roll off container filled during the soil scrape. Up to 25 soil roll off containers are anticipated to be filled during the soil scrap. Samples will be analyzed in accordance with the Soil Waste Profile Sampling prescribed in Table 3. Section 2.3 has been amended to include sampling procedures and decision criteria for disposal of soil will be added to Section 2.3.
9	7	Section 2.4	Section 2.4 must propose collection of samples from all locations where CRT material was stored, including beneath the asphalt and concrete. During ADEQ inspections, cracks and other structural discontinuities were observed, indicating a degree of permeability that would likely be conducive to migration of leachate from the exposed CRT material. These samples should be analyzed for RCRA 8 metals.	Discrete soil samples will be collected beneath significant cracks or other structural discontinuities that exposes soil to CRT material. The scope of this investigation, including the number and special distribution of samples, may not be determined until the stockpiled material is removed. Any soil samples collected beneath asphalt or concrete will be analyzed

				for the Eight RCRA Metals. Section 2.4 has been revised accordingly.
10	5	Section 2.1.6	In the fourth bullet of Section 2.1.6, please note the language for the on-site sign must be approved by the VRP prior to posting.	Appendix C has been revised to include a mockup of the proposed notification signage.
11	7	Section 2.4	The VRP requests the collection of five individual soil samples, distributed in an 'X' pattern across the decision unit, then composited into one sample for laboratory analysis, as opposed to the collection of one discrete soil sample per decision unit proposed in Section 2.4.	Section 2.4 has been revised for the collection of composite soil samples from the described grid cell depicted on Figure 5.
12	7	Section 2.5	Section 2.5 must include the approximate depth of drywell sample(s).	Section 2.5 has been revised to include the proposed depth of sediment sample collection.
13	7	Section 2.5	The VRP requests the collection a duplicate sample from the drywell in addition to the sample described in Section 2.5.	Section 2.5 has been revised to include the collection and analysis of a duplicate sediment sample.
14	7	Section 2.5	Section 2.5 must describe the criteria for which the contingency drywell investigation will occur.	Section 2.5 has been revised to include criteria for which the contingency drywell investigation.
15		Section 3.9	In Section 3.9, the fourth and fifth bullet points must be amended to state a hazardous waste determination will be conducted to determine proper management protocol of accumulated wash and rinse water. The plastic sheeting and associated pad materials must be considered solid wastes for which a hazardous waste determination must also be made. If they are determined to be hazardous, they should be managed as hazardous debris pursuant to 40 C.F.R. § 268.45.	Section 3.9 has been amended to include investigation derived waste characterization sampling specific to the decontamination pad and accumulated rinse water. Table 3 has also been revised to include the applicable investigation derived waste characterization sampling.
16	16	Table 3	Table 3 must include drywell sampling.	Table 3 has been revised to include the drywell sampling.
17	18	Table 6	Please add RCRA 8 metals and Priority Pollutant Metals to Table 6.	Table 6 has been amended in accordance with response to Specific Comment #3.
18	18		Page 18 must include a table for drywell sampling.	Table 6 has been amended to include the applicable constituents for the drywell investigation.
19	19	Table 7	Please note the laboratory performing analysis of samples must use Arizona Data Qualifiers Revision 4.0. Table 7 lists flags that are not Arizona data qualifiers.	Section 3.2.3 and Section 3.2.4 has been revised accordingly to include the use of Arizona Data Qualifiers Revision 4.0. Table 7 will be omitted in lieu of the reference this document.

20	19	Section 5.0	Section 5.0 states a public notice, included in Appendix C, will be published in a local newspaper. This notice is unnecessary at this time. An on-site sign is all that is necessary for this portion of the activities at the site. Please note the language for the on-site sign must be approved by the VRP prior to posting. The sign should be visible. during all activities at the site.	See response to Specific Comment #10.
21	19	Section 6.1	Please include an updated project schedule as found in Appendix B with the monthly progress reports described in Section 6.1.	A revised project schedule will be submitted to VRP in conjunction with the monthly progress reports as necessary.
22	20	Section 6.2	Please note the laboratory and disposal documents described in Section 6.2 may be placed on a compact disc.	Laboratory and disposal documents as a part of the removal action report will be submitted to VRP on compact disc, Section 6.2 has been revised accordingly.
23		Figure 5	Please add drywell location(s) on Figure 5.	Figure 5 has been revised to include the location of the drywell.

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name:	Closed Loop 59th Avenue Warehouse	VRP Site Code:	513246-00
Volunteer/Applicant Name:	Berendo Property and Harrison Properties, L.L.C		
Volunteer/Applicant Email Address and Phone:			
Authorized Agent (AA)/Consulting Company:	Pearson Law Group LLC		
AA/Consultant Email Address and Phone:	wink@pearsonlg.com, 602-237-5405		

Reference	Summary of Statutory Requirement (please review all statutes in their entirety to ensure compliance)	Page(s) Where Addressed in Work Plan (write N/A if not applicable)	VRP Use Only
§49-175A.1	Summary of existing site characterization and assessment information; information regarding any remediation previously conducted; copies of referenced reports not previously submitted;	Section 1.1, Pg 1 & Section 1.2 Pg 2	☐
§49-175A.2	If the site has not been characterized, a plan to conduct site characterization and a schedule for completion.	Section 2.4, Pg 8	☐
§49-175A.3.a	If site characterization is completed, a description of how the remediation will comply with §49-175B ("Work Plans") and how the completion of remediation will be verified. A schedule for completion must be included.	N/A	☐
§49-175A.3.b	If site characterization is completed, the work plan may provide for the remediation to be conducted in phases or tasks. A schedule for completion must be included.	N/A	☐
§49-175A.4	Schedule for submission of progress reports.	Appendix B	☐
§49-175A.5	A proposal for community involvement as prescribed by §49-176 ("Community Involvement Requirements")	Section 5.0, Pg 24	☐
§49-175A.6	If known, a list of institutional or engineering controls necessary during remediation and after completion of the proposed remediation to control exposure to contaminants.	Section 2.1.1 through 2.1.3, Pg 4-5 and Section 2.1.6, Pg 6	☐
§49-175A.7	A proposal for monitoring during remediation and after the remediation if necessary to verify whether the approved remediation levels or controls have been attained and will be maintained.	Section 2.4, Pg 8	☐
§49-175A.8	A list of any permits or legal requirements known to apply to the work or already performed by the applicant.	Section 2.1.2 through Section 2.1.4 Pg 4-5	☐
§49-175A.9	If requested by the department, information regarding the financial capability of the applicant to conduct the work identified in the application. *(IF APPLICABLE)*	N/A	☐

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name: Closed Loop 59th Avenue Warehouse VRP Site Code: 513246-00

Reference	Summary of Statutory Requirement (please review all statutes in their entirety to ensure compliance)	Page(s) Where Addressed in Work Plan (write N/A if not applicable)	VRP Use Only
§49-175B	Remediation levels or controls for remediation conducted pursuant to this article shall be established in accordance with rules adopted pursuant to §49-282.06 unless one or more of the following applies: see §49-175B.1 through §49-175B.4, below.	Section 1.3 & 1.4 Pg 2 & 3	☐
§49-175B.1	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of contaminated soil comply with §49-152 and the rules adopted.	Section 1.3 & 1.4 Pg 2 & 3	☐
§49-175B.2	The applicant demonstrates that remediation levels, institutional controls, or engineering controls for remediation of landfills or other facilities that contain materials that are not subject to §49-152 (i.e.: asbestos) do not exceed a cumulative excess lifetime cancer risk between $1X10^{-4}$ to $1X10^{-6}$, and a hazard index of no greater than 1.	N/A	☐
§49-175B.3	The applicant demonstrates that on achieving remediation levels or controls for a source or potential source of contamination to a navigable water, the source of contamination will not cause or contribute to an exceedance of surface water quality standards, or if a permit is required pursuant to 33 United States Code §1342 for any discharge from the source, that any discharges from the source will comply with the permit.	N/A	☐
§49-175B.4	The applicant demonstrates that, on achieving remediation levels or controls for a source of contamination to an aquifer, the source will not cause or contribute to an exceedance of aquifer water quality standards (AWQS) beyond the boundary of the facility where the source is located.	Section 1.4 Pg 2	☐
§49-175C	The VRP may waive any work plan requirement under this section that it determines to be unnecessary to make any of the determinations required under §49-177. *If any waivers are requested in the Work Plan or have been previously requested and approved by the VRP, cite them in the Work Plan, including a citation of the statute for which the waiver applies.*	N/A	☐

Voluntary Remediation Program Work Plan Checklist

Complete Shaded Areas and Submit with Work Plan

Site Name: Closed Loop 59th Avenue Warehouse VRP Site Code: 513246-00

To support the prerequisites established by A.R.S. §49-177 and §49-180, the VRP expects certain documentation to accompany a Work Plan. The following provides a list of attachments/exhibits which are recommended for submittal with a Work Plan to provide the information required by the statutes.

Work Plan Information	Title of Figure/Table/Attachment/Exhibit Where Requested Information is Cited (write N/A if not applicable)	Figure/Table/ Attachment or Report Page Number (write N/A if not applicable)	VRP Use Only
Site Location Map *(topographic or aerial)*	Vicinity Map	Figure 1	☐
Site Map *(to scale)*	Site Map	Figure 2	☐
Historical Sampling Data Table	N/A	N/A	☐
Historical Sample Location Map (to scale)	N/A	N/A	☐
Proposed Sample Location Map (to scale)	Soil Characterization Sampling Location Map	Figure 5	☐
Sampling and Analysis Plan (includes Field Sampling Plan & Quality Assurance Plan)	Field Sampling Plan, Quality Assurance and Quality Control	Section 3.0, Pgs 9 - 16	☐
Proposed Remediation System Location Map	Cathode Ray Tube Exterior Storage Layout	Figure 3	☐
Proposed Remediation System Layout (Design Drawings)	Haul Route and Equipment Staging Area	Figure 4	☐
Schedule for Implementation of Project Activities* (Gantt Style Chart)	Project Schedule	Appendix B	☐
*Project Activities are defined in A.R.S. §§49-175A.2 through 49-175A.4, and 49-176A.2 (Community Involvement).			
Proposed Language for Public Notification of Remediation (i.e.: example signage)	Proposed On-Site Signage	Appendix C	☐
Plan for Investigative Derived Waste (IDW)	Investigation-Derived Waste Disposal	Section 3.9 & 3.10, Pg 15 & 16	☐
Evaluation of Remedial Alternatives (i.e: for Feasibility Study Work Plan)	N/A	Summarized in Section 1.1	☐

DOES THE WORK PLAN PROPOSE IMPLEMENTING SITE-SPECIFIC REMEDIATION LEVELS?

Yes	No
☐	☑

DOES THE WORK PLAN PROPOSE EVALUATION OF BACKGROUND LEVELS?

Yes	No
☐	☑

NOTE: When reports are submitted which document any type of sampling activity, the submittal of Electronic Data per ADEQ's *Groundwater Data Submittal Guidance (V3.4)* is strongly recommended.

wood.

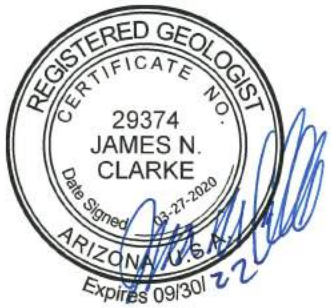
NON-TIME-CRITICAL REMOVAL ACTION WORK PLAN
EXTERIOR CATHODE RAY TUBE MATERIAL
LOCATED AT THE CLOSED LOOP 59TH AVENUE WAREHOUSE
435 SOUTH 59TH AVENUE
PHOENIX, ARIZONA 85043
VRP SITE CODE: 513246-00

Prepared for:
Berendo Property and Harrison Properties, L.L.C.
5112 North 40th Street Suite 105
Phoenix, Arizona 85018

Submitted by:
Wood Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

Revised March 27, 2020

Project No. 14-2018-2030



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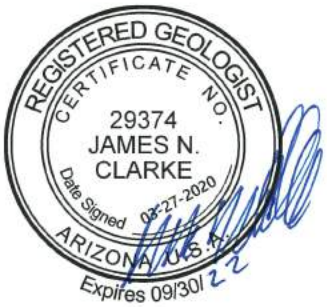

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LIST OF ACRONYMS AND ABBREVIATIONS

°C	Degrees Celsius
%	percent
%R	Percent recovery
59th Avenue Warehouse	former Closed Loop warehouse located at 435 South 59th Avenue
A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADHS	Arizona Department of Health Services
ADOT	Arizona Department of Transportation
AZPDES	Arizona Pollutant Discharge Elimination System
Berendo / Harrison	Berendo Property and Harrison Properties, L.L.C.
BTEX	benzene, toluene, ethylbenzene, and xylenes
CFR	Code of Federal Regulations
Closed Loop	Closed Loop Recovery and Refining
COC	Chain-of-Custody
CRT	cathode ray tube
ft	foot, feet
ft^2	square feet
GPL	Groundwater Protection Limit
HASP	Health and Safety Plan
IDW	investigation-derived waste
LCS	laboratory control sample
mg/L	milligrams per liter
mg/kg	milligrams per kilogram
MS	matrix spike
MSD	matrix spike duplicate
MT2	Metals Treatment Technologies, LLC
NFA	No Further Action
NOI	Notice of Intent
PAHs	polycyclic aromatic hydrocarbons
PPE	personal protective equipment
QA	quality assurance
QC	quality control
RAO	removal action objective
RCRA	Resource Conservation Recovery Act

RPD	Relative Percent Difference
SRL	Soil Remediation Level
SWPPP	Storm Water Pollution Prevention Plan
TCLP	Toxicity Characteristic Leaching Procedure
Toxicity Characteristic	Maximum Concentration of Contaminants for Toxicity Characteristic
USEPA	U.S. Environmental Protection Agency
VOCs	volatile organic compounds
VRP	Voluntary Remediation Program
Wood	Wood Environment & Infrastructure Solutions, Inc.
Work Plan	Non-Time-Critical Removal Action Work Plan
yd^3	cubic yard

1.0 INTRODUCTION

The purpose of this Non-Time-Critical Removal Action Work Plan (Work Plan) is to describe the approach for the removal and disposal of cathode ray tube (CRT) material located on the exterior of the former Closed Loop Recovery and Refining (Closed Loop) processing center and warehouse located at 435 South 59th Avenue in Phoenix, Arizona (59th Avenue Warehouse) (the Site) (**Figure 1** & **Figure 2**).

