

RELEASE INVESTIGATION REPORT

AREA OF CONCERN 73 – CAMP STANLEY STORAGE ACTIVITY

Contract No. DACA87-02-D-0005

Task Order No. DY01



Prepared for:

**Camp Stanley Storage Activity
Boerne, Texas**

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ACRONYMS AND ABBREVIATIONS

AOC	Area of concern
APPL	Agriculture & Priority Pollutants Laboratory, Inc.
bgs	below ground surface
BS	Bexar Shale
CC	Cow Creek
CESWF	Corps of Engineers Fort Worth District
COC	Chemical of concern
CSSA	Camp Stanley Storage Activity
DT	Dilution test
FD	Field duplicate
^{GW} GW _{ing}	Groundwater ingestion (PCL)
^{GW} Soil _{ing}	Groundwater soil ingestion (PCL)
ICAL	Initial calibration
ICP	Inductively coupled plasma
ICV	Initial calibration verification
LCS	Laboratory control spike
LCSD	Laboratory control spike duplicate
LGR	Lower Glen Rose
MCL	Maximum contaminant level
MDL	Method detection limit
µg/L	micrograms per liter
MQL	Method quantitation limit
MS	Mass spectrometry
MS/MSD	Matrix spike/matrix spike duplicate
NFA	No further action
PCL	Protective concentration level
%R	Percent recovery
PQL	Practical quantitation limit
QAPP	Quality Assurance Project Plan
QC	Quality control
RCRA	Resource Conservation and Recovery Act
RIR	Release Investigation Report
RL	Reporting limit
RMU	Range management unit
RPD	Relative percent difference
SDG	Sample delivery group
SVOC	Semivolatile organic compound
SWMU	Solid waste management unit

TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TO	Task Order
^{Tot} Soil _{Comb}	Combined soil (PCL)
TRRP	Texas Risk Reduction Program
UGR	Upper Glen Rose
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOC	Volatile organic compound

1.0 INTRODUCTION

Parsons is under contract with the U.S. Army Corps of Engineers (USACE), Fort Worth District (CESWF), Contract DACA87-02-D-0005, Task Order (TO) DY01, to provide investigations and environmental services for waste sites at Camp Stanley Storage Activity (CSSA) U.S. Army in Boerne, Texas (Parsons, 2007). The requirements for the TO DY01 scope of work include characterization of selected waste sites and preparation of appropriate documentation, including a Release Investigation Report (RIR) for Area of Concern 73 (AOC-73). This work has been performed in accordance with requirements of the Resource Conservation and Recovery Act (RCRA) 3008(h) Order in effect for CSSA and in accordance with 30 Texas Administrative Code (TAC) §350, the Texas Risk Reduction Program (TRRP) of the Texas Commission on Environmental Quality (TCEQ). This RIR has been prepared following TCEQ reporting and documentation requirements for releases that do not trigger applicability to the TRRP rule.

2.0 HISTORICAL BACKGROUND

2.1 CAMP STANLEY STORAGE ACTIVITY

Camp Stanley Storage Activity is located in northwestern Bexar County, about 19 miles northwest of downtown San Antonio. The installation consists of approximately 4,004 acres immediately east of Ralph Fair Road, and approximately 0.5 mile east of Interstate Highway 10 (Figure 1). All figures and tables are provided at the end of this RIR (pages 9 through 15). Camp Bullis borders CSSA on the north, east, and south. The land was used for ranching and agriculture until the 1900s. During 1906 and 1907, six tracts of land were purchased by the U.S. Government and designated the Leon Springs Military Reservation. The land included campgrounds and cavalry shelters.

In October 1917, the installation was re-designated Camp Stanley. Extensive construction was started during World War I to provide housing for temporary cantonments and support facilities. In 1931, the installation was selected as an ammunition depot, and construction of standard magazines and igloo magazines began in 1938. Land was also used to test, fire and overhaul ammunition components. As a result of these historic activities, CSSA has several historical waste sites, including solid waste management units (SWMU), AOCs, and range management units (RMU).

The present mission of CSSA is the receipt, storage, issue, and maintenance of ordnance as well as quality assurance testing and maintenance of military weapons and ammunition. Because of its mission, CSSA has been designated a restricted access facility. No changes to the CSSA mission and/or military activities are expected in the future.

2.2 AOC-73

AOC-73 is a small site (approximately 0.113 acre) located in the northwestern portion of the North Pasture area of CSSA, approximately 480 feet from the northern boundary and 1,580 feet

from the western boundary of the installation (Figure 2). Four SWMUs are also located in the North Pasture of CSSA (B-2, B-8, B-24, and B-20/21). The SWMU closest to AOC-73 is B-24, located approximately 3,700 feet south-southeast of the site.

Unlike CSSA's other SWMUs and AOCs, waste was disposed at AOC-73 by a previous landowner. AOC-73 was the location of a small area used by a former rancher for dumping general household trash and metal and lumber debris (including miscellaneous old tools, cans, bottles, barbed wire, and scraps of lumber and sheet metal). The land had been a tract of land owned by the Blank family in the 1930s. In 1940, when the U.S. was making preparations to enter World War II, this tract and three other tracts of ranch land located north of Camp Stanley were acquired by Camp Bullis, which shares common borders with CSSA to the north, east, and south. The owners of these tracts were A. Blank, W. Wilke, O. Scharmann, and J.F. Ashley (Parsons, 1993). These tracts of land are shown on Figure 3. In August 1953, about 2,040 acres were transferred from Camp Bullis to Camp Stanley, primarily in the area now known as the North Pasture. An additional 204 acres were assigned to Camp Stanley in December 1970; this is now the northernmost portion of CSSA (Boyd *et al.*, 1990).

There is no evidence that the northern portion of CSSA, where the Blank family ranch was located, was ever used for military practice or waste disposal. The area has been overgrown with native vegetation, with the site located in an area densely vegetated with juniper woodlands and shrubland (primarily cedar-like trees and shrubs). As discussed below in Section 3.1, the trees and brush were cleared from the site during the removal activities performed in March 2008. It should be noted that the ranch landfill was originally located on site maps farther to the southwest than its actual location. The site is approximately 950 feet to the northeast of the location shown on previous maps. It is approximately 380 feet to the west of a dirt road that leads up to this remote portion of CSSA.

3.0 OBJECTIVES OF RIR FOR AOC-73

In accordance with TCEQ (2003) guidance, *Determining Which Releases are Subject to TRRP* (www.tceq.state.tx.us/assets/public/remediation/trrp/releasesTRRPprev.pdf), an RIR can be performed for a site when results of an investigation lead to the following conclusions:

- Concentrations of chemicals detected at the site do not exceed Tier 1 residential soil action levels;
- There is no evidence of other affected or threatened environmental media (groundwater, surface water, or sediment) at the site; and
- The site passes the Tier 1 Ecological Exclusion Criteria Checklist.

When these three criteria are met for a site, the release is not subject to TRRP. For such sites, an RIR can be submitted to document the results and a no further action (NFA) decision can be requested from the TCEQ.

3.1 FIELD ACTIVITIES AND INVESTIGATION

Investigation and remedial activities were performed at AOC-73 during early March 2008. The 0.113-acre site was in a heavily vegetated area consisting primarily of juniper trees and brush. A track hoe was used to clear the vegetation prior to removal of the trash. The ranch trash included general household trash and metal and lumber debris (including miscellaneous old hand-held tools, cans and bottles, barbed wire, and scraps of lumber and sheet metal) which were spread across the site. The track hoe was then used to remove the trash and to scrape the surface of the site to a depth between approximately ½ and 1 foot. Ten surface soil samples were then collected from the excavated/cleared area. The samples were analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and metals. The analyses were performed using U.S. Environmental Protection Agency (USEPA) *Test Methods for Evaluating Solid Waste* (SW-846): Method 8260B (VOCs); Method 8270C (SVOCs); Method 7471A (mercury); and Method 6020 (arsenic, barium, cadmium, chromium, copper, lead, nickel, and zinc).

The sampling at AOC-73 was conducted to assess whether historical activities affected the site. VOC and SVOC analyses were included to test for the presence of contaminants commonly associated with disposal sites and verify that trash containing such contaminants had not been disposed of at this site. Metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc) were included to assess whether any metallic wastes, such as those commonly generated at CSSA, had been disposed of in this area.

Results of sampling showed no contaminants of concern at the site. These results are discussed in Section 3.2.

Photos of the site taken previous to waste removal and also during the cleanup activities are provided in Appendix A. These photos show the typical waste debris spread around the site prior to cleanup and the soil/waste piles that were generated from the excavation. Three small soil/waste piles were generated with a combined volume of only 170 cubic yards (yd³) of soil/waste. The soil/waste material was sampled and determined to be non-hazardous. The material was taken off site for disposal at Waste Management Inc., Covel Gardens Landfill in San Antonio, Texas.

