

**APPENDIX C –
EVALUATION OF DATA QUALITY OBJECTIVES ATTAINMENT**

Evaluation of Data Quality Objectives Attainment

ACTIVITY	OBJECTIVES	ACTION	OBJECTIVE ATTAINED?	RECOMMENDATIONS
Objective 1: Meet TNRCC Requirements for Site Closure				
Attainment of Risk Reduction Standard Number 1: Closure/Remediation to Background				
	Remove all hazardous and nonhazardous waste and waste residues and contaminated design and operating system components such as liners, leachate collection systems, and dikes from the unit or area of the unauthorized discharge. For remediation of media that have become contaminated by releases from a waste management unit or by other unauthorized discharge of hazardous or nonhazardous waste, the contaminated media must be removed or decontaminated to cleanup levels specified in this section (30 TAC 335.554(b) and (c)).	Characterization of contamination was conducted during this investigation. No waste or waste residue was removed.	No	Remediation or disposal of contaminated soil using method identified during the upcoming Soil Pile Disposition Assessment study is recommended.

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	Determine compliance with RRS1 closure requirements by comparing to background as represented by results of analyses of samples taken from media that are unaffected by waste management or industrial activities. If the PQL is greater than background, then the PQL rather than background shall be used as the cleanup level, provided the person satisfactorily demonstrates to the executive director that lower levels of quantitation of a contaminant are not possible (30 TAC 335.554(d)).	Contaminant concentrations were compared to draft revised background levels (Parsons ES, May 2001) or PQLs (AFCEE RLs).	No. Several results significantly exceeded background.	Additional sampling and remediation is recommended.
	Attainment of cleanup levels shall be demonstrated by collection and analysis of samples from the media of concern (30 TAC 335.554(e)).	Surface soil and subsurface soil samples were collected at the site and analyzed for contaminants of potential concern, including metals, VOCs, and SVOCs.	No. Contamination above background was detected.	Additional sampling and remediation is recommended.
Objective 2: Meet Requirements of 3008(h) Order for RFI				
B.2. Task II: RFI Workplan Requirements				
Field Sampling.	Conduct field sampling in accordance with procedures defined in the project work plan, SAP, QAPP, and HSP.	All sampling was conducted in accordance with the procedures described in the project plans.	Yes	NA

ACTIVITY	OBJECTIVES	ACTION	OBJECTIVE ATTAINED?	RECOMMENDATIONS
Task III: Facility Investigation				
Characterization of Environmental Setting - Hydrogeology (B.3.A.1)	Evaluate hydrogeologic conditions at the site.	Install monitoring wells if shallow groundwater is encountered at the site. Shallow groundwater was not encountered during drilling at the site. Groundwater of the Trinity Aquifer is being addressed through the Groundwater Investigation.	NA	NA
Characterization of Environmental Setting- Soils (B.3.A.2)	Characterize soils in accordance with USCS soil classification system (B.3.A.2(a)).	Soil types at the site are based on the SCS Bexar County Soil Survey (NRCS, 1991) and are described in Section 1.2.1.	Yes	NA
	Identify soil profile, including ASTM classification of soils; directional relative permeability; bulk density; particle size distribution; infiltration (field test); storage capacity; mineral content; and soil conductivity (B.3.A.2(b), (c), (d), (f), (h), (i), (j), (k))	Soil profiles to be collected of the sifted soil pile during the soil pile disposition activities.	No	NA

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	Determine soil pH (B.3.A.2(e)).	The pH of each of the soil types evaluated as part of the background metals concentration study was determined through laboratory analysis. According to those analyses, the pH of Krum Complex soils is 7.87.	Yes	NA
	Determine moisture content (B.3.A.2(g)).	The moisture content of each sample was determined during laboratory analysis.	Yes	NA
Characterization of Environmental Setting – Surface Water and Sediment (B.3.A.3)	Characterize marshes, creeks, wetland areas, or ditches at the site.	No marshes, creeks, wetland areas, or ditches are present at the site. Direction of runoff flow has been evaluated in Section 1.2.3.	Yes	NA
Source Characterization (B.3.B)	Identify the source area (B.3.B.1).	A description of the source area is provided in Sections 1.1 and 1.2.	Yes. A concrete platform presumed to be the location where waste was burned was identified; sampling results confirmed the location of the source.	NA

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	Identify the location of the unit/disposal area (B.3.B.2(a)).	The boundary of SWMU B-8 was visually identified in 1993. In 1999, points along the boundary of each site were surveyed with a Rockwell Plugger GPS unit (estimated accuracy of ±25 feet). The measurement points were identified by the CSSA Environmental Coordinator. The boundary of the site was reviewed during preparation of this report and adjusted, if necessary, based on observations made during the field investigation.	Yes	NA
	Identify the type of unit/disposal area (B.3.B.2(b)).	The site was identified in the Environmental Assessment. Since there was a possibility for UXO to exist at the site, UXO experts conducted a sweep of the ground surface to identify UXO. Based on the findings of the geophysical survey, excavation was conducted to identify and remove any buried UXO. During the excavation, only a rebar-reinforced concrete platform was found.	Yes. Excavation was conducted at the site to determine the type of the unit disposal area, and soils inspected for UXO and other waste. Based on results of excavation, it was concluded that site was used as a burn area only. No disposal trench was found.	NA