Regulatory oversight for the scope of work presented by this Work Plan is being provided by the Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP). The 59th Avenue Warehouse was accepted in the ADEQ VRP Program on May 23, 2019. The VRP will be responsible for regulatory review and approval of project documents and issuance of a Letter of No Further Action (NFA) upon completion of the scope of work and request by the Property Owners, Berendo Property and Harrison Properties, L.L.C. (Berendo / Harrison). The VRP Site Code is 513246-00. This Work Plan has been prepared in general accordance with Arizona Revised Statutes §49-175.

1.1 Background

The 59th Avenue Warehouse was leased and operated by Closed Loop, a former processor of CRT television and computer monitors. The CRT television and computer monitors were processed and the resulting material (i.e. glass and scrap metal components) were boxed or stockpiled at the 59th Avenue Warehouse. CRT material is currently stored in gaylord boxes and large stockpiles on the exterior of the warehouse. ADEQ has requested that the CRT material be removed from the Site and properly disposed. Sampling and laboratory analysis performed of the CRT material indicates that a portion of the CRT material would be considered hazardous waste if disposed off-site.

An abbreviated Removal Action Alternative Evaluation was prepared by Wood Environment & Infrastructure Solutions, Inc. (Wood) (Wood, 2019), The purpose of the evaluation was to develop and evaluate removal action objectives (RAOs) for the CRT material and potentially lead-impacted soils that may pose unacceptable risks on the exterior of the 59th Avenue Warehouse. Based on the comparative analysis of the removal action alternatives, the recommended action was Alternative 3 – Waste Segregation and Off-Site Disposal. In Alternative 3, the CRT material would be segregated and batch tested using the Toxicity Characteristic Leaching Procedure (TCLP) method to determine if concentrations of leachable lead are present in the CRT material. If leachable lead concentrations in the CRT material exceed the Maximum Concentration of Contaminants for Toxicity Characteristic (Toxicity Characteristic) of 5.0 milligrams per liter (mg/L) for lead, the material will be classified as hazardous waste and will be transported and disposed off-site at a Resource Conservation Recovery Act (RCRA)-permitted Subtitle C landfill as hazardous waste in accordance with local, state and federal requirements. CRT material with leachable lead concentrations less than the Toxicity Characteristic of 5.0 mg/L for lead will be classified as non-hazardous waste and will be transported and disposed of off-site at a Subtitle D landfill. CRT-impacted soil will be characterized and disposed off-site at a Subtitle D landfill if concentrations of lead in soil do not exceed the Toxicity Characteristic of 5.0 mg/L for lead.

The process of CRT material waste segregation and off-site disposal was previously implemented by the Arizona Department of Transportation (ADOT) for approximately 5,750 cubic yards (yd^3) of stockpiled CRT material located on Maricopa County Assessor's Parcel Number 104-19-003E, 445 South 59th Avenue in Phoenix, Arizona. This CRT material originated from Closed Loop. ADEQ agreed to allow ADOT to dispose of the CRT material as non-hazardous waste as long as the following criteria were met: 1) the CRT material is first placed into waste roll-off containers and every waste roll-off container of CRT material is sampled and analyzed using the TCLP method; 2) lead concentrations are below the Toxicity Characteristic of 5.0

mg/L; and, 3) the landfill accepts the waste profile and CRT material as non-hazardous waste. Loading, transportation and disposal of stockpiled CRT material at the ADOT parcel was conducted in accordance with ADEQ criteria and was completed in 2018.

1.2 Initial Site Characterization

An initial inventory assessment was conducted in January 2019 to refine mass estimates of CRT material at the Site. As a part of inventory assessments at the Site, an aerial drone survey was conducted to estimate the volume of CRT material staged on the exterior of the 59th Avenue Warehouse. The Survey Report is included in **Appendix A**. As shown on **Figure 3**, the drone survey resulted in the volume calculations for eighteen individual areas of stockpiled CRT material to determine a total volume estimate of approximately 8,945 yd^3 of CRT glass. An estimated 28,623,000 pounds (14,311.5 tons) of processed CRT material was estimated from the volume of CRT material that is present. The mass of stockpiled CRT material is estimated to be 22,426,000 pounds (11,213 tons) and the mass of CRT material contained within large boxes is estimated to be 6,197,000 (3,098.5 tons).

Sampling and analysis of the exterior CRT material revealed that concentrations of leachable lead range from <0.1 mg/L to 12.2 mg/L (Metals Treatment Technologies, LLC [MT2], 2019). The CRT material on the exterior of the 59th Avenue Warehouse is primarily staged on asphalt or concrete ground surfaces. A limited portion of the CRT material is staged on bare soil east of the warehouse and spilled CRT material is present on the undeveloped portion of the Site. Based on a review of aerial images, an estimated 62,000 square feet (ft^2) of unpaved land surface may have been impacted by CRT material.

1.3 Removal Action Objectives

The following removal action objectives (RAOs) are identified for the project:

- Prevent human exposure to lead in CRT material and soils that would pose an unacceptable health risk under current or future potential land uses and reduce potential impacts to groundwater.
- Remove CRT material from the Site to render the property available for future commercial leasing opportunities.

1.4 Chemical-Specific Removal Action Goals

The chemical-specific removal action goals applicable for NFA are specified in **Table 1**. For chemicals where the minimum GPL is lower than the Arizona Residential SRL, the minimum GPL is identified as the removal action level unless an alternate GPL is calculated. Following removal of the CRT material and the collection of sufficient site-specific data to determine the ratio between the total metals concentration and leachate concentration, an alternative GPL may be calculated using ADEQ's leachability guidance policy (ADEQ, 1996).

Table 1 Removal Action Goals for Soil

Chemical	Arizona Residential SRL[1] Non-Carcinogen (mg/kg)	Minimum Groundwater Protection Limit [2] (mg/kg)
Lead	400	290
Antimony	31	35
Arsenic	10	290
Barium	15,000	12,000
Beryllium	150	23
Cadmium	39	29
Chromium III	120,000	590
Copper	3,100	--
Mercury	23	12
Nickel	1,600	590
Selenium	390	290
Silver	390	--
Thallium	5.2	12
Zinc	23,000	--

Notes:
1 = Arizona Administrative Code Title 18, Chapter 7, Appendix A, effective May 5, 2007
2 = A Screening Method to Determine Soil Concentrations Protective of Groundwater Quality (ADEQ, 1996)
mg/kg = milligrams per kilogram
-- = Not Established
SRL = Soil Remediation Level

2.0 SCOPE OF WORK

The scope of work for this project is described in the table and following subsections.

Table 2 Scope of Work

Scope of Work Phase	Phase Description	Phase Scope Items
Phase 1	Planning, Permitting, and Site Preparation	• Preparation of a, site-specific HASP, Maricopa County Dust Control Plan and SWPPP • Obtain Generator ID, AZPDES Construction General Permit, Maricopa County Dust Control Permit • Utility Clearance • Equipment Mobilization
Phase 2	CRT Glass Removal, Transport and Disposal	• Remove, load, transport and dispose of an estimated 3,098.5 tons of boxed CRT material • Waste characterization sampling to determine hazardous from non-hazardous CRT material and disposal of an estimated 11,213 tons of piled CRT material
Phase 3	Soil Removal, Transport and Disposal	• Surface scrape, load, transport and dispose of up to 500 tons of soil visually impacted with CRT material
Phase 4	Post-Removal Soil Characterization Sampling	• Collection and analysis of soil samples within soil excavation areas
Phase 5	Reporting	• Monthly Progress Reporting • Removal Action Completion / Site Characterization Report

The removal actions will be performed by Berendo/Harrison's contractor (the Contractor). Waste characterization sample collection, data validation and reporting will be conducted by Wood, Berendo/ Harrison's environmental consultant.

2.1 Phase 1: Planning, Permitting, and Site Preparation

2.1.1 Health and Safety Plan

A project-specific health and safety plan (HASP) will be prepared and will include specific requirements for the sampling and removal activities. The HASP will be kept on-site and will address the health and safety hazards of each task conducted by employees for this project, including the requirements and procedures for worker protection (per 29 Code of Federal Regulations [CFR] 1910.120). The HASP will be developed based on the hazards known or suspected to be present, specifically as they relate to the work to be conducted by on-site employees. Air quality monitoring will be performed during the remedial activities in accordance with the project HASP. Air monitoring is designed to identify and quantify airborne contaminants, evaluate the impact of Site activities on the worker, and reduce or eliminate the migration of dust. Real-time air monitoring will be required during removal activities, appropriate levels of personal protective equipment (PPE) and decontamination procedures will be determined using monitoring data.

2.1.2 Arizona Pollutant Discharge Elimination System Construction General Permit

The removal action will not result in a discharge of process waters to waters of the United States, and therefore, will not require coverage under an individual Arizona Pollutant Discharge Elimination System (AZPDES) permit. If the anticipated area of disturbance at the Site, including excavation, equipment staging,

and other earth disturbing activities, during the remedial activities exceeds 1 acre, a general construction permit would be required per Arizona Administrative Code (A.A.C.) R18-9-A905 and 40 CFR 122.26(b)(15), and a Notice of Intent (NOI) must be submitted to ADEQ. The anticipated total area of disturbance is greater than one acre, therefore, an NOI will be required for this remediation project.

Additionally, Wood will prepare a Storm Water Pollution Prevention Plan (SWPPP), which will be implemented in accordance with good engineering practices and identifies potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the Site. The SWPPP ensures implementation of control measures that will be used to reduce pollutants in stormwater discharges from the project Site, assures compliance with the terms and conditions of the 2013 Arizona Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction Activity to Waters of the United States (AZG2013-001) (ADEQ CGP), and identifies the responsible party or parties for on-site SWPPP implementation.

2.1.3 Maricopa County Air Quality Department Dust Control Permit

The Contractor will prepare and submit a dust control permit application and dust control plan to obtain a Dust Control Permit from the Maricopa County Air Quality Department prior to the commencement of removal actions. The dust control plan will include specific primary, contingency, and required dust control measures. Removal actions will be conducted in accordance with the dust control plan for the duration of the field activities.

The Contractor will be responsible for performing all dust control during the removal action. The effectiveness of dust control will be determined by the air monitoring results. The primary engineering control for controlling dust on the Site will be the use of water to wet the areas of disturbance, both the traffic area as well as the areas being excavated for disposal. A water truck or trailer will be utilized to control dust generation during glass disturbance and in consolidation cells and stockpiles. To ensure engineering controls are properly implemented by the application of water for dust suppression air monitoring for particulate levels will be conducted using a real-time dust monitor. Wind speed and direction during removal actions will be monitored periodically

2.1.4 Hazardous Waste Requirements

Due to the potential volume of characteristic RCRA waste that may be generated from the Site, Berendo/Harrison will be required to obtain an USEPA ID Number as a Large Quantity Generator. An initial notification will be submitted to ADEQ to obtain the facility USEPA ID number. It is anticipated that more than 1,000 kg/month (2,200 pounds/month) of non-acute hazardous waste will be removed from the Site as a part of short-term remedial actions. The RCRA USEPA ID Number will be used on transport manifests as required under Subtitle C of RCRA.

2.1.5 Utility Locating

The Contractor will contact Arizona 811 at least 72 hours in advance of initiating removal activities for public utility marking. Upon arrival at the Site, utility markings will be checked against a list of companies notified to confirm that the appropriate utilities have been identified and marked. As Arizona 811 typically will not mark utilities on private property, a private utility locator will be mobilized to the Site to mark utilities in the areas of soil removal. Arizona 811 will be contacted to revalidate markings every 14 working days through the duration intrusive activities, if applicable.

2.1.6 Mobilization and Site Preparation

The Site will be accessed from 59th Avenue through the southwestern corner of the property. **Figure 4** depicts the proposed haul route, security fencing, bin staging area and consolidation areas. The following activities will be performed as part of mobilization and site preparation:

- Implementation of the SWPPP, which may include run-on/runoff control measures such as silt fences, hay bales, and silt curtains and other protections for the on-site drywell.
- Areas specified for truck access and egress, decontamination of equipment, equipment staging, the loading and unloading of materials, and transport bin staging will be defined.
- A construction trailer with diesel generator, portable toilets and hand wash stations will be staged in a support area which will include a heater, air conditioner, lighting and electrical for Contractor and Wood personnel.
- Equipment mobilization will include excavators, loaders, water truck, water holding tank, sampling equipment, air monitoring equipment, and health and safety equipment.
- As part of community involvement activities required by A.R.S. Section 49-176(A)(2)(a), signage will be displayed on-site during removal activities and posted on the main entry gate on the west side of the Site (**Appendix C**).
- Installation of additional fencing and lockable gate along the western boundary of the Site. The additional fencing is proposed for installation prior to the start of the removal actions. Once the additional fencing is complete, the entirety of the Site will be located within a secured area. The fencing will serve to limit Site access and potential exposure to contaminants during removal actions.