3.2 SOIL SAMPLE RESULTS

The field activities conducted on March 4, 2008 included waste and surface soil removal and soil sampling from areas of the site most likely to be contaminated. All sample results were below the TCEQ Tier 1 residential soil action levels. For purposes of an RIR and NFA, action levels are defined as the lowest applicable Tier 1 residential protective concentration levels (PCL) for a given chemical of concern (COC), assuming a 0.5-acre source area and Class 1 groundwater. This includes the PCL for the total soil combined (^{Tot}Soil_{Comb}) pathways (*i.e.*, exposure to COCs in soil from ingestion, dermal contact, and inhalation of volatiles and particulates) and the PCL for the groundwater soil ingestion (^{GW}Soil_{Ing}) pathway (*i.e.*, soil-to-groundwater leaching of COC to groundwater, where the PCL is the highest

concentration of COC allowed in soil to be protective of Class 1 or Class 2 groundwater). Based on TCEQ (2007) guidance, if the background level or the method quantitation limit (MQL) is a higher concentration than the PCL, then the higher of the background or MQL is used as the action level. TCEQ-approved background concentrations have been developed for CSSA for arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc (Parsons, 2002). The statistically calculated and TCEQ-approved background metal concentrations are also available in the CSSA *Environmental Encyclopedia (Volume 2)* at www.stanley.army.mil.

A summary of the chemicals detected at AOC-73 is provided in Table 1. This table also shows the $^{Tot}Soil_{Comb}$ PCLs, the $^{GW}Soil_{Ing}$ PCLs, and the background concentrations. The data verification summary report for the sampling and analytical results is provided in Appendix B. The sampling locations at AOC-73 are shown on Figure 4.

As shown in Table 1, inorganic metals were detected at low concentrations across the site. None of the sample results showed metal concentrations above the action levels, or the background concentrations when used as the action levels (background values for arsenic, cadmium, lead and mercury were higher than the Tier 1 $^{GW}Soil_{Ing}$ PCLs and therefore were used in place of those PCLs). Three sample results showed detections of organic compounds, but at very low concentrations. The two VOCs (tetrachloroethene and toluene) and one SVOC (2-chloronaphthalene) were detected in one of ten samples each. Each of the three detected concentrations were flagged with an “F” qualifier indicating that the detected concentration is an estimated value between the method detection limit (MDL) and the practical quantitation limit (PQL). Thus, the concentrations for these three organic compounds are much lower than the $^{Tot}Soil_{Comb}$ PCLs and the $^{GW}Soil_{Ing}$ PCLs.

3.3 SITE GEOLOGY/HYDROGEOLOGY

Based on the sampling results and the geological and hydrogeological characteristics of the site, historical activities have not affected surface soil or other environmental media. A description of the geology and hydrogeology of the area is provided below. Additional information on geology, hydrology, and physiography at CSSA are also available in the CSSA *Environmental Encyclopedia (Volume 1-1, Background Information Report)*. The report can be found at www.stanley.army.mil.

3.3.1 Geology

The Lower Glen Rose (LGR) is the uppermost geologic stratum in the area of AOC-73. The LGR is a massive, fossiliferous, vuggy limestone that grades upward into thin beds of limestone, marl, and shale. The LGR is approximately 300 to 330 feet thick in the CSSA area and is underlain by the Bexar Shale (BS) facies of the Hensell Sand, which is estimated to be from 60 to 70 feet thick under the CSSA area. The BS consists of silty dolomite, marl, calcareous shale, and shaley limestone. The geologic strata dip approximately 1 to 2 degrees to the south-southeast at CSSA.

Based on current published information, there are two major fault (shatter) zones at CSSA: the North Fault Zone and the South Fault Zone. AOC-73 is located approximately 5,500 feet north of the North Fault Zone.

3.3.2 Groundwater

The uppermost hydrogeologic layer at CSSA is the unconfined Upper Trinity aquifer, which consists of the Upper Glen Rose (UGR) Limestone. Locally at CSSA, very low-yielding perched zones of groundwater can exist in the UGR; however, it is very sporadic and seasonal. Transmissivity values are not available for the UGR. Regionally, groundwater flow is thought to be enhanced along the bedding contacts between marl and limestone; however, the hydraulic conductivity between beds is thought to be poor. This interpretation is based on the observation of discordant static water levels in adjacent wells, completed in different beds. Principal development of solution channels is limited to evaporite layers in the UGR Limestone.

The Middle Trinity aquifer is unconfined and functions as the primary source of groundwater at CSSA. It consists of the LGR Limestone, the BS, and the Cow Creek (CC) Limestone. The LGR Limestone outcrops north of CSSA, along Cibolo Creek (see Section 3.3.3) and within the central and southwest portions of CSSA. As such, principal recharge into the Middle Trinity aquifer is via precipitation infiltration at outcrops and along creek beds during flood events. At CSSA, the BS is interpreted as a confining layer, except where it is fractured and faulted, allowing for limited vertical hydraulic connection between the LGR and CC portions of the aquifer. Regional groundwater flow within the Middle Trinity aquifer is toward the south and southeast and the average transmissivity coefficient is 1,700 gallons per day per foot (Ashworth, 1983). In general, groundwater at CSSA flows in a northwest to southeast direction. However, local flow gradient may vary depending on rainfall, recharge, and possibly well pumping. Westerly components of groundwater flow also exist with structural features in the subsurface (fractures, faults, and karst).

No site-specific information regarding groundwater is available for AOC-73. The nearest monitor well, CS-MWH-LGR, is approximately 1,000 feet west-southwest of the site. This well is completed in the LGR portion of the Middle Trinity aquifer. Water levels have been monitored at this well on a quarterly basis since June 2003. Based on data from this well, water levels in the vicinity of AOC-73 vary from approximately 130 to 310 feet below ground surface (bgs), depending on whether it is a wet or dry season.

Since its installation in 2003, CS-MWH-LGR has been sampled periodically for VOCs and inorganic metals. With the exception of toluene, no VOCs have been reported in the well. Between March and December 2003, toluene was reported at concentrations between 3.3 micrograms per liter ($\mu\text{g/L}$) and 9 $\mu\text{g/L}$, but since that time no further detections have occurred. Likely laboratory contamination has also been reported in CS-MWH-LGR groundwater samples, including bromoform, dibromochloromethane, and methylene chloride in trace concentrations at their respective reporting limits (RL). Analytical inorganic detections include arsenic, barium, cadmium, chromium, copper, lead, nickel, and zinc. However, no inorganic constituents have been detected above the Tier 1 groundwater ingestion ($^{\text{GW}}\text{GW}_{\text{Ing}}$)

PCLs, which are based on the USEPA drinking water standards when available (*e.g.*, maximum contaminant levels [MCL]).

A chronology of groundwater related environmental activities and quarterly groundwater monitoring reports (including the results of monitoring at well CS-MWH-LGR) are available in the *CSSA Environmental Encyclopedia (Volume 5, Groundwater)*. The report can be found at www.stanley.army.mil.

3.3.3 Surface Water

Salado, Leon and Cibolo Creeks drain surface water from CSSA (Figure 5). In the undeveloped areas of CSSA, such as in the North Pasture where AOC-73 is located, runoff flows overland to natural channels. The North Pasture is in the Salado and Cibolo Creek drainage basins. All creeks at CSSA are intermittent and only contain water during and immediately following rain events.

There are two small ponds in the North Pasture, the northwest pond (also referred to as the "drop zone tank") and the northeast pond (also referred to as the "windmill tank") (Figure 5). Both ponds are small (the northwest pond is less than ½ acre in size when full and the northeast pond is approximately 0.9 acre in size when full). The northwest pond is approximately 2,200 feet south-southwest of AOC-73 and the northeast pond is approximately 5,860 feet east-southeast of AOC-73. The northwest pond is in a downgradient direction from the site; however, there is no creek or other surface water feature directly between the pond and the site. The site is in the Salado Creek Drainage Basin and is approximately 1,820 feet to the northeast of the closest portion of Salado Creek.

3.4 ECOLOGICAL EXCLUSION CRITERIA CHECKLIST

Although no format is designated for an RIR in the TCEQ (2003) guidance, the Tier 1 Ecological Exclusion Criteria Checklist must be completed as part of the TCEQ reporting requirements for a site. The completed checklist is provided in Appendix C. Results show that the site passes the checklist and that there are no ecological exposure pathways of concern for AOC-73. The site may be excluded from further ecological assessment based on the absence of any complete or significant ecological exposure pathways.

4.0 SUMMARY AND RECOMMENDATIONS

The following conclusions for AOC-73 are based on the information presented above:

- AOC-73 was the location of a small (0.113 acre) site used by a former rancher for dumping general household trash and metal and lumber debris (including miscellaneous old tools, cans, bottles, barbed wire, and scraps of lumber and sheet metal).
- Removal efforts were conducted in March 2008 to clear the debris; due to the scattered nature of the debris, surface soil was also removed to a depth between

approximately ½ and 1 foot). Ten surface soil samples were then collected from the excavated/cleared area and analyzed for VOCs, SVOCs, and metals. Results of soil sampling showed no COCs at the site.

- Since no contamination was found at AOC-73, there is no impact to groundwater or surface water/sediment in the area. This is supported by the depth to groundwater in the area (130 to 310 feet bgs depending on rainfall), results of monitoring at well CS-MWH-LGR, and distance to the closest surface water body (1,820 feet to intermittent Salado Creek).