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	Identify design features (B.3.A.2(c)).	Information regarding design features was obtained during the Environmental Assessment (ES, 1993) and through visual observation during the field investigation. All available information regarding the design of the disposal site is provided in Sections 1.1 and 1.2.	Yes	NA
	Identification of past and present operating practices, period of operation, age of unit/disposal area, and method used to close the unit/disposal area (B.3.B.2(d), (e), (f), and (h)).	All known information regarding these items is provided in Sections 1.1 and 1.2. This information is from the Environmental Assessment, records review, interviews, aerial photo review, and visual observations.	To the extent possible with data available.	NA
	Determine general physical conditions of the site (B.3.B.2(g))	The general physical condition of the site was determined during the field investigation. This information is presented in Sections 1.1 and 1.2.	Yes	NA

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	Identify waste characteristics, including type of waste placed in the unit, physical and chemical characteristics of the wastes, and migration and dispersal characteristics of the waste (B.3.B.3).	Records regarding historic waste disposal practices at CSSA are very limited. All known information, derived from the Environmental Assessment, records review, interviews, and visual observations at the site is provided in Sections 1.1 and 1.2.	Yes	NA
Contamination Characterization – Groundwater (B.3.C.1)	Characterize the vertical and horizontal extent of groundwater contamination.	Shallow groundwater was not encountered during drilling at the site. Groundwater of the Trinity Aquifer is being addressed through the Groundwater Investigation.	NA	NA
Contamination Characterization – Soil (B.3.C.2)	Determine vertical and horizontal extent of contamination (B.3.C.2(a)).	Completed three soil borings at the site to determine the extent of contamination. Descriptions of the soil boring activities and other field activities are provided in Section 2.	No. Horizontal extent of surface soil contamination has not been determined. Based on the concentrations that only slightly exceed background at depth in each boring, the vertical extent of contamination has been identified in each boring.	Additional soil sampling is recommended to determine the horizontal extent of surface soil contamination.

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	Describe contaminant and soil properties with the contaminant source area, including contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, and other factors that might affect contaminant migration and transformation (B.3.C.2(b)).	None	No	These properties should be addressed in the Soil Pile Disposition Assessment report, if appropriate.
	Describe soil properties (B.3.C.2(c)).	See “Characterization of Environmental Setting – Soils” above.	Yes	NA
	Identify the direction of contaminant movement (B.3.C.2(d)).	Contaminants were determined to be at shallow depths, and no shallow groundwater was encountered at the site. Therefore, the contaminants appear static and no action is needed to define the direction of contaminant movement.	NA	NA
	Extrapolate future contaminant movement (B.3.C.2(e)).	NA	NA	NA

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	<p>Implement a soil boring investigation to determine the extent of soil contamination. Soil gas monitoring will be performed during drilling of all borings. Laboratory analysis of borings for contaminants of potential concern will be performed on soils at depths where either visual contamination is evident, or soil gas concentrations indicate contamination. All boreholes shall be properly abandoned.</p>	<p>Advanced three soil borings at the site. Properly abandoned all soil borings. Soil boring activities are outlined in Section 2.2.4. PID readings were made during soil boring drilling to monitor organic vapor concentrations.</p>	<p>Yes</p>	<p>NA</p>
	<p>Prepare a map of all areas included in the investigation (B.3.C.2(i)).</p>	<p>Provided appropriate figures of the site. Figures of the site and locations of soil borings are provided in Figures B8-1 through B8-4.</p>	<p>Yes</p>	<p>NA</p>
	<p>All reporting limits should be below regulatory criteria.</p>	<p>RLs were approved by TNRCC on October 5, 1999. RLs are considered RRS1 standards for all analytes except metals.</p>	<p>Yes</p>	<p>NA</p>
	<p>Perform all analyses in accordance with the AFCEE QAPP.</p>	<p>All analyses were performed in accordance with the AFCEE QAPP and approved variances.</p>	<p>Yes</p>	<p>NA</p>

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		All data flagged with “U,” “F,” “M,” and “J” are considered usable for site characterization purposes.	Yes. “M” flagged data are considered usable because the matrix interference is minimal and does not significantly affect the sample results.	NA
		Cadmium results for two samples were flagged “R” during data verification due to non-compliance of the relative percent difference of the field duplicate. Since the field duplicate typically assesses the precision of the field sampling methods for detected values, and the affected samples showed no detectable concentrations of cadmium, the “R” flagged data are considered usable.	Yes	The data are considered usable for site characterization and closure purposes.
Potential Receptors (B.3.D).	Identify potential receptors.	Potential receptors are identified in Section 2.2.5.	Yes	NA