2.2 Phase 2: CRT Material Removal, Transport and Disposal

CRT material removal will be divided into two processes: (1) removal and disposal of boxed material as hazardous waste; and, (2) waste characterization, removal and disposal of piled CRT material. These two processes will be conducted concurrently throughout the removal action. In general, the removal of the CRT material will follow the number sequencing of the stockpiled and boxed areas denoted in **Figure 3**. This sequencing is proposed to maximize the potential for utilization of bay doors on the northern portion of the warehouse for future removal actions. The following sections detail the procedures for waste handing, characterization, transportation and disposal of CRT material. The

2.2.1 Disposal of Boxed CRT Material as Hazardous Waste

The Contractor will dispose of approximately 6,197,000 pounds (3,098.5 tons) of boxed CRT material. The locations of the boxed CRT material are shown on **Figure 3**. As depicted in **Figure 3**, boxed CRT material is located to the west, north and east of the 59th Avenue Warehouse in designated areas denoted as Pile 1, Pile 3, Pile 5, Pile 7, Pile 10, Pile 11, Piles 13 through 16 and collocated with stockpiled CRT material in Pile 2 and Pile 17. The Contractor will use an excavator, loader or where appropriate a forklift, to load the CRT material directly into end dump trucks for transport. Each waste shipping container will be fully lined with six (6) mil polyethylene liner and covered with solid, vinyl, dust free roll top covers that completely overlap the top of the truck on all sides. Wood will collect discrete samples of the CRT material to be analyzed for the Eight RCRA Metals by USEPA Method 1311 TCLP to develop a hazardous waste profile. The Contractor will develop a waste profile for the CRT material and provide waste manifests to document the shipment of truckloads from the Site. Uniform Hazardous Waste Manifests (USEPA Form 8700-22) will be prepared by the Contractor for approval by Berendo/Harrison prior to transportation. Approved manifests will require signature by Berendo/Harrison authorized personnel prior or the day of transport. Copies of manifests, bills

of lading, and weight tickets will be managed by Wood and presented in the Removal Action Completion Report.

CRT material that contains lead in excess of the Toxicity Characteristic of 5.0 mg/L for lead will require management as a RCRA hazardous waste carrying waste code D008 and will be properly transported/shipped in placarded and permitted vehicles to U.S. Ecology Nevada Landfill in Beatty, Nevada. US Ecology treats the waste using a stabilization process that de-characterizes the waste so that it meets the Land Disposal Restrictions and can be disposed of in a non-hazardous subtitle D landfill. Off-site disposal of materials will be performed in accordance with applicable Federal, state, and local regulations pursuant to 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste ([45 FR 33142, May 19, 1980, as amended at 70 FR 10818, Mar. 4, 2005; 81 FR 85724, Nov. 28, 2016]) and 40 CFR Part 266, Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities (50 FR 666, Jan. 4, 1985).

If boxed CRT material appears to be visually consistent with piled CRT materials, the contents of the boxes may be placed in 20 to 25 yd^3 capacity roll-off containers that are staged on the Site and will be characterized for disposal consistent with the procedures described Section 2.2.2.

2.2.2 Waste Characterization and Disposal of CRT Material as Non-Hazardous or Hazardous Waste

The Contractor, in conjunction with characterization efforts performed by Wood, will dispose of an estimated 22,426,000 pounds (11,213 tons) of stockpiled CRT material. The locations of the stockpiled CRT material are shown on **Figure 3**. As shown in **Figure 3**, stockpiled CRT material is located to the north and east of the 59th Avenue Warehouse in designated areas denoted as Pile 2, Pile 4, Pile 6, Pile 8, Pile 12, Pile 17, and Pile 18. The Contractor will use an excavator to remove CRT material from the stockpiles. A wheel loader will take the CRT material from the excavator and placed in 20 yd^3 capacity roll-off containers that will be staged on the eastern portion of the Site. The contents of each container will be sampled by Wood for the Eight RCRA Metals by USEPA Method 1311 TCLP on standard or an expedited 72-hour turn-around time. Following receipt of analytical results, each container will be categorized for disposal as hazardous or non-hazardous waste based on the characterization sample result value for the Eight RCRA Metals compared to the Toxicity Characteristic for each of the eight metals. Following receipt and verification/validation of analytical results, waste containers will be labeled as hazardous or non-hazardous waste. Labels will be verified by Wood personnel prior to consolidation for transport. The Contractor will develop a waste profile for the CRT material using representative analytical data and provide waste manifests to document the shipment of truckloads from the Site.

Roll-off containers will be emptied, and the contents will be placed into a corresponding temporary consolidation cell. CRT material that is placed in the temporary consolidation cell will be directly loaded into end dumps trucks for transport to the appropriate hazardous or non-hazardous waste facility to maximize transportation efficiency. Each temporary consolidation cell will initially consist of an approximately 20-ft by 15-ft area located on the asphalt or concrete within the Site. Consolidation cell areas may increase to accommodate additional CRT volume as daily waste disposal volumes are expected to increase through the duration of the removal action. Waste cells will be enclosed on three sides with concrete jersey barriers and will be clearly labeled with the appropriate waste characterization (**Figure 4**).

Waste will be transported and disposed of at the appropriate hazardous or non-hazardous waste facility based on the classification of waste. Hazardous waste is proposed to be disposed of at US Ecology Nevada, Beatty, Nevada in accordance with the procedures defined in Section 2.2.1, and non-hazardous waste will be disposed of at Republic Services Southwest Regional Landfill in Buckeye, Arizona.

2.3 Phase 3: Soil Removal, Transport and Disposal

Following removal of the boxes and piles of CRT material, the Contractor will perform a surface scrape to remove soil visually impacted with CRT material, located on the northern and eastern portion of the Site. The northern area proposed for removal of visually impacted soil includes the area north of Piles 2, 6, 7, 8, 9, 13 and 14. The eastern areas proposed for removal of visually impacted soil includes the area east of Pile 9, beneath Pile 16 and 18, beneath portions of Pile 17 and the triangular shaped dirt lot on the eastern portion of the Site where spilled CRT material was observed. **Figure 5** depicts the areas of proposed areas for removal of soil visually impacted with CRT material. The Contractor will use a loader to surface scrape and remove up to an estimated 62,000 ft^2 of unpaved land surface that may have been impacted by CRT material to a depth of three (3) inches for a volume of approximately 575 yd^3. A wheel loader will place the removed soil into roll-off containers. Up to 25 roll-off containers are anticipated to be filled during the soil scrape. One six-part composite soil sample will be collected from each 20 cubic yard roll off container of scraped soil. The soil waste profile samples will be submitted for analysis VOCs, PAHs and TCLP analysis for Eight RCRA Metals as prescribed in **Table 3**.

CRT-impacted soil with leachable concentrations of the Eight RCRA Metals less than the Toxicity Characteristic will be classified as non-hazardous waste and will be transported and disposed of off-site at a Subtitle D landfill. If the concentrations of metals in soil exceed the Toxicity Characteristic, the CRT-impacted soil would be classified as hazardous waste and will be disposed of at a Subtitle C landfill in accordance with the procedures specified in Section 2.2.1.It is estimated that 500 tons of soil with visible CRT material will be removed from the Site.

Soil with concentrations of VOC or PAH compounds above non-residential SRLs, will be classified as an Arizona special waste PCS. Special waste PCS will be transported offsite for disposal at a landfill licensed to receive special waste PCS. Soil with concentrations above residential SRLs, but below non-residential SRLs, can be classified as an Arizona Solid Waste PCS and transported offsite to a solid waste landfill in accordance with Arizona special waste requirements. *Note: VOCs and PAHs are not anticipated to be present at the Site in concentrations greater than the Arizona residential SRLs.*

2.4 Phase 4: Soil Sampling Characterization

Following the completion of removal of all CRT material and soil visually impacted with CRT material, the bare soil areas where CRT material was stored will be divided into 25-ft by 25-ft grid cells (**Figure 5**). Wood will collect five individual soil samples, distributed in an 'X' pattern across each grid cell and the five individuals samples will be composited into one soil sample to be submitted for analysis by EPA Method 6010 for the 13 Priority Pollutant Metals plus barium. The samples will be collected from approximately 0 to 4 inches below grade. Based on the analytical results, additional excavation may be required to achieve the removal action goals.

The ground surface covering, such as asphalt and concrete, will be visually assessed following the removal of all CRT material. Areas of significant concrete and asphalt degradation or cracking will be noted. Discrete soil samples may be collected beneath such cracks or other structural discontinuities when soil may have been directly exposed to CRT material. Location of the proposed discrete soil samples will be determined following the visual assessment of the surface coverings and will be collected at a frequency no greater than one sample per 625 square feet (ft^2). Such discrete soil samples will be collected from approximately 0 to 4 inches beneath asphalt or concrete surface covering and will be submitted for analysis by EPA Method 6010C/7471 for the Eight RCRA Metals.

2.5 Phase 5: Drywell Investigation

Following the completion of removal of all CRT material and soil visually impacted with CRT material, one sediment sample and one duplicate sediment sample from the on-site drywell settling chamber will be collected at an approximate depth of 5 ft below ground surface. These samples will be submitted to an Arizona Department of Health Services (ADHS) approved laboratory for analysis of for volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX) by Method EPA 8260B, polycyclic aromatic hydrocarbons (PAHs) by Method 8270C-SIM, and for 13 priority pollutant metals plus barium (total metals) by EPA Method 6000 and 7000 series. These analyses are in accordance with the recommendations in the ADEQ Drywell Investigation Guidelines. Results of the settling chamber sediment samples will be compared to the Arizona SRLs for the applicable analytes. If sediment samples exceed Arizona SRLs up to three soil borings will be advanced in the immediate vicinity of the drywell system at least 10 feet below the bottom of the drywell injection pipe. Soil samples from these borings will be collected in five-ft intervals and will be analyzed for constituents which exceeded Arizona SRLs in the settling chamber sediment samples..

3.0 FIELD SAMPLING PLAN, QUALITY ASSURANCE AND QUALITY CONTROL

This section provides general information regarding the methods that will be employed for various sampling activities to be completed during site activities. Sampling will be conducted for waste profiling and soil characterization. A summary of analytical methods, sample containers, preservatives, and holding times are provided in **Table 3**.

The following subsections provide details regarding sample collection and management, quality assurance (QA) and quality control (QC), surveying of sample locations, decontamination of non-disposable sampling equipment, and investigation-derived waste (IDW) management.

3.1 Collection of Samples

3.1.1 CRT Glass for Waste Characterization

CRT material will be sampled in order to determine if the CRT material exhibit a hazardous waste characteristic under 40 CFR part 261, subpart C. Each CRT waste characterization sample will be composed of one, six-part areal composite sample collected from each waste container (i.e. 20-yard roll-off). The sampler will lay out a grid of six individual cells at the surface of each roll off. A total of six individual samples, of equal volume, will be collected at a rate of one grid cell. Individual samples will be collected with a decontaminated or disposable scoop from the roll-off containers to a maximum depth of six inches below the surface of the CRT material. The waste unit container is presumed to be homogenized by the process of loading the CRT material from the stockpiled areas into the waste container, therefore no individual samples will be collected at depth greater than six inches from the surface of the waste container. The six individual samples will be placed into double plastic zipper bags, mechanically mixed to homogenize the waste characterization composite sample.

The samples will be submitted for analysis by USEPA Methods1311/6010C/7471 TCLP for analysis for Eight RCRA Metals. Due to variation in glass composition, no duplicate/replicate CRT glass samples will be collected and analyzed for the purposes of waste characterization.

3.1.2 Soil Characterization

Soil samples for laboratory analysis will be collected using a disposable scoop directly into laboratory supplied clean containers with a moisture-tight lid. The sample containers will then be placed into an ice chest with ice and cooled to less than or equal to 6 degrees Celsius (ºC). Ice chest lids will be sealed by labels or custody seals to prevent tampering.

Note: Non-disposable equipment, such as shovels or hand augers may be utilized to advance proposed sample to depth if soil is compact or hard. Non-disposable equipment is not expected to come into direct contact with soil samples recovered for laboratory analysis. However, the equipment will be decontaminated between sampling locations.

3.2 Quality Control

In order to attain data of sufficient quality to support project objectives, specific procedures are required to allow evaluation of data quality. These procedures and requirements for their evaluation are described in this section.

Field and Laboratory Quality Control Samples

Evaluation of field sampling procedures and laboratory equipment accuracy and precision requires the collection and evaluation of field and laboratory QC samples. **Table 4** summarizes the planned QC samples for this project. A description of each QC sample type is provided in the following sections.

3.2.1 Quality Control Analyses/Parameters Originated by the Laboratory

Method Blank

Method blanks are used to monitor each preparation or analytical batch for interference and/or contamination from glassware, reagents, and other potential sources within the laboratory. A method blank is a contaminant-free matrix (laboratory reagent water for aqueous samples or Ottawa sand, sodium sulfate, or glass beads [metals] for soil samples) to which all reagents are added in the same amount or proportions as are added to the samples. It is processed through the entire sample preparation and analytical procedures along with the samples in the batch.

There will be at least one method blank per preparation or analytical batch. If a target constituent is found at a concentration that exceeds one half the reporting limit, corrective action must be performed in an attempt to identify and, if possible, eliminate the contamination source. If sufficient sample volume remains in the sample container, samples associated with the blank contamination should be re-prepared and reanalyzed after the contamination source has been eliminated.

Laboratory Control Sample

The Laboratory Control Sample (LCS) will consist of a contaminant-free matrix such as laboratory reagent water for aqueous samples or Ottawa sand, sodium sulfate, or glass beads (metals) for soil samples spiked with known amounts of constituents that come from a source different than that used for calibration standards. Target constituents will be spiked into the LCS. The spike levels will be less than or equal to the midpoint of the calibration range. If LCS results are outside the specified control limits, corrective action must be taken, including sample re-preparation and re-analysis, if appropriate. If more than one LCS is analyzed in a preparation or analytical batch, the results for each LCS must be reported. Any LCS recovery outside QC limits affects the accuracy for the entire batch and requires corrective action.

Matrix Spike/Matrix Spike Duplicate

A sample matrix fortified with known quantities of specific compounds is called a matrix spike (MS). It is subjected to the same preparation and analytical procedures as the native sample. For this project, all target constituents will be spiked into the MS sample. Sample MS recoveries are used to evaluate the effect of the sample matrix on the recovery of the analytes of interest. A matrix spike duplicate (MSD) is a second aliquot of the MS sample, fortified at the same concentration as the MS. The Relative Percent Difference (RPD) between the results of the duplicate MSs measures the precision of sample results.

Project-specific samples will be used by the laboratory for the MS/MSD samples, which will be designated on the Chain-of-Custody (COC) form. The spike levels will be less than or equal to the midpoint of the calibration range. MS/MSD pairs will be collected at a frequency of 5 percent (%). MS/MSDs are required in every analytical batch regardless of the rate of collection and how samples are received at the laboratory.

3.2.2 Quality Control Analyses Originated by the Field Team

Field QC samples will be collected to determine the accuracy and precision of the analytical results. The QC sample frequencies are stated in the following subsections.