From information presented in this report, the results of the investigation at AOC-73 meet the three criteria as described in TCEQ's (2003) guidance *Determining Which Releases are Subject to TRRP*. These three criteria are as follows:

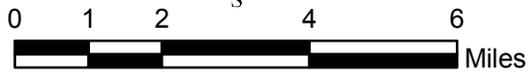
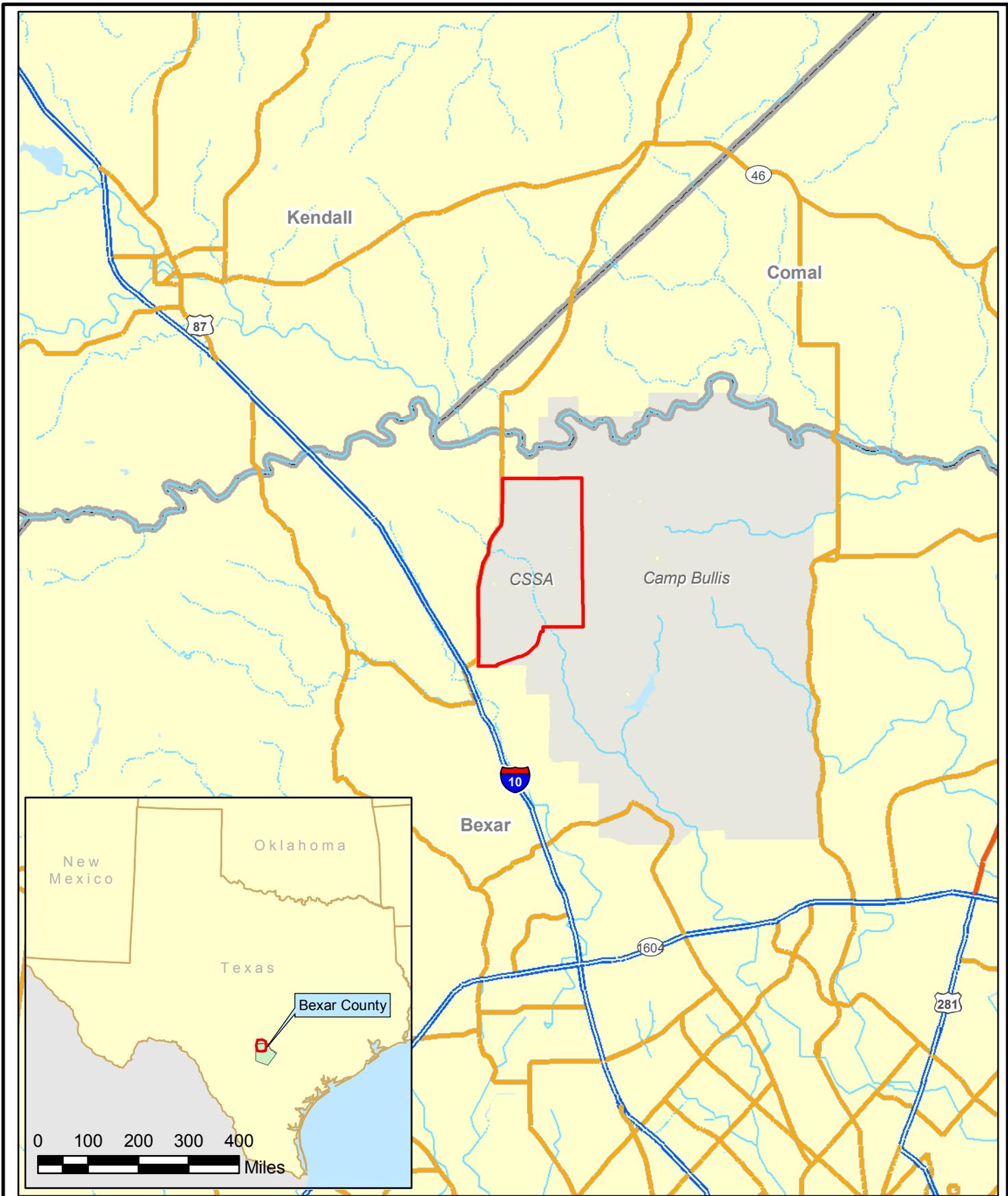
- Concentrations of chemicals detected at AOC-73 do not exceed Tier 1 residential soil action levels;
- There is no evidence of other affected or threatened environmental media (groundwater, surface water, or sediment) at AOC-73; and
- AOC-73 passes the Tier 1 Ecological Exclusion Criteria Checklist.

Because these three criteria are met, AOC-73 is not subject to TRRP. Therefore, this RIR has been prepared to document the results and a NFA decision will be requested from the TCEQ.

5.0 REFERENCES

- Ashworth, 1983. Groundwater Availability of the Lower Cretaceous Formations in the Hill Country of South-Central Texas. John B. Ashworth, Texas Water Development Board, Report 273.
- Boyd *et al.*, 1990. Archaeological and historical investigations at Camp Bullis, Bexar and Comal Counties, Texas: The 1989 season. D.K. Boyd, I.K. Cox, and H.G. Uecker, on file, Texas Historical Commission, Austin, Texas.
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- Parsons, 2002. *Second Revision, Evaluation of Background Metals Concentrations in Soils and Bedrock at CSSA*. February 2002. Available in the *CSSA Environmental Encyclopedia (Volume 2)* at www.stanley.army.mil.
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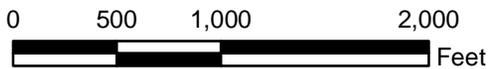
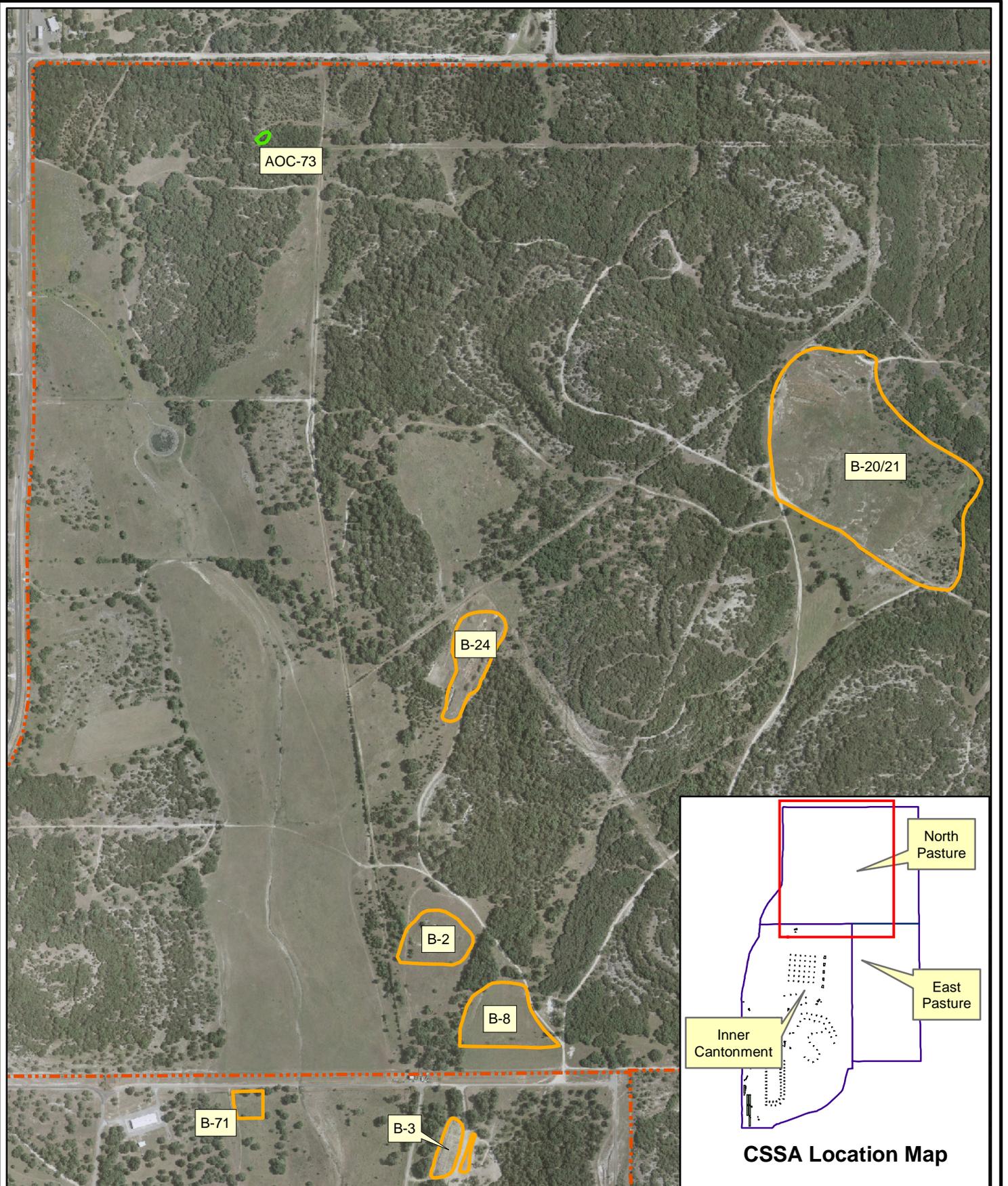
FIGURES AND TABLES



- CSSA
- Freeway
- Highway
- Major Road
- County Boundary
- Military Installation

Figure 1
CSSA Location
Camp Stanley Storage Activity

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- AOC-73
- Solid Waste Management Units
- Fence Line

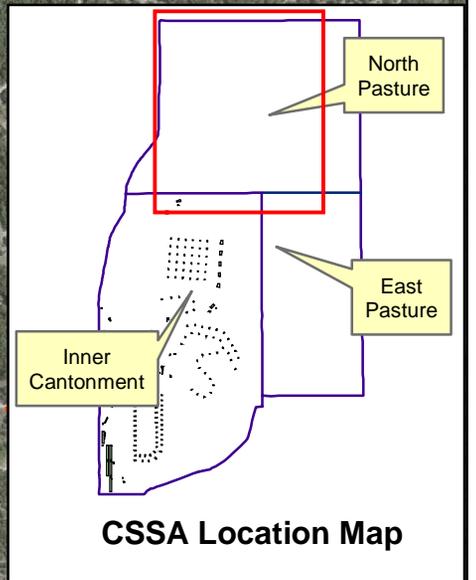


Figure 2

Location of AOC-73

Camp Stanley Storage Activity

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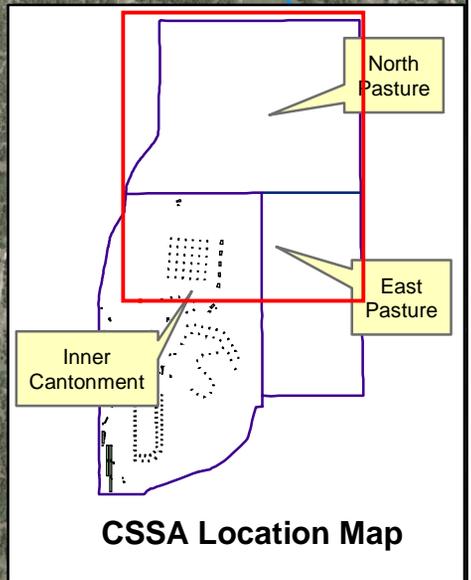
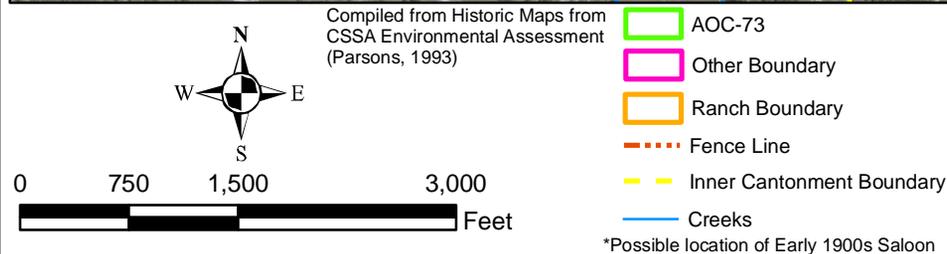
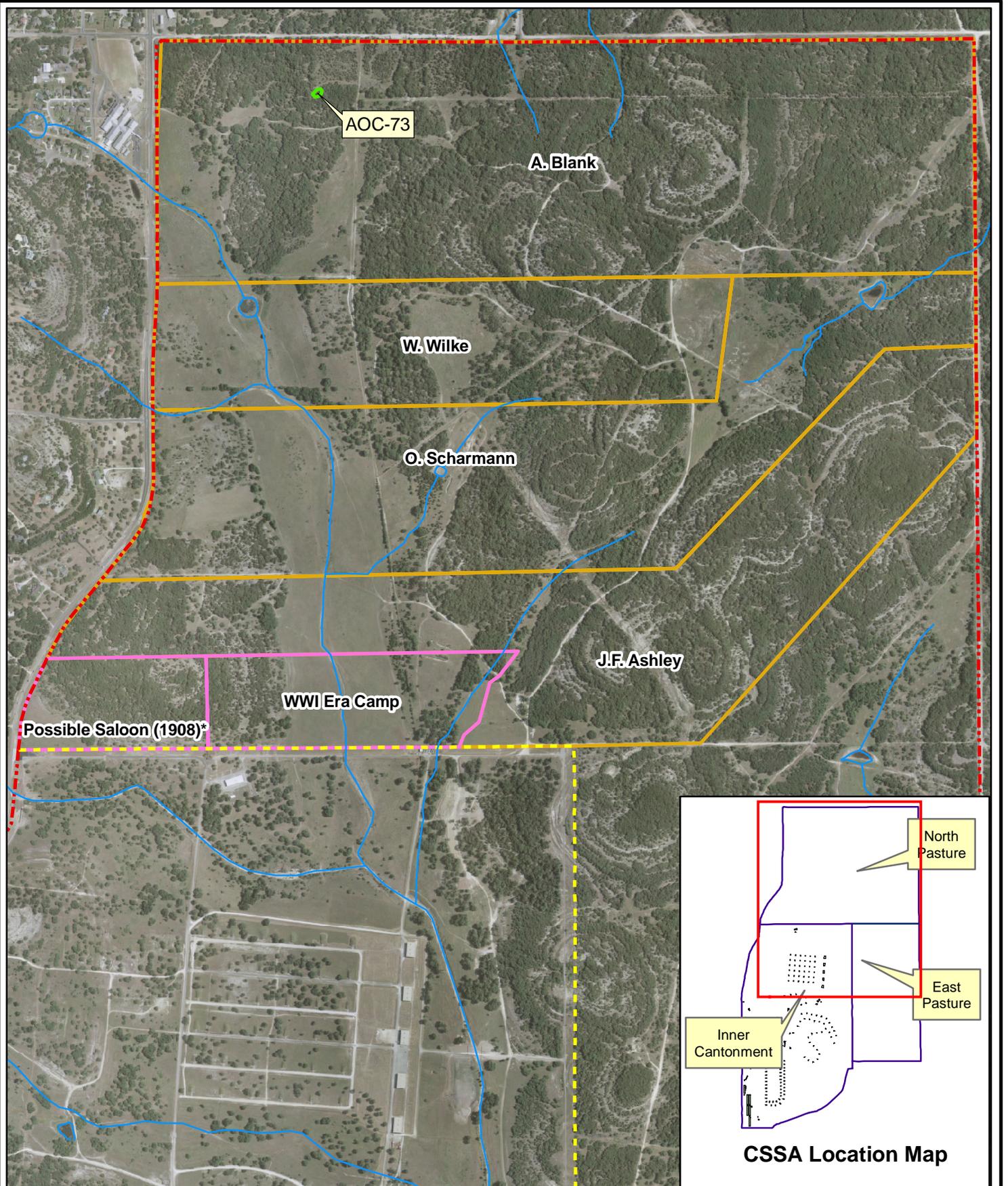
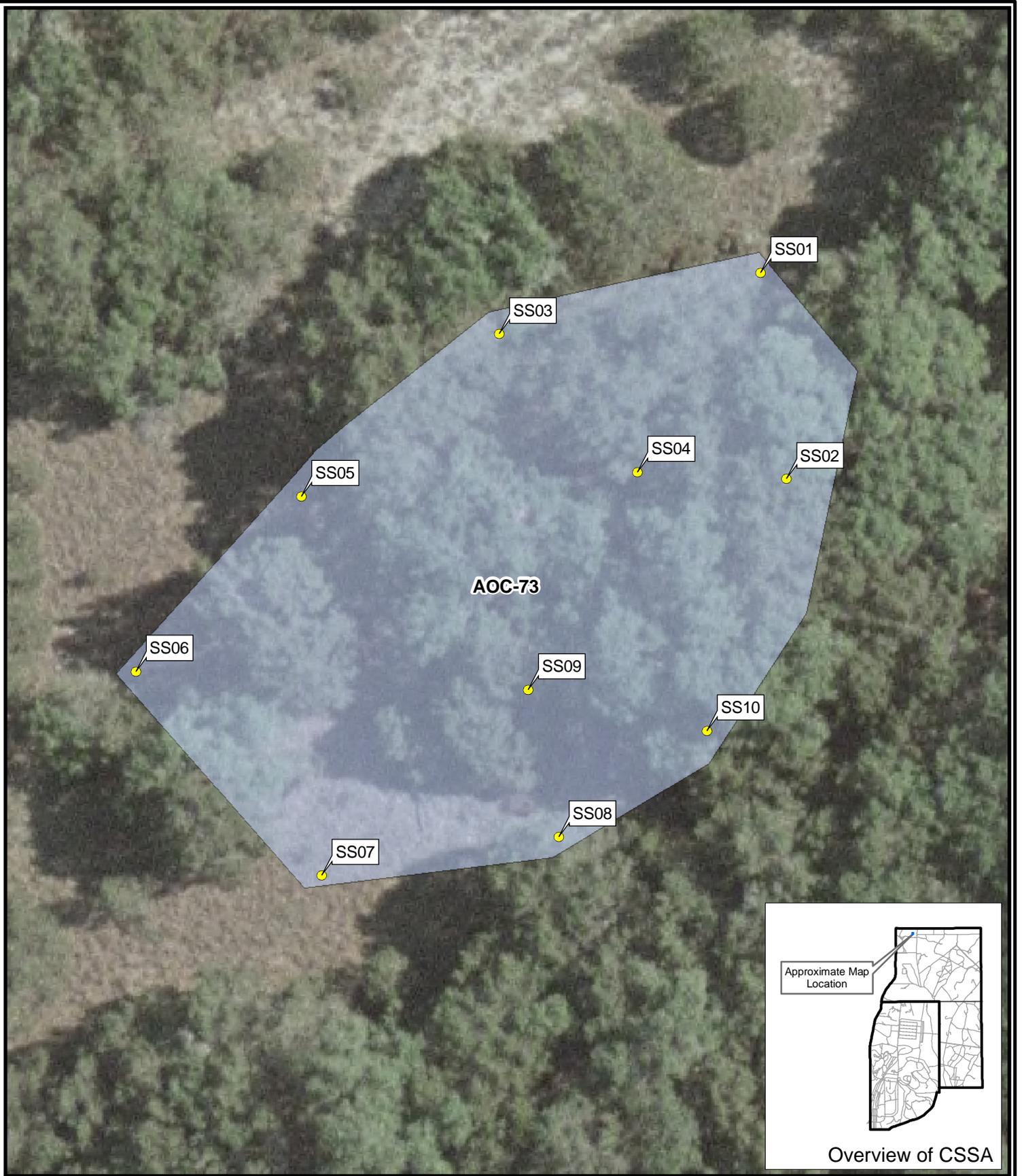