Field Duplicate

Field duplicates are collected in the field from a single aliquot of the sample to determine the precision and accuracy of the field team's sampling procedures. Field duplicates will be collected and analyzed at a frequency of 10% for soil characterization samples. Due to variation in CRT material composition, no duplicate/replicate CRT material samples will be collected and analyzed for the purposes of waste characterization.

3.2.3 Data Precision, Accuracy, Representativeness, Comparability and Completeness

Field QA/QC samples and laboratory internal QA/QC samples are collected and analyzed to assess the data's quality and usability. The following subsections discuss the parameters that are used to assess the data quality. The laboratory performing analysis of samples will use Arizona Data Qualifiers Revision 4.0.

Precision

The precision of laboratory analysis will be assessed by comparing the analytical results between MS/MSD and laboratory duplicate samples. The precision of the field sampling procedures will be assessed by reviewing field duplicate sample results. The RPD will be calculated for the duplicate samples using the equation:

$$\%RPD = \{(S - D)/[(S + D)/2]\} \times 100$$

where:

S = first sample value (original value)
D = second sample value (duplicate value)

The precision criteria for the duplicate samples will be ±50% in soil samples.

Accuracy

Accuracy of laboratory results will be assessed for compliance with the established QC criteria using the analytical results of method blanks, reagent/ preparation blanks, LCS and MS/MSD samples and surrogate

results, where applicable. Laboratory accuracy will be assessed for compliance with the established QC criteria and the analytical standard operating procedures. The percent recovery (%R) of LCSs will be calculated using the equation:

$$\%R = (A/B) \times 100$$

where:

A = the analyte concentration determined experimentally from the LCS
B = the known amount of concentration in the sample

Completeness

The data completeness of laboratory analyses results will be assessed for compliance with the amount of data required for decision making. Complete data are data that are not rejected. Data with qualifiers that indicate concentrations are estimated are deemed acceptable and can be used to make project decisions as qualified. The completeness of the analytical data is calculated using the equation:

$$\%Completeness = [(complete\ data\ obtained)/(total\ data\ planned)] \times 100$$

The percent completeness goal for this sampling event is 90% per method.

Representativeness

Representativeness is the degree to which sampling data accurately and precisely represent site conditions and is dependent on sampling and analytical variability and the variability of environmental media at the site. Representativeness is a qualitative "measure" of data quality.

Achieving representative data in the field starts with a properly designed and executed sampling program that carefully considers the project's overall objectives. Proper location controls and sample handling are critical to obtaining representative samples.

The goal of achieving representative data in the laboratory is measured by assessing accuracy and precision. The laboratory will provide representative data when the analytical systems are in control. Therefore, representativeness is a redundant objective for laboratory systems if sample chains of custody and sample preservation are properly documented, analytical procedures are followed and holding times are met.

Comparability

Comparability is the degree of confidence to which one data set can be compared to another. Comparability is a qualitative "measure" of data quality.

Achieving comparable data in the field starts with a properly designed and executed sampling program that carefully considers the project's overall objectives. Proper location controls and sample handling are critical to obtaining comparable samples.

The goal of achieving comparable data in the laboratory is measured by assessing accuracy and precision. The laboratory will provide comparable data when analytical systems are in control. Therefore, comparability is a redundant QC objective for laboratory systems if proper analytical procedures are followed and holding times are met.

Sensitivity

Sensitivity is the ability of the method or instrument to detect the contaminant of concern and other target compounds at the level of interest. Appropriate sampling and analytical methods were selected that have QC acceptance limits that support the achievement of established performance criteria. Assessment of analytical sensitivity will require thorough data validation. The laboratory practical quantitation limit will be established and verified as outlined in the analytical methods and in accordance with ADHS laboratory licensure rules. Where applicable, the laboratory quantitation limits required for this project must be below Arizona Residential SRLs. A comparison of the Toxicity Characteristic for waste characterization to laboratory reporting limits is provided in **Table 5.** A comparison of Arizona SRLs and Minimum GPLs to Laboratory Reporting Limits is provided in **Table 6**.

3.2.4 Data Verification and Data Review Procedures

Personnel involved in data validation will be independent of any data generation effort. The project chemist will be responsible for the oversight of data validation. Data validation will be performed when the data packages are received from the laboratory. Waste characterization samples will undergo Stage 2A validation. Post-Removal Soil Sampling Clearance data from field samples will undergo Stage 2b data validation with an additional 10% reviewed manually back to Stage 3 and/or 4 data validation depending on the analytical method. The following items will be addressed in the data validation report:

- A review of the data set narrative to identify any issues that the lab reported in the data deliverable.
- A check of sample integrity (sample collection, preservation, and holding times).
- An evaluation of basic QC measurements used to assess the accuracy, precision and representativeness of data, including QC blanks, LCSs, MS/MSDs, surrogate recovery when applicable, and field or laboratory duplicate results.
- A review of sample results, target compound lists, and detection limits to verify that project analytical requirements are met.
- Initiation of corrective actions, as necessary, based on the data review findings.
- Qualification of the data using appropriate qualifier flags, as necessary, to reflect data usability limitations.
- Qualifier flags, if required, will be applied to the electronic sample results.
- Any significant data quality problems will be brought to the attention of the project chemist.

Data Assessment

Limitations on data usability will be assigned, if appropriate, as a result of the validation process described earlier. The results of the data validation will be discussed in a separate report so that overall data quality can be verified through the precision, accuracy, representativeness, comparability, and completeness of sample results.

3.3 Sample Identification

Each sample ID will consist of a combination of source of sample, increment number, type of sample, and depth of sample collection. Following are example sample numbers and a description of the sample identifiers to be used during implementation of this work plan.

Example Glass Waste Characterization Sample ID:

CRT##-XXXX-093019

Location: CRT## (CRT Pile Number)

4 Digit Bin Identification Code: XXXX (Bin ID located on the roll off container, if no number is present on the bin, a unique bin identification number will be assigned)

Date Collected: 100119 (mmddyy)

Example Post–Removal Soil Characterization Sample ID:

XX-SC-0.0-0.5D-SO

2 Digit Grid Number: XX

Purpose of Sample: SC (site characterization)

Sample Depth: Depth of samples will be designated with a 4-digit number, the first 2 digits starting depth, second 2 digits bottom depth (in this case 0.0 to 0.5 feet)

Sample Type: D (discrete) or C (composite) (in this case it's discrete)

Sample Matrix: SO (soil) or Duplicate (DUP)

Example Duplicate of Post–Removal Soil Characterization Sample ID:

02-SC-0.0-0.5D-DUP

3.4 Chain-of-Custody

COC forms will be completed and will accompany each sample at all times. Data on the COC will include the sample ID (as described in Section 3.3), depth interval, date sampled, time sampled, project name, project number, and signatures of those in possession of the sample. COC forms will accompany those samples shipped to the designated laboratory so that sample possession information can be maintained. The field team will retain a separate copy of the COC at the field office. Additionally, the sample ID, date and time collected, collection location, and analysis requested will be documented in the field log book as discussed in Section 3.6.

3.5 Packaging and Shipping Procedures

All samples will be shipped by overnight air freight to the laboratory or hand-delivered. Unless otherwise indicated, samples will be treated as environmental samples, shipped in heavy duty coolers, packed in materials to prevent breakage, and preserved with ice in sealed plastic bags. Each shipment will include the appropriate field QC samples (i.e., trip blanks, duplicates, and rinsates).

Corresponding COC forms will be placed in waterproof bags and taped to the inside of the cooler lids. All coolers will be taped shut and a custody seal will be placed over the tape to prevent tampering.

3.6 Sample Documentation

Sample control and tracking information will be recorded in bound dedicated field logbooks and will include the following information: sample number and location, date, sampler's name, method of sampling, sample depth, soil sample physical description, ambient weather conditions, and miscellaneous observations. At the conclusion of each day in the field, the sampling team leader will review each page of the logbook for errors and omissions. He or she will then date and sign each reviewed page.

3.7 Field Instrument Calibration

All field instruments will be calibrated following manufacturer recommended calibration procedures and frequencies. Field instrument calibrations will be recorded in a designated portion of the field logbook at the time of the calibration. Adverse trends in instrument calibration behavior will be corrected.

3.8 Survey of Sample Locations

The location of each sample collected, including pre- and post-removal soil samples, will be surveyed using appropriate instrumentation and procedures to obtain horizontal accuracy of less than one (1) meter. A Trimble GeoXH with Arcpad 10, or equivalent, will be utilized to collect the soil sample locations. Data will be collected within the Trimble GeoXH unit and retrieved following field activities using the Windows Mobil Device Center and incorporated into a project specific database. Survey data will be supplied in the Final Report in Arizona State Plane and Universal Transverse Mercator coordinates.

3.9 Decontamination Procedures

Decontamination of reusable sampling equipment, if used, and personnel will be performed to ensure chemical analyses reflect actual concentrations at sampling locations by maintaining the quality of samples and preventing cross-contamination. The standard equipment decontamination procedures to be used during completion of soil sampling activities are as follows:

- Hand augers and reusable drive samplers are not expected to come into direct contact with soil samples recovered for laboratory analysis. However, the equipment will be decontaminated between boreholes.
- A simple decontamination wash pad shall be constructed using plastic sheeting which is rolled up at the ends (typically with lumber) to contain water. The pad shall be large enough to hold multiple 5-gallon buckets and equipment that requires decontamination and to provide ample working area within the pad (roughly 8 ft by 8 ft).
- Sampling equipment will be washed using a bristle brush in potable water to which Alconox or Liquinox laboratory detergent has been added. All items will then be thoroughly rinsed with potable water and allowed to air dry.
- Decontamination should be performed on the plastic sheeting of the temporary decontamination pad. Accumulated wash and rinse water will be left within the decontamination pad and allowed to evaporate. If IDW water remains in the decontamination pad following the completion of field activities, the accumulated wash and rinse IDW water shall be sampled to make a hazardous waste determination. If laboratory results for water IDW samples indicate concentrations are not determined to be hazardous for the analyzed compounds, the IDW water will be added to the containerized impacted-CRT soil prior to characterization. If laboratory results for IDW water

indicate concentrations are determined to be hazardous, the water will be disposed of properly offsite at a hazardous waste facility.

- The plastic sheeting and associated pad materials shall be sampled to make a hazardous waste determination and shall be disposed of at an approved facility based on the determination.
- After field cleaning, equipment will be handled only by personnel wearing clean gloves to prevent re-contamination. The equipment will be moved away from the cleaning area to prevent re-contamination. If the equipment is not to be immediately reused it will be covered with plastic sheeting or wrapped in aluminum foil to prevent re-contamination. The area where the equipment is stored prior to re-use must be free of contaminants.

3.10 Investigation-Derived Waste Disposal

IDW anticipated to be generated during sampling activities may include disposable sampling equipment and PPE. Used IDW will be placed in polyethylene trash bags, which will be placed in transport containers along with excavated waste destined for landfill disposal.

Table 3 Summary of Analytical Methods, Sample Containers, Preservation, and Holding Times

Target Analytes	Matrix	Analytical Method (USEPA SW846)	Sample Volume/Container	Preservative	Holding Time
CRT Glass Waste Characterization					
Eight RCRA Metals	Glass	1311/6010C/7471	100 grams (minimum) in double plastic zipper bags	None	Hg-28 days, All Others - 6 Months
Soil Waste Profile Sampling					
Eight RCRA Metals (arsenic, barium, cadmium, total chromium, lead, mercury, selenium, and silver)	Soil	1311/6010C/7471	8-oz Glass Jar	Cool to ≤ 6°C	Hg-28 days, All Others - 6 Months
Volatile Organic Compounds (VOCs)	Soil	8260B (AZ List)	3 X 5 grams	Methanol Cool to ≤ 6°C	14 days
Polycyclic Aromatic Hydrocarbons (PAHs)	Soil	8270C-SIM	4-oz Glass Jar	Cool to ≤ 6°C	14 days
Post-Removal Soil Characterization Sampling					
13 Priority Pollutant Metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium and zinc) and barium	Soil	6010 / 6020	4-oz Glass Jar	Cool to ≤ 6°C	6 Months
Eight RCRA Metals	Soil (beneath surface covering	6010C/7471	4-oz Glass Jar	Cool to ≤ 6°C	Hg-28 days, All Others - 6 Months
Drywell Investigation					
VOCs including benzene, toluene, ethylbenzene and xylene	Sediment	8260B (AZ List)	3 X 5 grams	Methanol Cool to ≤ 6°C	14 days
PAHs	Sediment	8270C-SIM	4-oz Glass Jar	Cool to ≤ 6°C	14 days
13 Priority Pollutant Metals plus barium	Sediment	6010 / 6020	4-oz Glass Jar	Cool to ≤ 6°C	Hg-28 days, All Others - 6 Months

Table 3 Summary of Analytical Methods, Sample Containers, Preservation, and Holding Times (cont.)