Figure 3

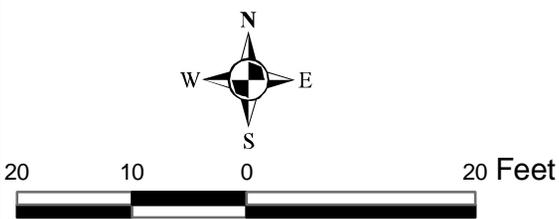
North Pasture Historic Land Use

Camp Stanley Storage Activity

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Aerial Photo Date: 2003



- Sample Sites
- AOC-73

Figure 4

Sample Locations (AOC-73)

Camp Stanley Storage Activity

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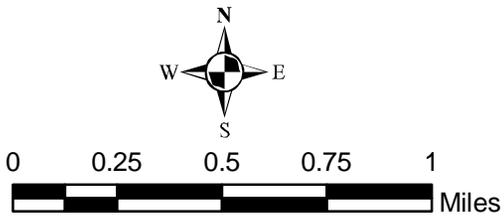
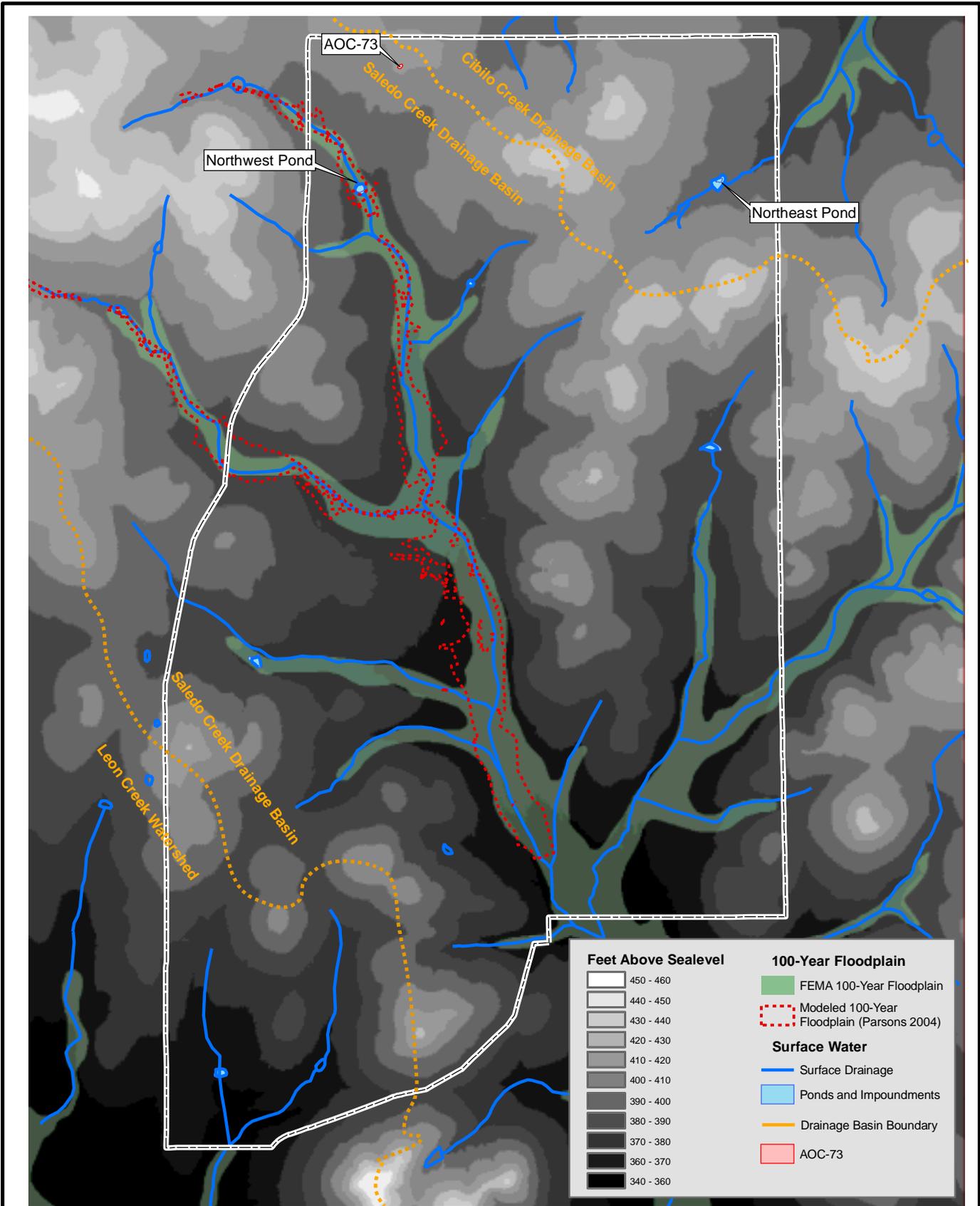


Figure 5
 Topography, Surface Water, and Floodplains
 Camp Stanley Storage Activity
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Table1. Summary of Chemical Constituents Detected in Soils at AOC-73.

Detected Chemical	CAS Number	Tier 1 Soil PCLs [†]		CSSA Background Metal Concentrations ^{††}	Sample Locations ^{†††}																					
		Residential Source Area 0.5 acre			AOC73-SS01	Qual	AOC73-SS02	Qual	AOC73-SS03	Qual	AOC73-SS04	Qual	AOC73-SS05	Qual	AOC73-SS06	Qual	AOC73-SS07	Qual	AOC73-SS08	Qual	AOC73-SS08 DUP	Qual	AOC73-SS09	Qual	AOC73-SS10	Qual
		TotSoil _{Comb} mg/kg [1]	g ^w Soil _{ing} mg/kg [2]		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg		4-Mar-2008 mg/kg	
Volatile Organic Compounds																										
Tetrachloroethene	127-18-4	9.8E+01 c	5.0E-02 m	na	0.0008	U	0.0008	U	0.0008	U	0.0008	U	0.0011	F	0.0008	U										
Toluene	108-88-3	6.0E+03 n	8.2E+00 m	na	0.0027	F	0.0010	U																		
Semivolatile Organic Compounds																										
2-Chloronaphthalene	91-58-7	5.0E+03 n	6.7E+02 n	na	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.05	F	0.04	U								
Inorganic Metals																										
Arsenic (As)	7440-38-2	2.4E+01 n	5.0E+00 m >S	19.6	5.41		7.20		5.73		5.91		6.86		9.36		7.32		8.36		11.09		9.40		8.07	
Barium (Ba)	7440-39-3	8.0E+03 n	4.4E+02 m >S	186	114.33		122.80		103.15		124.12		124.50		187.45	M	140.16		171.53		184.91		178.76		140.84	
Cadmium (Cd)	7440-43-9	5.2E+01 n	1.5E+00 m >S	3	1.17		1.31		1.07		1.27		1.21		1.51		1.36		1.36		1.64		2.46		1.53	
Chromium (Cr) [total]	7440-47-3	3.0E+04 n	2.4E+03 m >S	40.2	24.94		32.55		27.70		30.23		31.43		43.09		38.35		42.64		46.53		42.30		33.46	
Copper (Cu)	7440-50-8	5.5E+02 n	1.0E+03 a >S	23.2	7.49		10.53		8.20		10.14		10.82		12.36		13.13		15.61		16.60		14.90		15.90	
Lead (Pb)	7439-92-1	5.0E+02 n	3.0E+00 a >S	84.5	48.99		16.57		12.28		27.10		25.64		17.80		20.98		23.14		22.78		41.00		34.27	
Mercury (pH = 4.9)	7439-97-6	3.6E+00 n	7.8E-03 m	0.77	0.03	F	0.05	F	0.03	F	0.04	F	0.05	F	0.04	F	0.05	F	0.04	F	0.04	F	0.04	F	0.06	F
Nickel (Ni)	7440-02-0	8.4E+02 n	1.6E+02 n >S	35.50	15.80		17.98		16.10		18.41		16.78		25.10		21.71		26.64		27.35		22.73		25.41	
Zinc (Zn)	7440-66-6	9.9E+03 n	2.4E+03 n >S	73.2	80.72		40.25		30.18		72.87		51.97		43.64		46.35		59.03		58.39		257.89		100.79	

NOTES:
[†] TCEQ, TRRP Tier 1 Soil PCLs (Last Revised: April 23, 2008).
^{††} CSSA Soil Background Concentrations. Second Revision, Evaluation of Background Metals Concentrations in Soils and Bedrock at CSSA. February 2002. Values from Table 3.3. PCLs and CSSA background values coded in this table as [1, 2, 3].
[1] TotSoil_{Comb} = PCL for COPC in soil for a 0.5 acre source area and a potential future resident (combined exposure for ingestion, dermal contact, inhalation of volatiles and particulates, and ingestion of above-ground and below-ground vegetables).
[2] g^wSoil_{ing} = PCL for COPC in soil for a 0.5 acre source area and a potential future resident (soil-to-groundwater leaching of COPC to Class 1 and 2 groundwater).
[3] CSSA Soil Background Concentrations.
5.0E+00 If PCL is highlighted blue (and background value is highlighted red, 19.6), the PCL is lower than background and the background value is used for comparison.
^{†††} All samples represent surface soil (SS) at depths from 0 to 12 inches. Sample locations are shown on Figure 4.
mg/kg = milligrams per kilogram.
c = carcinogenic.
n = noncarcinogenic.
m = primary MCL-based.
a = EPA Action Level-based.
>S = solubility limit exceeded during calculation.
na = not applicable.
F = AFCEE qualifier indicating that the detected concentration is an estimated value between the MDL and the PQL. The "F" qualifier in the table indicates that the results are usable as detected values.
M = AFCEE qualifier indicating that a matrix effect was present. The "M" qualifier in the table indicates that the result is usable as a detected value.
U = Analyte was not detected. The value reported is the method detection limit (MDL).

APPENDIX A
Site Photographs



Photo 1. Typical waste debris and vegetation at AOC-73. (Photo taken 2-29-08.)



Photo 2. Typical waste debris and vegetation at AOC-73. (Photo taken 2-29-08.)



**Photo 3. One of three soil/waste piles (post-excitation).
North portion of AOC-73. (Photo taken 3-4-08.)**



**Photo 4. Two of the three soil/waste piles (post-excitation).
North portion of AOC-73 (looking south). (Photo taken 3-4-08.)**



**Photo 5. One of three soil/waste piles (post-excitation).
South portion of AOC-73. (Photo taken 3-4-08.)**



Photo 6. View to the northwest. (Photo taken 3-4-08.)



Photo 7. View to the south. (Photo taken 3-4-08.)

APPENDIX B

Data Verification Summary Report

DY01 DATA VERIFICATION SUMMARY REPORT**for samples collected from****CAMP STANLEY STORAGE ACTIVITY****BOERNE, TEXAS**

Data Verification by: Katherine LaPierre
Parsons – Austin

INTRODUCTION

The following data verification summary report covers soil samples and the associated field quality control (QC) samples collected from Camp Stanley Storage Activity (CSSA) under DY01 on March 4, 2008. The samples in the following Sample Delivery Group (SDG) were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals:

55613

The field QC samples collected in association with this SDG included one matrix spike/matrix spike duplicate (MS/MSD) pair, one field duplicate (FD) sample, and one trip blank. No ambient blanks were collected. During the initiation of this project, it was determined that ambient blanks were not necessary due to the absence of a source at these sites.

All samples were collected by Parsons and analyzed by Agriculture & Priority Pollutants Laboratories, Inc. (APPL) in Fresno, California, following the procedures outlined in the Statement of Work and CSSA Quality Assurance Project Plan (QAPP), Version 1.0.

The samples in this SDG were shipped to the laboratory in two coolers. Both coolers were received by the laboratory at a temperature of 2.00°C which was within the 2-60°C range recommended by the CSSA QAPP.

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and verified following the guidelines outlined in the CSSA QAPP, Version 1.0. Information reviewed in the data packages included sample results; field and laboratory quality control results; calibrations; case narratives; raw data; chain-of-custody forms and the cooler receipt checklist. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the CSSA QAPP, Version 1.0, were met.

VOLATILES

General

The volatiles portion of this SDG consisted of fourteen (14) samples, including ten (10) environmental soil samples, one MS/MSD pair, one field duplicate, and one trip blank. The samples were collected on March 4, 2008 and were analyzed for the full list of VOCs as specified in the CSSA QAPP.

The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. All samples in this SDG were analyzed following the procedures outlined in the CSSA QAPP. All samples were prepared and analyzed within the holding time required by the method.

The samples in this SDG were analyzed in four batches under three different initial calibrations (ICALs).

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the laboratory control spike (LCS) samples, MS/MSD samples, and the surrogate spikes. Sample AOC73-SS06 was designated for MS/MSD analysis on the chain-of-custody form for this SDG.

Four LCS samples were analyzed for this SDG, three for soil and one for water. All LCS and surrogate spike recoveries were within acceptance criteria.

A significant number of analytes failed to meet criteria in the MS and/or MSD, as follows:

AOC73-SS06

Analyte	MS %R	MSD %R	Criteria
1,1,2,2-Tetrachloroethane	(66)	62	64-135%
1,2,3-Trichlorobenzene	23	21	65-147%
1,2,4-Trichlorobenzene	25	22	65-145%
1,2,4-Trimethylbenzene	49	47	65-135%
1,2-Dichlorobenzene	41	36	65-135%
1,3,5-Trimethylbenzene	52	51	62-135%
1,3-Dichlorobenzene	43	39	65-135%
1,4-Dichlorobenzene	41	37	65-135%
1-Chlorohexane	61	61	65-135%
2-Chlorohexane	51	48	63-135%
4-Chlorohexane	50	47	64-135%
Bromobenzene	55	49	65-135%
Bromoform	61	57	65-135%
Chlorobenzene	(66)	61	65-135%
Chloromethane	51	46	65-135%
Ethylbenzene	(66)	62	65-135%
Hexachlorobutadiene	36	34	65-135%
Isopropylbenzene	62	57	65-135%
m/p-Xylene	(67)	64	65-135%
n-Butylbenzene	44	42	65-135%
n-Propylbenzene	54	51	65-135%
Naphthalene	31	26	65-135%
o-Xylene	(65)	61	65-135%
p-Isopropyltoluene	47	46	65-135%
sec-Butylbenzene	52	51	65-135%
Styrene	59	54	65-135%
tert-Butylbenzene	53	51	65-135%

() indicates recovery met criteria.

No corrective action was deemed necessary for the following analytes since these compounds were only slightly (5% or less) below criteria in the MS and/or MSD: 1,1,2,2-tetrachloroethane, 1-chlorohexane, chlorobenzene, ethylbenzene, m/p--xylene, o-xylene. The "M" flags applied to the parent sample results for these analytes were removed since a significant effect on data quality was not demonstrated. All other non-compliant analytes were flagged "M" in the parent sample due to the low bias demonstrated by the MS/MSD pair. It should be noted that due to the large number of failures, the laboratory reanalyzed the MS/MSD pair and obtained similar results. Thus, only the original analysis was reported.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the MS/MSD concentrations. Precision was further evaluated by comparing the field duplicate analyte results. Two sets of samples were collected from AOC73-SS08. The second set was submitted to the laboratory as a field duplicate.

All MS/MSD RPDs were within acceptance criteria.

All target analytes were non-detect in both the parent and field duplicate sample.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the chain-of-custody procedures to those described in the CSSA QAPP;
- Comparing actual analytical procedures to those described in the CSSA QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during sample collection, transit, or analysis.

The samples in this SDG were analyzed following the chain-of-custody form and the analytical procedures described in the CSSA QAPP. All samples were prepared and analyzed within the holding time required by the method.

- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All second source verification criteria were met. The LCS samples were prepared using a secondary source.
- All initial and continuing calibration verification criteria were met.
- All internal standard criteria were met.

There were four method blanks and one trip blank associated with the VOC analyses in this SDG. All blanks were free of any target VOCs at or above the reporting limit (RL).

Completeness

Completeness has been evaluated in accordance with the CSSA QAPP. The number of usable results has been divided by the number of possible individual analyte results and expressed as a percentage to determine the completeness of the data set.

All VOC results for the samples in this SDG were considered usable. The completeness for the VOC portion of this SDG is 100%, which meets the minimum acceptance criteria of 95%.

SEMIVOLATILES

General

The volatiles portion of this SDG consisted of thirteen (13) samples, including ten (10) environmental soil samples, one MS/MSD pair, and one field duplicate. The samples were collected on March 4, 2008 and were analyzed for the full list of SVOCs as specified in the CSSA QAPP.

The SVOC analyses were performed using USEPA SW846 Method 8270C. All samples in this SDG were analyzed following the procedures outlined in the CSSA QAPP. All samples were prepared and analyzed within the holding time required by the method.

The samples for SVOC analysis were extracted and analyzed in a one batch under a single ICAL.