Target Analytes	Matrix	Analytical Method (USEPA SW846)	Sample Volume/Container	Preservative	Holding Time
Investigation-Derived Waste					
Eight RCRA Metals	Plastic	1311/6010C/7471	100 grams (minimum) 8-oz Glass Jar	None	Hg-28 days, All Others - 6 Months
Eight RCRA Metals	Water	SW846 6010 or EPA 200.7	250 mL plastic bottle	Cool ≤ 6°C HNO3 to pH<2	6 months

Notes:
Samples will be analyzed using the most recently published versions of the analytical methods.
USEPA = U.S. Environmental Protection Agency
oz = ounce
RCRA = Resource Conservation and Recovery Act

Table 4 Quality Control Samples for Precision and Accuracy

Quality Control Type	Precision	Accuracy	Minimum Frequency
Field	Relative Percent Difference (RPD) Goal of ≤ 20%	Duplicate Sample Laboratory Analysis	One every 10 samples (10%), applicable only to soil samples
Laboratory	Matrix Spike/Matrix Spike Duplicate (RPD goal of ≤ 20%)	Method Blank	One per batch, at least one every 20 samples (rounded up) (5%)
		Laboratory Control Sample or Blank Spike	One per batch, at least one every 20 samples (rounded up) (5%)
		Matrix Spike Percent Recovery (Percent Recovery Goal of 80% to 120%)	One every 20 samples (rounded up) (5%)
		Surrogate Sample (for organics only)	One every 20 samples (rounded up) (5%)

Table 5 Comparison of Waste Characterization Requirements for Hazardous and Non-Hazardous Disposal to Laboratory Reporting Limits

Chemical	Maximum Concentration of Contaminants for Toxicity Characteristic (mg/L)	Reporting Limit (mg/L)
Arsenic	5.0	0.100
Barium	100.0	0.100
Cadmium	1.0	0.100
Chromium	5.0	0.100
Lead	5.0	0.100
Mercury	0.2	0.0100
Selenium	1.0	0.100
Silver	5.0	0.100

Notes:
mg/L = milligrams per liter

Table 6 Comparison of Arizona SRLs and Minimum GPLs to Laboratory Reporting Limits

Chemical	Arizona Residential SRLs[1]			Minimum Groundwater Protection Limits [2]	Reporting Limit
	Carcinogen 10^{-6} Risk	Carcinogen 10^{-5} Risk	Non-Carcinogen		
	(mg/kg)				
Metals					
Lead	--	--	400	290	0.500
Antimony	--	--	31	35	2.00
Arsenic	10	10	10	290	2.00
Barium	--	--	15,000	12,000	0.500
Beryllium	--	--	150	23	0.200
Cadmium	--	--	39	29	0.500
Chromium III	--	--	120,000	590	1.00
Copper	--	--	3,100	--	2.00
Mercury	--	--	23	12	0.03
Nickel	--	--	1,600	590	2.00
Selenium	--	--	390	290	2.00
Silver	--	--	390	--	1.00
Thallium	--	--	5.2	12	2.00
Zinc	--	--	23,000	--	5.00
Volatile Organic Compounds (VOCs)					
Acetone	--	--	14000	--	0.625
Acrylonitrile	0.21	2.1	--	--	0.313
Benzene	0.65	--	--	0.71	0.025
Bromobenzene	--	--	28	--	0.313
Bromodichloromethane	0.83	8.3	--	--	0.0625
Bromoform	69	690	--	--	0.625
Bromomethane	--	--	4	--	0.313
1,3-Butadiene	0.058	0.58			0.625
n-Butylbenzene	--	--	240	--	0.313
sec-Butylbenzene	--	--	220	--	0.313
tert-Butylbenzene	--	--	390	--	0.125
Carbon Disulfide	--	--	360	--	0.313
Carbon Tetrachloride	0.25	2.5	2.2	1.6	0.125
Chlorobenzene	--	--	150	22	0.0625
Chlorodibromomethane	1.1	11	--	--	0.0625
Chloroethane	3	30	--	--	0.125
Chloroform	0.94	9.4	--	--	0.0625
Chloromethane	--	--	48	--	0.313

Table 6 Comparison of Arizona SRLs and Minimum GPLs to Laboratory Reporting Limits (continued)

Chemical	Arizona Residential SRLs[1]			Minimum Groundwater Protection Limits [2]	Reporting Limit
	Carcinogen 10^{-6} Risk	Carcinogen 10^{-5} Risk	Non-Carcinogen		
	(mg/kg)				
VOCs (cont.)					
2-Chlorotoluene	--	--	160	--	0.0625
Cyclohexane	--	--	140	--	0.0625
1,2-Dibromo-3-Chloropropane	0.53	5.3	2	0.015	0.625
1,2-Dibromoethane	0.029	0.29	--	0.0033	0.0625
Dibromomethane	--	--	67	--	0.125
1,2-Dichlorobenzene	--	--	600	72	0.125
1,3-Dichlorobenzene	--	--	530	--	0.125
1,4-Dichlorobenzene	3.5	35	--	9.5	0.125
Dichlorodifluoromethane	--	--	94	--	0.0625
1,1-Dichloroethane	--	--	510	--	0.0625
1,2-Dichloroethane	0.28	2.8	--	0.21	0.0625
1,1-Dichloroethene	--	--	120	0.81	0.0625
cis-1,2-dichloroethene	--	--	43	4.9	0.0625
trans-1,2-Dichloroethene	--	--	69	8.4	0.125
1,2-Dichloropropane	0.34	3.4	--	0.28	0.125
1,3-Dichloropropane	--	--	100	--	0.125
Dicyclopentadiene	--	--	1	--	0.313
Ethylbenzene	--	--	400	120	0.0625
Hexachloro-1,3-Butadiene	7	70	18	--	0.625
n-Hexane	--	--	110	--	0.125
Isopropylbenzene	--	--	92	--	0.0625
2-Butanone (MEK)	--	--	23,000	--	0.625
Methylene Chloride	9.3	93	--	--	0.625
4-Methyl-2-Pentanone (MIBK)	--	--	5,300	--	0.625
Methyl Tert-butyl Ether (MTBE)	32	320	--	--	0.025
Methyl Cyclohexane	--	--	230	--	0.125
Naphthalene	--	--	56	--	0.313
n-Propylbenzene	--	--	240	--	0.125
Styrene	--	--	1,500	36	0.313
1,1,1,2-Tetrachloroethane	3.2	32	--	--	0.0625
1,1,2,2-Tetrachloroethane	0.42	4.2	--	--	0.0625
1,1,2-Trichlorotrifluoroethane	--	--	5,600	--	0.0625

Table 6 Comparison of Arizona SRLs and Minimum GPLs to Laboratory Reporting Limits (continued)

Chemical	Arizona Residential SRLs[1]			Minimum Groundwater Protection Limits [2]	Reporting Limit
	Carcinogen 10^{-6} Risk	Carcinogen 10^{-5} Risk	Non-Carcinogen		
	(mg/kg)				
VOCs (cont.)					
Tetrachloroethene	0.51	5.1	--	1.3	0.0625
Toluene	--	--	650	--	0.125
1,2,4-Trichlorobenzene	--	--	62	--	0.313
1,1,1-Trichloroethane	--	--	1,200	1	0.0625
1,1,2-Trichloroethane	0.74	7.4	--	--	0.0625
Trichloroethene	3	30	17	0.61	0.025
Trichlorofluoromethane	--	--	390	--	0.0625
1,2,3-Trichloropropane	0.005	0.05	--	--	0.313
1,2,4-Trimethylbenzene	--	--	52	--	0.125
1,3,5-Trimethylbenzene	--	--	21	--	0.125
Vinyl Chloride	0.085	--	--	--	0.0625
Xylenes, Total	--	--	270	2200	0.163
Polynuclear Aromatic Hydrocarbons (PAHs)					
Anthracene	--	--	22,000	--	0.00600
Acenaphthene	--	--	3,700	--	0.00600
Benzo(a)anthracene	0.69	6.9	--	--	0.00600
Benzo(a)pyrene	0.069	0.69	--	--	0.00600
Benzo(b)fluoranthene	0.69	6.9	--	--	0.00600
Benzo(k)fluoranthene	6.9	69	--	--	0.00600
Chrysene	68	680	--	--	0.00600
Dibenz(a,h)anthracene	0.069	0.69	--	--	0.00600
Fluoranthene	--	--	2,300	--	0.00600
Fluorene	--	--	2,700	--	0.00600
Indeno(1,2,3-cd)pyrene	0.69	6.9	--	--	0.00600
Naphthalene	--	--	56	--	0.0200
Pyrene	--	--	2,300	--	0.00600
2-Chloronaphthalene	--	--	110	--	0.0200

Notes:
1 = Arizona Administrative Code Title 18, Chapter 7, Appendix A, effective May 5, 2007
2 = A Screening Method to Determine Soil Concentrations Protective of Groundwater Quality (ADEQ, 1996)
mg/kg = milligrams per kilogram
-- = Not Established
SRL = Soil Remediation Levels

4.0 SCHEDULE

The tentative project schedule, including progress and reporting deliverables, is provided in **Appendix B**.

It is anticipated that field work will take approximately five to six months to compete. The tentative schedule is based on an operational disposal rate of 130 tons per day of hazardous waste and 180 tons per day of non-hazardous waste. Qualities of hazardous and non-hazardous waste are estimated based on volume. The relative ratio of hazardous and non-hazardous waste is subject to change based on waste characterization sampling. Increases in the ratio of hazardous to non-hazardous waste and/or overall increase in mass of CRT disposal may increase throughout duration of the field activities.

5.0 COMMINUTY INVOLVEMENT

As part of community involvement activities required by A.R.S. Section 49-176(A)(2)(a), signage will be displayed on-site during removal activities and posted on the main entry gate on the southwest side of the Site. A copy of the proposed signage language is provided in **Appendix C**.

6.0 PHASE 6: REPORTING

6.1 Monthly Progress Reporting

A Progress Report including a revised project schedule will be submitted monthly via email to the VRP Project Manager beginning after the completion of the site preparation activities. Progress reports will include a summary of site activities for the previous month and including quantities of CRT disposed of at each disposal facility, the estimated percent removal complete and anticipated activities for the next month.

6.2 Removal Action Completion / Site Characterization Report

Following completion of the CRT glass removal, impacted soil removal and following receipt of all disposal and analytical laboratory data, Wood will prepare a Removal Action Completion / Site Characterization Report. The report will provide a summary of field activities and will include copies of all received waste profiles, disposal documents and a load transportation summary. The soil characterization activities following the removal actions will also be documented in this report. The report will present the analytical results with relevant comparisons to current Arizona Residential Soil Residential Levels and / or groundwater protection levels, as appropriate.

The report will be submitted via email to VRP within 45 days of receipt of all laboratory analytical results and waste disposal / field documentation. The laboratory and disposal documents will be submitted on a compact disc. The Report will be submitted to the ADEQ VRP and will allow 45 calendar days for VRP review and comment. The Revised Report will be submitted within 14 days of receipt of approval from the VRP. Coordination with Berendo/Harrison and regulatory agencies will be conducted by teleconference as needed to resolve all comments in a timely manner.

7.0 REFERENCES

Arizona Department of Environmental Quality (ADEQ), 1996. Screening Method to Determine Soil Concentration Protective of Groundwater Quality. September.

Metals Treatment Technologies LLC (MT2), 2019. Draft Final Report Onsite Field Study: ECOBOND® application for lead-containing CRT glass materials. June.

Wood Environment & Infrastructure Solutions, Inc. (Wood), 2019. Draft Evaluation of Removal Action Alternatives for Cathode Ray Tube (CRT) Glass Located Outside the Closed Loop 59th Avenue Facility, 435 South 59th Avenue, Phoenix, Arizona. VRP Site Code: 513246-00. August.

FIGURES

0 500 1,000 2,000 Feet

Job No.:	14-2018-2030
PM:	TO
Date:	9/10/2019
Scale:	1" = 1000'

N

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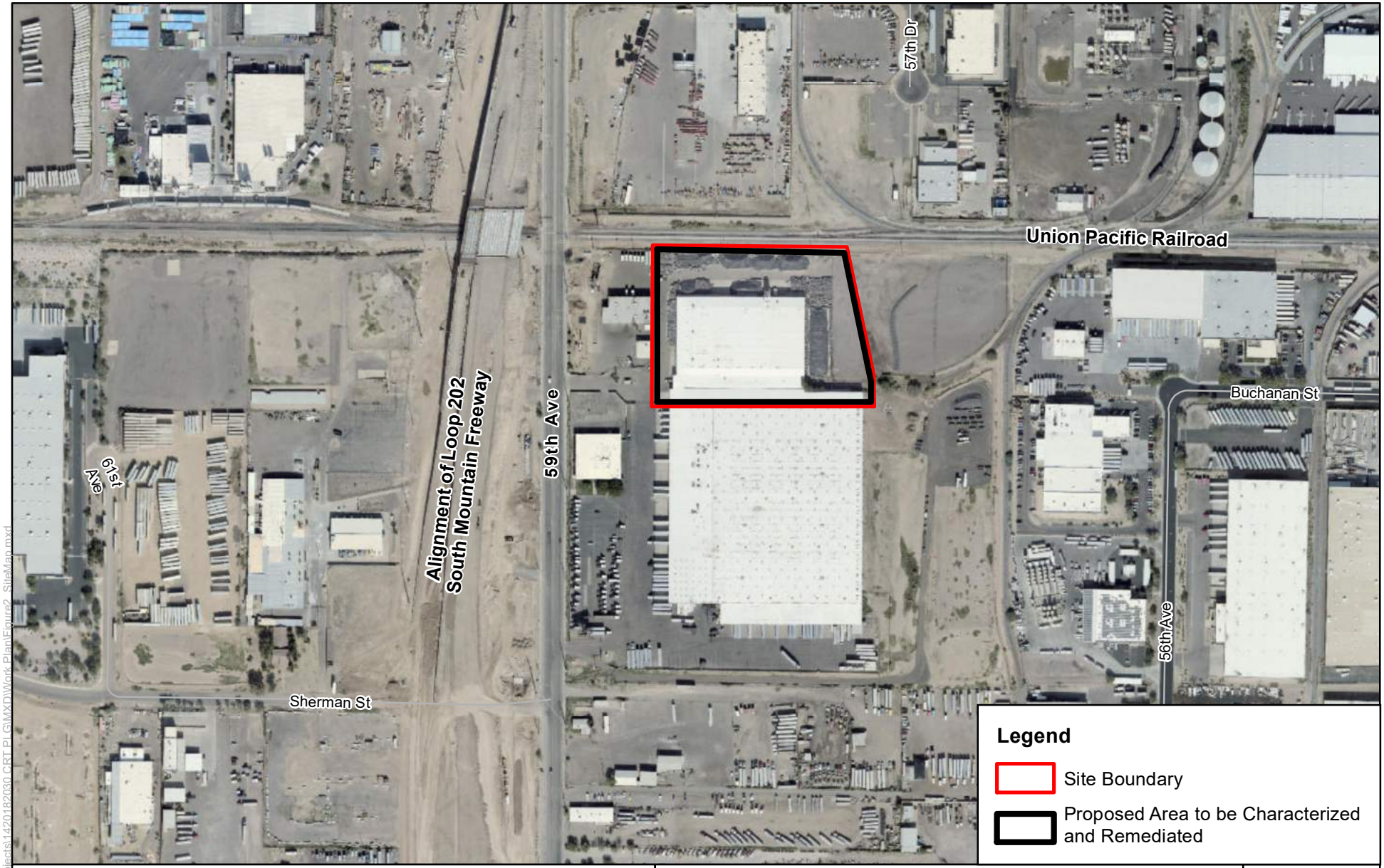
Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Phoenix, Arizona 85043

Vicinity Map

FIGURE
1

wood.

Path: X:\Projects\2018 Projects\14-2018-2030 CRT PLC\MXD\Work Plan\Figure1_VicinityMap.mxd



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Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Phoenix, Arizona 85043

Site Map

FIGURE **2**

wood.

Path: X:\Projects\2018 Projects\14-2018-2030 CRT PLC\MXD\Work Plan\Figure2_SiteMap.mxd

Area Name	Perimeter (ft)	Area (ft^2)	Volume (yd^3)
Pile 1	476.84	8898.55	922.21
Pile 2	287.40	4918.61	1324.47
Pile 3	206.69	2421.41	203.25
Pile 4	287.40	3664.49	332.73
Pile 5	56.73	183.319	18.26
Pile 6	199.64	2475.78	104.99
Pile 7	130.91	861.582	76.42
Pile 8	273.49	3672.21	733.02
Pile 9	276.15	4396.15	739.53
Pile 10	154.56	1061.39	82.72
Pile 11	463.62	2179.45	140.51
Pile 12	301.28	3069.09	196.32
Pile 13	174.61	1752.49	160.09
Pile 14	150.00	1308.88	90.57
Pile 15	87.01	407.183	43.77
Pile 16	350.10	3970.85	198.82
Pile 17	572.11	16407.8	3446.74
Pile 18	157.84	1117.99	130.15

Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop
59th Avenue Warehouse
435 South 59th Avenue, Phoenix, AZ 85043

FIGURE **3**

Cathode Ray Tube Exterior Storage Layout

Job No.	14-2018-2030
PM:	RP
Date:	12/16/2019
Scale:	As Shown

wood.

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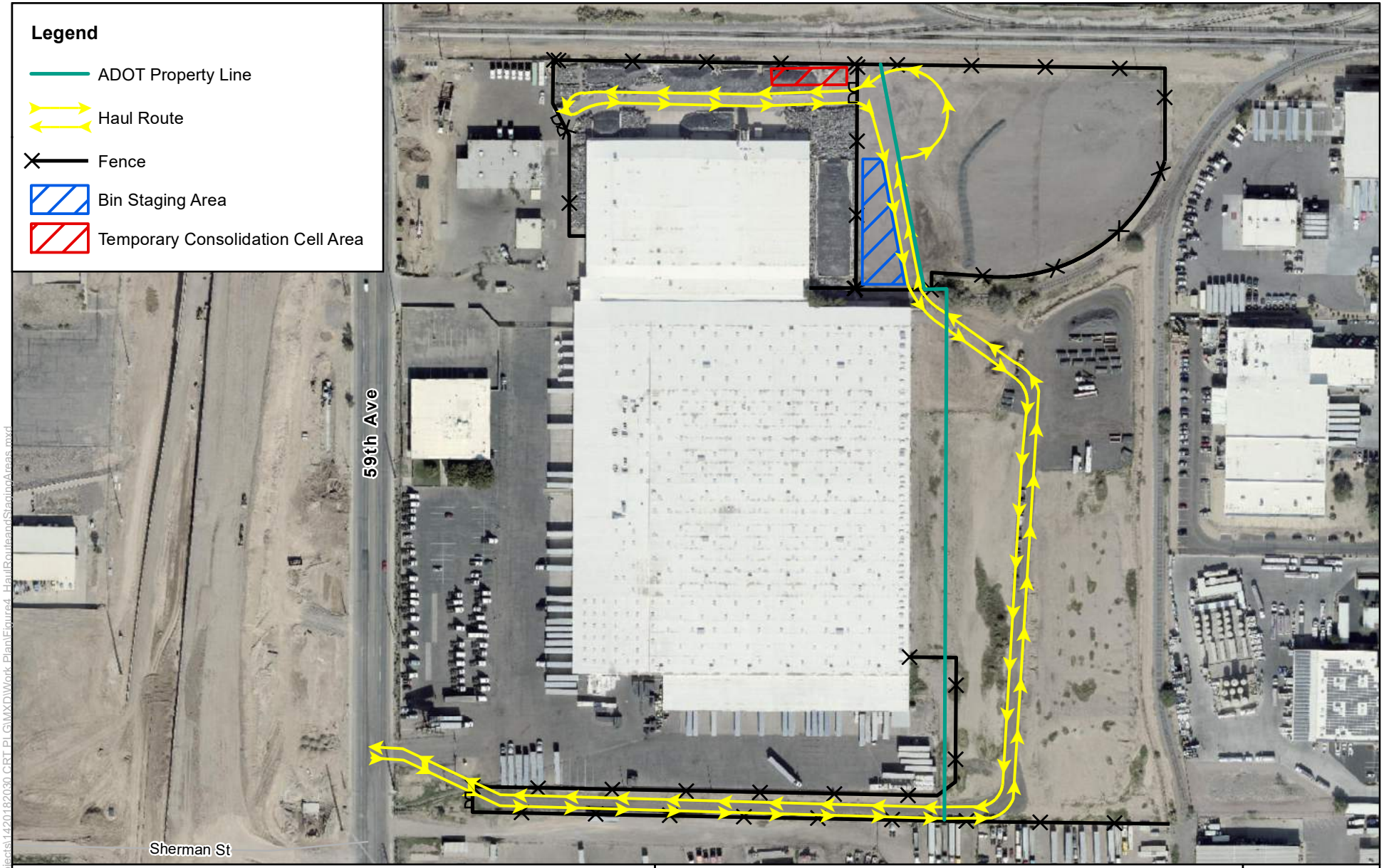
X:\Projects\2018 Projects\14201820030 CRT PLG\MXD\Work Plan\Figure3_CathodeRayTubeExteriorStorageLayout_v2



0 115 230 460 Feet

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Date:	12/16/2019
Scale:	1" = 230'

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Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Phoenix, Arizona 85043

Haul Route and Equipment Staging Area

FIGURE **4**

wood.

Path: X:\Projects\2018 Projects\14201820300 CRT PLGMXD\Work Plan\Figure4_HaulRouteandStagingAreas.mxd

0 50 100 200 Feet

Job No.:	14-2018-2030
PM:	TO
Date:	3/24/2020
Scale:	1" = 100'

N

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Removal Action Work Plan
Cathode Ray Tube Material
Non-Time-Critical Exterior Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Phoenix, Arizona 85043

Soil Characterization Sampling Location Map

FIGURE **5**

wood.

Path: X:\Projects\2018 Projects\14201812030 CRT PI GIMXD\Work Plan\Figure5_SampleGridMap.mxd

APPENDIX A

SURVEY REPORT

PROJECT: REMOVAL ACTION 435/445 South 59TH AVENUE WAREHOUSE

Authorizing Div. Project No. 1420182030
Wood Environment & Infrastructure Solutions
Survey Report

SUMMARY

Narrative

Wood Survey Department was tasked with the performance of creating a quantities report for the materials, Cathode Ray Tube (CRT) contained outside of the warehouse at 59th Avenue location. The materials are stored in cardboard containers approximately 4'x4'x4' individually placed on its own pallet stacked at varying heights ranging from a single pallet to two (2) pallets in height and loose crushed stockpiles. Having completed an initial site inspection, it was determined a combination of survey methods would be applied to this project.

Survey Methods:

- Conventional Robotic Total Station to define the footprint and limits of concrete barriers that surround and help contain a portion of the stockpiled CRT materials outside of the warehouse. Also, to collect data on aerial flight targets in preparation for Small Unmanned Aerial System (sUAS) flights.
- Trimble GPS System was also used to supplement the robotic total station information where needed.
- Small Unmanned Aerial System (sUAS) DJI Phantom 4 Pro V2.0 was used to collect aerial photography and video of the stockpiled CRT materials. The purpose of the flights was to capture data used to generate point cloud data and compile an ortho-mosaic image used to calculate volumes of the CRT stockpiled materials.

Data Processing:

The information from the DJI Phantom 4 aerial vehicle was input into PIX 4D software where the point cloud data and ortho-mosaic image were generated, and the volumes computed. Upon processing the data with Trimble Business Center and AutoCAD Civil 3D 2016 the volume of the concrete barriers was calculated. Once volumes of the stockpiled CRT materials were obtained from the Pix-4D software the volumes for the concrete barriers were removed from the appropriate CRT stockpiles, the results represent the material itself. The volume for the boxed CRT materials include the containers.

Control Datum:

Horizontal datum is Arizona State Plane Coordinate System NAD83, Zone: Arizona Central

Vertical datum is North American Vertical Datum 1988 (NAVD88).

WOOD AERIAL SURVEY-CRT 59TH AVENUE

WOOD AERIAL SURVEY-CRT 59TH AVENUE

Area Name	Perimeter (ft)	Area (ft²)	Volume (yd³)
Pile 1	174.61	1752.49	160.09
Pile 2	150.00	1308.88	90.57
Pile 3	87.01	407.18	43.77
Pile 4	130.91	861.58	76.42
Pile 5	350.10	3970.85	198.82
Pile 6	154.56	1061.39	82.72
Pile 7	276.15	4396.15	739.53
Pile 8	273.49	3672.21	733.02
Pile 9	287.40	4918.61	1324.47
Pile 10	287.40	3664.49	332.73
Pile 11	56.73	183.32	18.26
Pile 12	206.69	2421.41	203.25
Pile 13	199.64	2475.78	104.99
Pile 14	463.62	2179.45	140.51
Pile 15	301.28	3069.09	196.32
Pile 16	476.84	8898.55	922.21
Pile 17	572.11	16407.76	3446.74
Pile 18	157.84	1117.99	130.15

N

Closed Loop Refining & Recovery
435 South 59th Avenue, Suite 120
Phoenix, Arizona 85043

Cathode Ray Tube Exterior Storage Layout

FIGURE 1

Job No.:	1420182030
PM:	TO
Date:	1/21/2019
Scale:	Not to Scale

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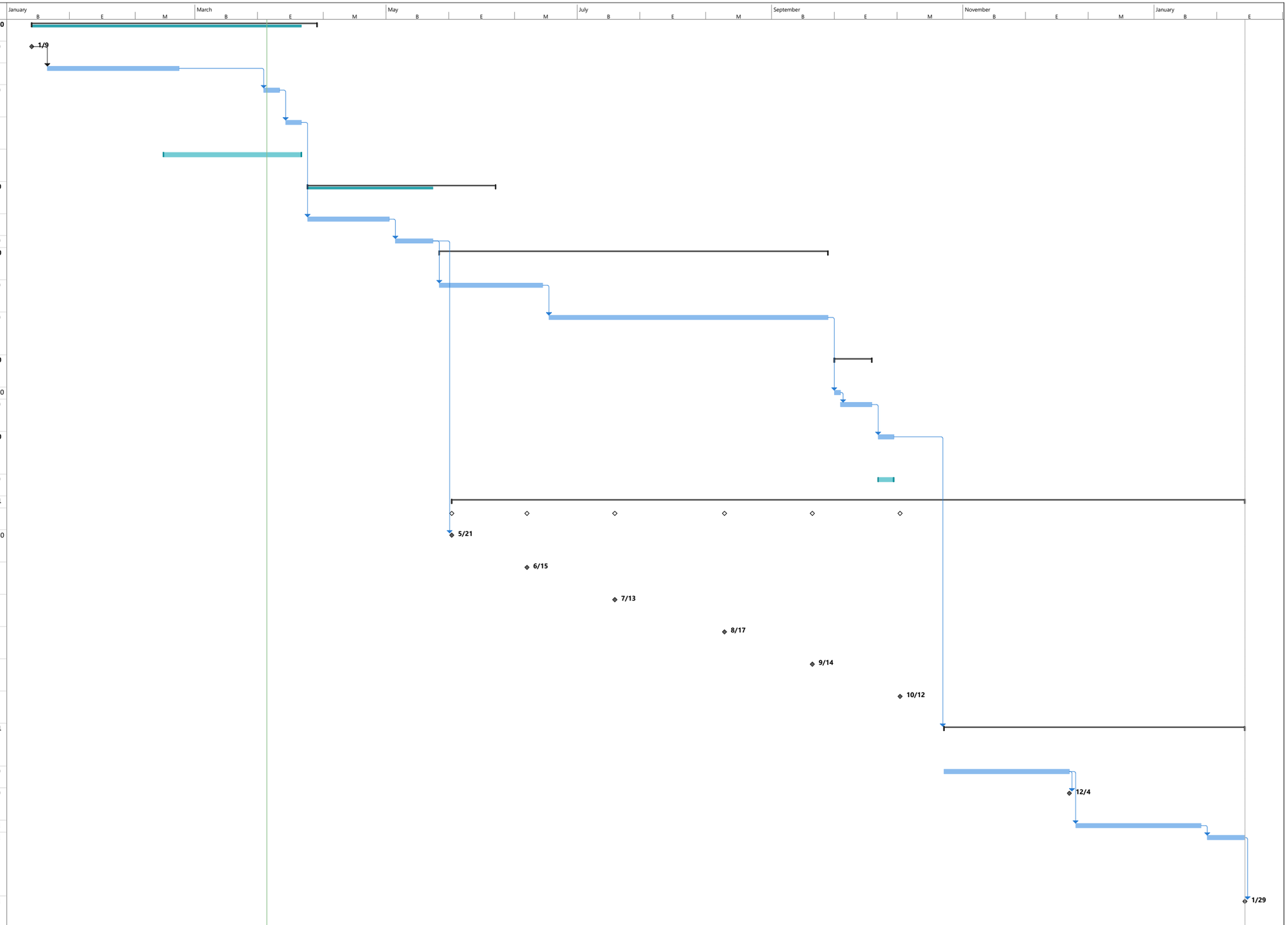
wood.