Accuracy

Accuracy was evaluated using the percent recovery obtained from the LCS sample, MS/MSD samples, and the surrogate spikes. Sample AOC73-SS06 was designated for MS/MSD analysis on the chain-of-custody form for this SDG.

All LCS and surrogate spike recoveries were within acceptance criteria.

All MS/MSD recoveries were within acceptance criteria, except for the following:

AOC73-SS06			
Analyte	MS %R	MSD %R	Criteria
Benzoic Acid	9.0	9.6	25-172%

The parent sample result for benzoic acid was flagged "M" due to the low bias demonstrated by the MS/MSD pair.

Precision

Precision was evaluated using the RPD obtained from the MS/MSD concentrations. Precision was further evaluated by comparing the field duplicate analyte results. Two sets of samples were collected from AOC73-SS08. The second set was submitted to the laboratory as a field duplicate.

All MS/MSD RPDs were within acceptance criteria.

All target analytes were non-detect in both the parent and field duplicate sample.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the chain-of-custody procedures to those described in the CSSA QAPP;

- Comparing actual analytical procedures to those described in the CSSA QAPP;
- Evaluating holding times; and
- Examining laboratory blanks for cross contamination of samples during analysis.

The samples in this SDG were analyzed following the chain-of-custody form and the analytical procedures described in the CSSA QAPP. All samples were prepared and analyzed within the holding time required by the method.

- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All second source verification criteria were met.
- All initial and continuing calibration verification criteria were met.
- All internal standard criteria were met.

There was one method blank associated with the SVOC analyses in this SDG. The method blank was free of any target SVOCs at or above the RL.

Completeness

Completeness has been evaluated in accordance with the CSSA QAPP. The number of usable results has been divided by the number of possible individual analyte results and expressed as a percentage to determine the completeness of the data set.

All SVOC results for the samples in this SDG were considered usable. The completeness for the SVOC portion of this SDG is 100%, which meets the minimum acceptance criteria of 95%.

Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) METALS

General

The ICP/MS metals portion of this SDG consisted of thirteen (13) samples, including ten (10) environmental soil samples, one MS/MSD pair, and one field duplicate. The samples were collected on March 4, 2008 and were analyzed for a reduced list of ICP/MS metals, which included arsenic, barium, cadmium, chromium, copper, lead, nickel, and zinc.

The ICP/MS metals analyses were performed using USEPA SW846 Method 6020. All samples in this SDG were analyzed following the procedures outlined in the CSSA QAPP. All samples were prepared and analyzed within the holding time required by the method.

The ICP/MS metals samples were digested and analyzed in a single batch.

Accuracy

Accuracy was evaluated using the percent recovery obtained from the LCS sample, LCS duplicate (LCSD) sample, and MS/MSD samples. Sample AOC73-SS06 was designated for MS/MSD analysis on the chain-of-custody form for this SDG.

All LCS/LCSD recoveries were within acceptance criteria.

All MS/MSD recoveries were within acceptance criteria, except for the following:

AOC73-SS06

Analyte	MS %R	MSD %R	Criteria
Barium	130	150	80-120%

The parent sample result for barium was flagged "M" due to the high bias demonstrated by the MS/MSD pair.

Precision

Precision was evaluated using the RPD obtained from the LCS/LCSD and MS/MSD concentrations. Precision was further evaluated by comparing the field duplicate analyte results. Two sets of samples were collected from AOC73-SS08. The second set was submitted to the laboratory as a field duplicate.

All LCS/LCSD and MS/MSD RPDs were within acceptance criteria.

All target metals detected above the RL in both the parent and field duplicate met RPD criteria with the exception of arsenic, as follows:

AOC73-SS08

Metal	Parent Conc. (mg/kg)	FD Conc. (mg/kg)	RPD	Criteria
Arsenic	8.36	11.1	28	RPD \leq 25
Barium	172	185	7.5	
Cadmium	1.36	1.64	19	
Chromium	42.6	46.5	8.7	
Copper	15.6	16.6	6.1	
Lead	23.1	22.8	1.6	
Nickel	26.6	27.4	2.6	
Zinc	59.0	58.4	1.1	

No corrective action was deemed necessary for arsenic since the RPD was only three percent high and a significant effect on data quality was not demonstrated.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the chain-of-custody procedures to those described in the CSSA QAPP;
- Comparing actual analytical procedures to those described in the CSSA QAPP;
- Evaluating holding times; and
- Examining laboratory blanks for cross contamination of samples during analysis.

The samples in this SDG were analyzed following the chain-of-custody form and the analytical procedures described in the CSSA QAPP. All samples were prepared and analyzed within the holding times required by the method.

- All instrument tune criteria were met.
- All initial calibration criteria were met.
- All calibration verification criteria were met.
- All second source verification criteria were met. The initial calibration verification (ICV) was prepared using a secondary source.
- All interference check criteria were met.
- All internal standard criteria were met.
- A dilution test (DT) was analyzed on sample AOC73-SS06. The DT was applicable for all metals detected in the parent sample at a concentration of 100 times the MDL or greater. All applicable metals met criteria in the DT, as follows:

Metal	%D	Criteria
Arsenic	0.9	%D ≤ 10
Barium	2.0	
Chromium	4.2	
Copper	0.4	
Lead	1.3	
Nickel	6.0	
Zinc	2.8	

- A post digestion spike was not required as per the CSSA QAPP.

There was one method blank and several calibration blanks associated with the ICP/MS analyses in this SDG. All blanks were free of any target metals at or above the RL.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All ICP/MS results for the samples in this SDG were considered usable. The completeness for the ICP/MS portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

MERCURY

General

The mercury portion of this SDG consisted of thirteen (13) samples, including ten (10) environmental soil samples, one MS/MSD pair, and one field duplicate. The samples were collected on March 4, 2008 and were analyzed for mercury.

The mercury analyses were performed using USEPA SW846 Method 7471A. All samples in this SDG were analyzed following the procedures outlined in the CSSA QAPP. All samples were prepared and analyzed within the holding time required by the method.

The mercury samples were digested and analyzed in a one batch under a single ICAL.

Accuracy

Accuracy was evaluated using the percent recovery obtained from the LCS/LCSD samples and the MS/MSD samples. Sample AOC73-SS06 was designated for MS/MSD analysis on the chain-of-custody form for this SDG.

The LCS/LCSD and MS/MSD recoveries were within acceptance criteria.

Precision

Precision was evaluated using the RPD obtained from the LCS/LCSD and MS/MSD concentrations. Precision was further evaluated by comparing the field duplicate analyte results. Two sets of samples were collected from AOC73-SS08. The second set was submitted to the laboratory as a field duplicate.

The LCS/LCSD and MS/MSD RPDs were within acceptance criteria.

Mercury was below the RL in both the parent and field duplicate samples.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the chain-of-custody procedures to those described in the CSSA QAPP;
- Comparing actual analytical procedures to those described in the CSSA QAPP;
- Evaluating holding times; and
- Examining laboratory blanks for cross contamination of samples during analysis.

The samples in this SDG were analyzed following the chain-of-custody form and the analytical procedures described in the CSSA QAPP. All samples were prepared and analyzed within the holding times required by the method.

- All initial calibration criteria were met.

- All second source verification criteria were met. The ICV was prepared using a secondary source.
- All calibration verification criteria were met.

There was one method blank and several calibration blanks associated with the mercury analyses in this SDG. All blanks were free of mercury at or above the RL.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All mercury results for the samples in this SDG were considered usable. The completeness for the mercury portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

APPENDIX C

Tier 1 Ecological Exclusion Criteria Checklist

Figure: 30 TAC §350.77(b)

TIER 1: Exclusion Criteria Checklist

This exclusion criteria checklist is intended to aid the person and the TNRCC in determining whether or not further ecological evaluation is necessary at an affected property where a response action is being pursued under the Texas Risk Reduction Program (TRRP). Exclusion criteria refer to those conditions at an affected property which preclude the need for a formal ecological risk assessment (ERA) because there are **incomplete or insignificant ecological exposure pathways** due to the nature of the affected property setting and/or the condition of the affected property media. This checklist (and/or a Tier 2 or 3 ERA or the equivalent) must be completed by the person for all affected property subject to the TRRP. The person should be familiar with the affected property but need not be a professional scientist in order to respond, although some questions will likely require contacting a wildlife management agency (i.e., Texas Parks and Wildlife Department or U.S. Fish and Wildlife Service). The checklist is designed for general applicability to all affected property; however, there may be unusual circumstances which require professional judgement in order to determine the need for further ecological evaluation (e.g., cave-dwelling receptors). In these cases, the person is strongly encouraged to contact TNRCC before proceeding.

Besides some preliminary information, the checklist consists of three major parts, **each of which must be completed unless otherwise instructed**. PART I requests affected property identification and background information. PART II contains the actual exclusion criteria and supportive information. PART III is a qualitative summary statement and a certification of the information provided by the person. **Answers should reflect existing conditions and should not consider future remedial actions at the affected property**. Completion of the checklist should lead to a logical conclusion as to whether further evaluation is warranted. Definitions of terms used in the checklist have been provided and users are strongly encouraged to familiarize themselves with these definitions before beginning the checklist.

Name of Facility:

Camp Stanley Storage Activity (CSSA), Boerne, Texas.