APPENDIX B

PROJECT SCHEDULE

ID	Task Mode	Task Name	Duration	Start	Finish
1		**Removal Action Work plan**	**65 days**	**Thu 1/9/20**	**Wed 4/8/20**
2		Submission of Work Plan to VRP	0 days	Thu 1/9/20	Thu 1/9/20
3		VRP Review of Work Plan to VRP	30 days	Tue 1/14/20	Mon 2/24/20
4		Response to VRP Review of Work Plan	5 days	Mon 3/23/20	Fri 3/27/20
5		VRP Review and Acceptance of Work Plan	5 days	Mon 3/30/20	Fri 4/3/20
6		**Removal Action Contractor Procurement**	**32 days**	**Thu 2/20/20**	**Fri 4/3/20**
7		**Phase 1 - Planning, Permitting, and Site Preparation**	**44 days**	**Mon 4/6/20**	**Thu 6/4/20**
8		Planning and Permitting	20 days	Mon 4/6/20	Fri 5/1/20
9		Site Preparation	10 days	Mon 5/4/20	Fri 5/15/20
10		**Phase 2: CRT Glass Removal, Transport and Disposal**	**90 days**	**Mon 5/18/20**	**Fri 9/18/20**
11		Boxed CRT Disposal as Hazardous Waste	25 days	Mon 5/18/20	Fri 6/19/20
12		Stockpiled CRT Glass Characterization and Disposal	65 days	Mon 6/22/20	Fri 9/18/20
13		**Phase 3: Soil Removal, Transport and Disposal**	**10 days**	**Mon 9/21/20**	**Fri 10/2/20**
14		Soil Excavation	2 days	Mon 9/21/20	Tue 9/22/20
15		Stockpile Soil Characterization and Disposal	8 days	Wed 9/23/20	Fri 10/2/20
16		**Phase 4 : Post-Removal Soil Characterization Sampling**	**5 days**	**Mon 10/5/20**	**Fri 10/9/20**
17		Phase 5: Drywell Investigation	5 days	Mon 10/5/20	Fri 10/9/20
18		**Phase 6: Reporting**	**181 days**	**Thu 5/21/20**	**Fri 1/29/21**
19		**Monthly Progress Reporting**	**101 days**	**Thu 5/21/20**	**Mon 10/12/20**
20		Monthly Progress Reporting 1	0 days	Thu 5/21/20	Thu 5/21/20
21		Monthly Progress Reporting 2	0 days	Mon 6/15/20	Mon 6/15/20
22		Monthly Progress Reporting 3	0 days	Mon 7/13/20	Mon 7/13/20
23		Monthly Progress Reporting 4	0 days	Mon 8/17/20	Mon 8/17/20
24		Monthly Progress Reporting 5	0 days	Mon 9/14/20	Mon 9/14/20
25		Monthly Progress Reporting 6	0 days	Mon 10/12/20	Mon 10/12/20
26		**Removal Action Completion/Site Characterization Report**	**70 days**	**Mon 10/26/20**	**Fri 1/29/21**
27		RA/SC Report Preparation	30 days	Mon 10/26/20	Fri 12/4/20
28		Submission of RA/SC Report to VRP	0 days	Fri 12/4/20	Fri 12/4/20
29		VRP Review	30 days	Mon 12/7/20	Fri 1/15/21
30		Response to VRP RA/SC Report Review and Revised Report Preparation	10 days	Mon 1/18/21	Fri 1/29/21
31		Submission of Revised RA/SC Report to VRP	0 days	Fri 1/29/21	Fri 1/29/21



Project: Draft 59th Avenue RA S
Date: Tue 3/24/20

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

APPENDIX C

PROPOSED ON-SITE SIGNAGE

Voluntary Remediation Program Site

Site Code: 513246-00

Berendo Property and Harrison Properties, L.L.C. will be conducting a removal and disposal of cathode ray tube material and impacted soil.

This work will be performed under the Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program

For more Information please contact:

Site Contact: TBD
ADEQ Contact: Nichole Osuch (602) 771-2300

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Douglas A. Ducey
Governor

Misael Cabrera
Director

Via U.S. Mail

April 13, 2020
VRP 20-148

Berendo Property, a California general partnership, and Harrison Properties, L.L.C.
Attention: Mr. James Harrison
5112 North 40th Street, Suite 105
Phoenix, Arizona 85018

Re: Review of (revised) Non-Time-Critical Removal Action Work Plan
Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Suite 120 and 130
Phoenix, Arizona 85043
VRP Site Code: 513246-00

Dear Mr. Harrison:

The Arizona Department of Environmental Quality (ADEQ), Voluntary Remediation Program (VRP) has reviewed the document titled (revised) *Non-Time-Critical Removal Action Work Plan* (the Work Plan) prepared by Wood Environment & Infrastructure Solutions, Inc. on behalf of Berendo Property, a California general partnership, and Harrison Properties, L.L.C. (Berendo/Harrison), and dated March 27, 2020. The Work Plan proposes profiling, removal, and disposal of Cathode Ray Tube (CRT) glass stored in boxes and piles in addition to soil sampling. The VRP has the following comments:

1. Please note that if Toxicity Characteristic Leaching Procedure (TCLP) laboratory analytical results for CRT material and/or soil exceed, or are equal to the applicable TCLP Maximum Concentration provided at 40 Code of Federal Regulations (CFR) part 261.24, Table 1, the CRT material and/or soil must be considered hazardous.
2. On Table 2, the VRP notes Phase 3 includes waste characterization sampling.
3. On Table 2, the VRP notes Phase 5 monthly progress reporting includes project schedule updates.
4. Please submit the project-specific Health and Safety Plan for review and comment prior to commencement of field activities.
5. Sections 2.2 and 2.2.1 appear to contain conflicting statements and proposed actions. Section 2.2 states boxed material will be removed and disposed as hazardous waste. Characterization of this material is not proposed in this statement. However, Section 2.2.1, states that after the boxed material is placed in end dump trucks, Wood will collect discreet samples of the CRT material to be analyzed for the eight RCRA Metals….to develop a hazardous waste profile. Hence, the discrepancy. Therefore, for clarification purposes, indicate whether:
    a. the 6,197,000 pounds of boxed CRT glass will automatically be regarded as hazardous waste and sent to Nevada for disposal, or

b. the 6,197,000 pounds of boxed CRT glass will be characterized via sampling and TCLP analysis prior to proper disposal

- If it will be characterized, provide a description of the sampling plan for the boxed CRT glass. Please note visual assessment is not an acceptable method of determining whether or not some, or all of, the boxed CRT glass are hazardous. Characterization in the same manner described in Section 2.2.2 is acceptable.

6. Section 2.2.2 should state that for CRT glass determined to be hazardous, the underlying hazardous constituents (UHCs) will be also be determined, in accordance with 40 CFR part 268.9. UHCs are constituents present in the hazardous waste at concentrations exceeding their universal treatment standards, provided at 40 CFR part 268.48. UHCs must be added to the manifest to inform the disposal facility of their presence. Under RCRA, facilities must address UHCs in hazardous wastes prior to disposal of such wastes. Please note the presence of UHCs can be determined using the same TCLP data used to make the hazardous waste determination. Additional sampling is not required.
7. Regarding Section 2.4, if Berendo/Harrison intends to calculate alternative Groundwater Protection Levels (GPLs) for metals, the VRP recommends a minimum of eight soil samples collected at the site are also analyzed for Synthetic Precipitation Leaching Procedure (SPLP) by EPA SW-846 Method 1312. SPLP analysis will enable Berendo/Harrison to calculate alternative GPLs in accordance with the procedure outlined in Appendix C of ADEQ guidance titled *A Screening Method to Determine Soil Concentrations Protective of Groundwater Quality* and dated September 1996.
8. During an inspection of the facility conducted by ADEQ on December 17, 2019, inspectors noted the presence of two drywells on-site; however, the Work Plan discusses only one. The ADEQ acknowledges the drywell represented on Figure 5, however inspectors noted what appears to be a second on the west side of the building. At the time of the inspection, the apparent drywell was submerged by water. Please refer to photo 3 of the enclosed inspection report. If this feature meets the definition of a drywell in accordance with Arizona Administrative Code (A.A.C.) R18-9-101(20), it must be registered with ADEQ prior to conducting any investigation, protected by the preventative measures described in Section 2.1.6, and sampled as described in Section 2.5.
9. Regarding the last two sentences of Section 2.5, if laboratory analytical data from soil samples collected from the drywell(s) during this phase of work indicate an exceedance of a Soil Remediation Level and/or Groundwater Protection Level for a contaminant of concern, the VRP requests Berendo/Harrison informally submit results to the VRP for discussion and concurrence on additional investigation/sampling and appropriate laboratory analysis.
10. In Section 3.1.1, the first sentence should read: CRT material will be sampled to determine if the CRT material exhibits a hazardous waste characteristic under 40 CFR part 261, and if it contains underlying hazardous constituents at levels exceeding their universal treatment standards at 40 CFR part 268.48.
11. In Section 3.2.2, please collect field duplicates for both CRT material and soil at a rate of ten percent or one per day.
12. Regarding the fourth bullet in Section 3.9, Berendo/Harrison must containerize all wash, rinse, and/or decontamination waters, then conduct a hazardous waste determination prior to disposal. This waste should not be allowed to evaporate under ambient conditions, as this would be regarded as <u>treatment</u> under RCRA in accordance with 40 CFR part 260.10, and require a permit.

13. The monthly progress reports described in Section 6.1 should include a summary of all findings for the previous month including any sampling and analysis, problems encountered and actions taken to rectify such problems, as well as projected work for the upcoming month.
14. Please note my phone number on community involvement sign in Appendix C should be 602-771-4847.
15. Regarding deliverables prepared/generated based on activities described in the Work Plan, pursuant to A.A.C. R18-8-280, Berendo/Harrison must include a certification stating: *I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and/or imprisonment.*

How to Respond

The VRP requests a response to the above comments within 15 days. Berendo/Harrison may respond in a comment-response table format. Upon VRP review of the comment-response table, and if all responses are satisfactory, the VRP will issue an approval of the Work Plan. A final version of the Work Plan can be submitted for the VRP file at your convenience thereby ensuring submittal does not delay the start of field activities.

If you have any questions or comments, please feel free to contact me at 602-771-4847, toll-free at 1-800-234-5677, or osuch.nichole@azdeq.gov.

Sincerely,

Nichole Osuch

Nichole Osuch, PMP
Project Manager
Voluntary Remediation Program

Enclosure: ADEQ Inspection Report dated December 17, 2019

cc: Mr. William Pearson, Pearson Law Group L.L.C. – via email
Ms. Sarah Sanz, The Sanz Law Firm P.L.L.C. – via email

Gmail by Google

Nichole Osuch <osuch.nichole@azdeq.gov>

Harrison/Berendo Comment Response Table

1 message

William Pearson <wink@pearsonlg.com> Tue, Apr 28, 2020 at 2:33 PM
To: Nichole Osuch <osuch.nichole@azdeq.gov>

Hi Nichole,

Attached is the Harrison/Berendo Comment Response Table submitted in response to VRP's comments on the 59th Ave. Exterior Work Plan contained in your letter dated April 13, 2020. The table is organized with responses to each comment VRP made in sequence about the exterior CRT removal work plan for the 59th Ave. warehouse. As we discussed virtually all responses by Harrison/Berendo, with minor exceptions, reflect an acceptance or a clarified acknowledgement of requests made by ADEQ/VRP. I understand the VRP will review this table and contact me to discuss any items that need to be further addressed. Thank you.

Wink

William W. Pearson

Pearson Law Group LLC

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o 602.237.5405 c 602.320.4344

wink@pearsonlg.com | pearsonlg.com

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2020.4.28 Revised 59th Outdoor Work Plan Table.pdf
81K

Gmail by Google

Nichole Osuch <osuch.nichole@azdeq.gov>

Re: Harrison/Berendo Comment Response Table

1 message

William Pearson <wink@pearsonlg.com> Tue, Apr 28, 2020 at 2:45 PM
To: Nichole Osuch <osuch.nichole@azdeq.gov>

Nichole,

The first page got cut off somehow when I saved as a PDF. Here is the report with a complete first page.

Wink

William W. Pearson

Pearson Law Group LLC

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wink@pearsonlg.com | pearsonlg.com

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From: Wink Pearson <wink@pearsonlg.com>
Date: Tuesday, April 28, 2020 at 2:33 PM
To: Nichole Osuch <osuch.nichole@azdeq.gov>
Subject: Harrison/Berendo Comment Response Table

Hi Nichole,

Attached is the Harrison/Berendo Comment Response Table submitted in response to VRP's comments on the 59th Ave. Exterior Work Plan contained in your letter dated April 13, 2020. The table is organized with responses to each comment VRP made in sequence about the exterior CRT removal work plan for the 59th Ave. warehouse. As we discussed virtually all responses by Harrison/Berendo, with minor exceptions, reflect an acceptance or a clarified acknowledgement of requests made by ADEQ/VRP. I understand the VRP will review this table and contact me to discuss any items that need to be further addressed. Thank you.

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William W. Pearson

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2020.4.28 Revised 59th Outdoor Work Plan Table.pdf
81K

Response To ADEQ Letter Comments dated April 13, 2020
Review of (revised) Non-Time-Critical Removal Action Work Plan
Closed Loop 59th Avenue Warehouse
435 South 59th Avenue, Suite 120 and 130
Phoenix, Arizona 85043
VRP Site Code 513246-00

+Item	Page	Section	ADEQ Comment	Response to Comment (RTC)
General Comments				
1			Please note that if Toxicity Characteristic Leaching Procedure (TCLP) laboratory analytical results for CRT material and/or soil exceed, or <u>are equal to</u> the applicable TCLP Maximum Concentration provided at 40 Code of Federal Regulations (CFR) part 261.24, Table 1, the CRT material and/or soil must be considered hazardous.	CRT materials and soils for the purposes of waste determination and ultimately disposal will be analyzed for by TCLP for Eight RCRA Metals as Specified in Table 3 of the (revised) Non-Time-Critical Removal Action Work Plan. Analytical results for CRT material and containerized soil exceeding, <u>or equal to</u>, the applicable TCLP Maximum Concentration provided at 40 CFR part 261.24 for the Eight RCRA metals will be considered hazardous as noted in Table 5. In-situ soil samples will be collected and analyzed for be analyzed for 13 Priority Pollutant Metals plus barium as request by ADEQ letter dated February 24, 2020 *Comments on the Non-Time Critical Removal Action Work Plan*. Results of the in-situ soil samples collected as a part of Phase 4 will be compared to the Arizona SRLs or GPLs specified in Table 1.
2		Table 2	On Table 2, the VRP notes Phase 3 includes waste characterization sampling.	Noted.
3		Table 2	On Table 2, the VRP notes Phase 5 monthly progress reporting includes project schedule updates.	Noted.
4			Please submit the project-specific Health and Safety Plan for review and comment prior to commencement of field activities.	A project-specific Health and Safety Plan will be submitted prior to commencement of the field activities.
5		Section 2.2 and 2.2.1	Sections 2.2 and 2.2.1 appear to contain conflicting statements and proposed actions. Section 2.2 states boxed material will be removed and disposed as hazardous waste. Characterization of this material is not proposed in this statement. However,	The proposed approach is that the 6,197,000 pounds of boxed CRT glass will automatically be regarded as hazardous waste and sent to Nevada for disposal. In

			Section 2.2.1, states that after the boxed material is placed in end dump trucks, Wood will collect discreet samples of the CRT material to be analyzed for the eight RCRA Metals….to develop a hazardous waste profile. Hence, the discrepancy. Therefore, for clarification purposes, indicate whether: a. the 6,197,000 pounds of boxed CRT glass will automatically be regarded as hazardous waste and sent to Nevada for disposal, or b. the 6,197,000 pounds of boxed CRT glass will be characterized via sampling and TCLP analysis prior to proper disposal • If it will be characterized, provide a description of the sampling plan for the boxed CRT glass. Please note visual assessment is not an acceptable method of determining whether or not some, or all of, the boxed CRT glass are hazardous. Characterization in the same manner described in Section 2.2.2 is acceptable	which case, samples will be only be taken for the purposes of generating a waste profile for the landfill. However, Berendo/Harrison requests this methodology be revisited with ADEQ based on field observations upon commencement of field activities. It is believed that "low lead containing" CRT (i.e. panel glass) was stored outside the CRT facility since 2010. Therefore, it is suspected that most of the boxed materials are consistent with piled material (i.e. panel glass). Upon the inventory assessment conducted in late 2018 by Wood, these materials were visually assessed and observed to contain material other CRT components which may include frit and neck glass. It is believed a visual assessment is possible to segregate boxes or groups of boxes which may be consistent with piled CRT materials. Under this scenario, approximately 10 boxes of CRT material "visually constant piled materials" may be placed in a single 20 yard roll off and tested in consistent with the procedures in Section 2.2.2.
6		Section 2.2.2	Section 2.2.2 should state that for CRT glass determined to be hazardous, the underlying hazardous constituents (UHCs) will be also be determined, in accordance with 40 CFR part 268.9. UHCs are constituents present in the hazardous waste at concentrations exceeding their universal treatment standards, provided at 40 CFR part 268.48. UHCs must be added to the manifest to inform the disposal facility of their presence. Under RCRA, facilities must address UHCs in hazardous wastes prior to disposal of such wastes. Please note the presence of UHCs can be determined using the same TCLP data used to make the hazardous waste determination. Additional sampling is not required.	UHCs will be analyzed for as a part of the TCLP for eight RCRA Metals analysis as specified in Table 3 of the (revised) Non-Time-Critical Removal Action Work Plan. If the CRT material is determined to be hazardous on the basis of exceedance of the toxicity characteristic and UHC are present in the hazardous waste at concentrations exceeding their respective UTSs, UHCs will be added to the manifest to inform the disposal facility of their presence.

7		Section 2.4	Regarding Section 2.4, if Berendo/Harrison intends to calculate alternative Groundwater Protection Levels (GPLs) for metals, the VRP recommends a minimum of eight soil samples collected at the site are also analyzed for Synthetic Precipitation Leaching Procedure (SPLP) by EPA SW-846 Method 1312. SPLP analysis will enable Berendo/Harrison to calculate alternative GPLs in accordance with the procedure outlined in Appendix C of ADEQ guidance titled *A Screening Method to Determine Soil Concentrations Protective of Groundwater Quality* and dated September 1996.	In the event an alternative GPL will be calculated for metals, soil samples will be collected and analyzed for by the SPLP in accordance with the procedure outlined in the ADEQ guidance.
8			During an inspection of the facility conducted by ADEQ on December 17, 2019, inspectors noted the presence of two drywells on-site; however, the Work Plan discusses only one. The ADEQ acknowledges the drywell represented on Figure 5, however inspectors noted what appears to be a second on the west side of the building. At the time of the inspection, the apparent drywell was submerged by water. Please refer to photo 3 of the enclosed inspection report. If this feature meets the definition of a drywell in accordance with Arizona Administrative Code (A.A.C.) R18-9- 101(20), it must be registered with ADEQ prior to conducting any investigation, protected by the preventative measures described in Section 2.1.6, and sampled as described in Section 2.5.	If the subject feature located on the western side of the building is determined to be a drywell, it will be registered prior to the commencement of field activities and will be protected by the preventative measures described in Section 2.1.6, and sampled as described in Section 2.5.
9		Section 2.5	Regarding the last two sentences of Section 2.5, if laboratory analytical data from soil samples collected from the drywell(s) during this phase of work indicate an exceedance of a Soil Remediation Level and/or Groundwater Protection Level for a contaminant of concern, the VRP requests Berendo/Harrison informally submit results to the VRP for discussion and concurrence on additional investigation/sampling and appropriate laboratory analysis.	In the event of an exceedance of a SRL or GPL for a contaminant of concern resulting from the sampling of a drywell, Berendo/Harrison will informally submit results to the VRP for discussion and concurrence on additional investigation/sampling.
10		Section 3.1.1	In Section 3.1.1, the first sentence should read: CRT material will be sampled to determine if the CRT material exhibits a hazardous waste characteristic under 40 CFR part 261, and if it contains underlying hazardous constituents at levels exceeding their universal treatment standards at 40 CFR part 268.48.	If the CRT material is determined to be hazardous on the basis of exceedance of the toxicity characteristic and UHC are present in the hazardous waste at concentrations exceeding their respective UTSs, UHCs

				will be added to the manifest to inform the disposal facility of their presence.
11		Section 3.2.2	In Section 3.2.2, please collect field duplicates for both CRT material and soil at a rate of ten percent or one per day.	The collection of duplicate samples for CRT material and soil will be collected a rate of one per ten or one per day whichever is less frequent.
12		Section 3.9	Regarding the fourth bullet in Section 3.9, Berendo/Harrison must containerize all wash, rinse, and/or decontamination waters, then conduct a hazardous waste determination prior to disposal. This waste should not be allowed to evaporate under ambient conditions, as this would be regarded as treatment under RCRA in accordance with 40 CFR part 260.10, and require a permit.	All wash, rinse, and/or decontamination waters containerized will be sampled and disposed of accordingly.
13		Section 6.1	The monthly progress reports described in Section 6.1 should include a summary of all findings for the previous month including any sampling and analysis, problems encountered and actions taken to rectify such problems, as well as projected work for the upcoming month.	Monthly progress reports will include a summary of findings for the previous month including sampling and analysis, problems encountered, and actions taken to rectify such problems, and upcoming work.
14		Appendix C	Please note my phone number on community involvement sign in Appendix C should be 602-771-4847.	The community involvement sign will include the specified phone number.
15			Regarding deliverables prepared/generated based on activities described in the Work Plan, pursuant to A.A.C. R18-8-280, Berendo/Harrison must include a certification stating: *I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and/or imprisonment.*	A.A.C. R18l-8-280 (C) states that a certification statement "may" be required on written submittals. Subpart (B) references "Penalties" for non-compliance with permits, rules, regulation or orders issued with civil and criminal penalties. Requiring this certification at this time, on a Work Plan submittal when the regulations do not require such a certification is unwarranted in the current circumstances. If at any time the VRP has any reasonable basis to question the accuracy of a submittal, the first step is to give notice and seek a resolution. The VRP has no factual basis at this time to suspect that any submittals by Harrison/Berendo will not be true, accurate and complete.

Re: Harrison/Berendo Comment Response Table

1 message

Nichole Osuch <osuch.nichole@azdeq.gov> Fri, May 1, 2020 at 6:01 PM
To: William Pearson <wink@pearsonlg.com>

Hi Wink. The VRP has completed its review of the document titled *Response To ADEQ Letter Comments dated April 13, 2020,* presented in table format. The VRP has two remaining comments:

Number 5: The Harrison/Berendo response, as written, still contains conflicting statements and proposed actions. To remedy this, please respond to this email with re-written and/or clarifying language for the proposed actions.

Number 15: The VRP requires the deliverables prepared/generated based on activities described in the Work Plan contain the certification statement pursuant to A.A.C. R18-8-280. However, the last sentence [*I am aware that there are significant penalties for submitting false information including the possibility of fine and/or imprisonment.and proposed actions.*] may be excluded from the statement on the deliverables.

How to Respond
A response to this email is all that is required at this time.

Please contact me if you have any questions.

Nichole Osuch, PMP
Project Manager - VRP & WQARF
Ph: 602-771-4847

azdeq.gov

Your feedback matters to ADEQ. Visit azdeq.gov/feedback

On Tue, Apr 28, 2020 at 2:33 PM William Pearson <wink@pearsonlg.com> wrote:

> Hi Nichole,
>
> Attached is the Harrison/Berendo Comment Response Table submitted in response to VRP's comments on the 59th Ave. Exterior Work Plan contained in your letter dated April 13, 2020. The table is organized with responses to each comment VRP made in sequence about the exterior CRT removal work plan for the 59th Ave. warehouse. As we discussed virtually all responses by Harrison/Berendo, with minor exceptions, reflect an acceptance or a clarified acknowledgement of requests made by ADEQ/VRP. I understand the VRP will

review this table and contact me to discuss any items that need to be further addressed. Thank you.

Wink

William W. Pearson

Pearson Law Group LLC

3509 E. Shea Blvd, Suite 117

Phoenix, AZ 85028

o 602.237.5405 c 602.320.4344

wink@pearsonlg.com | pearsonlg.com

Re: Harrison/Berendo Comment Response Table

1 message

William Pearson <wink@pearsonlg.com> Wed, May 13, 2020 at 1:15 PM
To: Nichole Osuch <osuch.nichole@azdeq.gov>
Cc: Sarah Sanz <SSanz@harrisonprops.com>

Hi Nichole,

Below are the Harrison/Berendo responses to the VRP's comment on Number 5 and Number 15.

Number 5: In order to explore the option of disposing a portion of the boxed CRT material as non-hazardous waste, 30 to 50 exterior staged boxes of CRT material determined to be "visually similar to piled material" will be placed into three (3) to five (5) 20-cubic yard capacity roll-off containers. One six-part composite sample of CRT material will be collected from each roll-off container as detailed in Section 2.2.2 of the Revised Work Plan. Samples will be analyzed for eight RCRA metals by USEPA Method 1311 TCLP. Once the laboratory results are received, each waste transport container of CRT material may be designated to be disposed as hazardous or non-hazardous waste as specified in the Revised Work Plan.

Following review of the analytical results from the three (3) to five (5) waste containers, one of the following two paths will be selected:

(1) containerizing and characterizing the boxed CRT material determined to be "visually similar with piled material" will be discontinued and disposed of with the remaining boxed CRT hazardous, or

(2) continue loading boxes of CRT material determined to be "visually similar to piled materials" into waste transport containers and individually characterizing each container for the purposes of waste determination as hazardous or non-hazardous waste.

Number 15: Harrison/Berendo agree to submit deliverables with the certification requested minus the last sentence [*I am aware that there are significant penalties for submitting false information including the possibility of fine and/or imprisonment*].

Once VRP approves this removal action work plan for the CRT material on the exterior of the 59th Ave. warehouse, we plan to negotiate contracts with consultants, transporters and disposal facilities. We have already made significant progress on these tasks. Harrison/Berendo will keep VRP posted on our progress including notifying VRP For Number 5 the plan is to select for testing only CRT material in Gaylord boxes that appear to be similar in content to the CRT material in uncontained piles on the exterior of the 59th Ave. warehouse. Testing of CRT material from Gaylord boxes will proceed identical to the approved testing protocol for CRT material in the uncontained piles. CRT material in Gaylords that are not tested will be disposed of as hazardous waste following required procedures for disposal of hazardous waste. Harrison/Berendo will provide VRP with monthly reports on the results of this process.

Please contact me if you need any more information. Thank you for your assistance.

Wink

William W. Pearson

Pearson Law Group LLC

3509 E. Shea Blvd, Suite 117

Phoenix, AZ 85028

o 602.237.5405 c 602.320.4344

wink@pearsonlg.com | pearsonlg.com

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From: Nichole Osuch <osuch.nichole@azdeq.gov>
Date: Friday, May 1, 2020 at 6:02 PM
To: Wink Pearson <wink@pearsonlg.com>
Subject: Re: Harrison/Berendo Comment Response Table

Hi Wink. The VRP has completed its review of the document titled *Response To ADEQ Letter Comments dated April 13, 2020,* presented in table format. The VRP has two remaining comments:

Number 5: The Harrison/Berendo response, as written, still contains conflicting statements and proposed actions. To remedy this, please respond to this email with re-written and/or clarifying language for the proposed actions.

Number 15: The VRP requires the deliverables prepared/generated based on activities described in the Work Plan contain the certification statement pursuant to A.A.C. R18-8-280. However, the last sentence [*I am aware that there are significant penalties for submitting false information including the possibility of fine and/or imprisonment.and proposed actions.*] may be excluded from the statement on the deliverables.

How to Respond

A response to this email is all that is required at this time.

Please contact me if you have any questions.

Nichole Osuch, PMP
Project Manager - VRP & WQARF
Ph: 602-771-4847

azdeq.gov

Your feedback matters to ADEQ. Visit azdeq.gov/feedback

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> Hi Nichole,
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Wink

William W. Pearson

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