Affected Property Location:

AOC-73, located within the northwest portion of CSSA, approximately 480 feet from the northern boundary and 1,580 feet from the western boundary of the facility.

Mailing Address:

Camp Stanley Storage Activity
25800 Ralph Fair Road
Boerne, TX 78015

TNRCC Case Tracking #s:

Water Customer No.: CN602728206.

Air Customer No.: CN600126262.

Solid Waste Registration #s:

Texas Solid Waste Registration No.: 69026.

Voluntary Cleanup Program #:

Not applicable.

EPA I.D. #s:

USEPA identification No.: TX2210020739.

Figure: 30 TAC §350.77(b)

Definitions¹

Affected property - The entire area (i.e., on-site and off-site; including all environmental media) which contains releases of chemicals of concern at concentrations equal to or greater than the assessment level applicable for residential land use and groundwater classification.

Assessment level - A critical protective concentration level for a chemical of concern used for affected property assessments where the human health protective concentration level is established under a Tier 1 evaluation as described in §350.75(b) of this title (relating to Tiered Human Health Protective Concentration Level Evaluation), except for the protective concentration level for the soil-to-groundwater exposure pathway which may be established under Tier 1, 2, or 3 as described in §350.75(i)(7) of this title, and ecological protective concentration levels which are developed, when necessary, under Tier 2 and/or 3 in accordance with §350.77(c) and/or (d), respectively, of this title (relating to Ecological Risk Assessment and Development of Ecological Protective Concentration Levels).

Bedrock - The solid rock (i.e., consolidated, coherent, and relatively hard naturally formed material that cannot normally be excavated by manual methods alone) that underlies gravel, soil or other surficial material.

Chemical of concern - Any chemical that has the potential to adversely affect ecological or human receptors due to its concentration, distribution, and mode of toxicity. Depending on the program area, chemicals of concern may include the following: solid waste, industrial solid waste, municipal solid waste, and hazardous waste as defined in Texas Health and Safety Code, §361.003, as amended; hazardous constituents as listed in 40 Code of Federal Regulations Part 261, Appendix VIII, as amended; constituents on the groundwater monitoring list in 40 Code of Federal Regulations Part 264, Appendix IX, as amended; constituents as listed in 40 CFR Part 258 Appendices I and II, as amended; pollutant as defined in Texas Water Code, §26.001, as amended; hazardous substance as defined in Texas Health and Safety Code, §361.003, as amended, and the Texas Water Code §26.263, as amended; regulated substance as defined in Texas Water Code §26.342, as amended and §334.2 of this title (relating to Definitions), as amended; petroleum product as defined in Texas Water Code §26.342, as amended and §334.122(b)(12) of this title (relating to Definitions for ASTs), as amended; other substances as defined in Texas Water Code §26.039(a), as amended; and daughter products of the aforementioned constituents.

Community - An assemblage of plant and animal populations occupying the same habitat in which the various species interact via spatial and trophic relationships (e.g., a desert community or a pond community).

Complete exposure pathway - An exposure pathway where a human or ecological receptor is exposed to a chemical of concern via an exposure route (e.g., incidental soil ingestion, inhalation of volatiles and particulates, consumption of prey, etc).

De minimus - The description of an area of affected property comprised of one acre or less where the ecological risk is considered to be insignificant because of the small extent of contamination, the absence of protected species, the availability of similar unimpacted habitat nearby, and the lack of adjacent sensitive environmental areas.

Ecological protective concentration level - The concentration of a chemical of concern at the point of exposure within an exposure medium (e.g., soil, sediment, groundwater, or surface water) which is determined in accordance with §350.77(c) or (d) of this title (relating to Ecological Risk Assessment and Development of Ecological Protective Concentration Levels) to be protective for ecological receptors. These concentration levels are primarily intended to be protective for more mobile or wide-ranging ecological receptors and, where appropriate, benthic invertebrate communities within the waters in the state. These concentration levels are not intended to be directly protective of receptors with limited mobility or range (e.g., plants, soil invertebrates, and small rodents), particularly those residing within active areas of a facility, unless these receptors are threatened/endangered species or unless

¹These definitions were taken from 30 TAC §350.4 and may have both ecological and human health applications. For the purposes of this checklist, it is understood that only the ecological applications are of concern.

impacts to these receptors result in disruption of the ecosystem or other unacceptable consequences for the more mobile or wide-ranging receptors (e.g., impacts to an off-site grassland habitat eliminate rodents which causes a desirable owl population to leave the area).

Ecological risk assessment - The process that evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors; however, as used in this context, only chemical stressors (i.e., COCs) are evaluated.

Environmental medium - A material found in the natural environment such as soil (including non-waste fill materials), groundwater, air, surface water, and sediments, or a mixture of such materials with liquids, sludges, gases, or solids, including hazardous waste which is inseparable by simple mechanical removal processes, and is made up primarily of natural environmental material.

Exclusion criteria - Those conditions at an affected property which preclude the need to establish a protective concentration level for an ecological exposure pathway because the exposure pathway between the chemical of concern and the ecological receptors is not complete or is insignificant.

Exposure medium - The environmental medium or biologic tissue in which or by which exposure to chemicals of concern by ecological or human receptors occurs.

Facility - The installation associated with the affected property where the release of chemicals of concern occurred.

Functioning cap - A low permeability layer or other approved cover meeting its design specifications to minimize water infiltration and chemical of concern migration, and prevent ecological or human receptor exposure to chemicals of concern, and whose design requirements are routinely maintained.

Landscaped area - An area of ornamental, or introduced, or commercially installed, or manicured vegetation which is routinely maintained.

Off-site property (off-site) - All environmental media which is outside of the legal boundaries of the on-site property.

On-site property (on-site) - All environmental media within the legal boundaries of a property owned or leased by a person who has filed a self-implementation notice or a response action plan for that property or who has become subject to such action through one of the agency's program areas for that property.

Physical barrier - Any structure or system, natural or manmade, that prevents exposure or prevents migration of chemicals of concern to the points of exposure.

Point of exposure - The location within an environmental medium where a receptor will be assumed to have a reasonable potential to come into contact with chemicals of concern. The point of exposure may be a discrete point, plane, or an area within or beyond some location.

Protective concentration level - The concentration of a chemical of concern which can remain within the source medium and not result in levels which exceed the applicable human health risk-based exposure limit or ecological protective concentration level at the point of exposure for that exposure pathway.

Release - Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, with the exception of:

- (A) A release that results in an exposure to a person solely within a workplace, concerning a claim that the person may assert against the person's employer;
- (B) An emission from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine;
- (C) A release of source, by-product, or special nuclear material from a nuclear incident, as those terms are defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. §2011 et seq.), if the release is subject to requirements concerning financial protection established by the Nuclear Regulatory Commission under §170 of that Act;

(D) For the purposes of the environmental response law §104, as amended, or other response action, a release of source, by-product, or special nuclear material from a processing site designated under §102(a)(1) or §302(a) of the Uranium Mill Tailings Radiation Control Act of 1978 (42 U.S.C. §7912 and §7942), as amended; and

(E) The normal application of fertilizer.

Sediment - Non-suspended particulate material lying below surface waters such as bays, the ocean, rivers, streams, lakes, ponds, or other similar surface water body (including intermittent streams). Dredged sediments which have been removed from below surface water bodies and placed on land shall be considered soils.

Sensitive environmental areas - Areas that provide unique and often protected habitat for wildlife species. These areas are typically used during critical life stages such as breeding, hatching, rearing of young, and overwintering. Examples include critical habitat for threatened and endangered species, wilderness areas, parks, and wildlife refuges.

Source medium - An environmental medium containing chemicals of concern which must be removed, decontaminated and/or controlled in order to protect human health and the environment. The source medium may be the exposure medium for some exposure pathways.

Stressor - Any physical, chemical, or biological entity that can induce an adverse response; however, as used in this context, only chemical entities apply.

Subsurface soil - For human health exposure pathways, the portion of the soil zone between the base of surface soil and the top of the groundwater-bearing unit(s). For ecological exposure pathways, the portion of the soil zone between 0.5 feet and 5 feet in depth.

Surface cover - A layer of artificially placed utility material (e.g., shell, gravel).

Surface soil - For human health exposure pathways, the soil zone extending from ground surface to 15 feet in depth for residential land use and from ground surface to 5 feet in depth for commercial/industrial land use; or to the top of the uppermost groundwater-bearing unit or bedrock, whichever is less in depth. For ecological exposure pathways, the soil zone extending from ground surface to 0.5 feet in depth.

Surface water - Any water meeting the definition of surface water in the state as defined in §307.3 of this title (relating to Abbreviations and Definitions), as amended.

PART I. Affected Property Identification and Background Information

1) Provide a description of the specific area of the response action and the nature of the release. Include estimated acreage of the affected property and the facility property, and a description of the type of facility and/or operation associated with the affected property. Also describe the location of the affected property with respect to the facility property boundaries and public roadways.

Camp Stanley Storage Activity: CSSA is located in northwestern Bexar County, about 19 miles northwest of downtown San Antonio. The installation consists of approximately 4,004 acres immediately east of Ralph Fair Road, and approximately 0.5 mile east of Interstate Highway 10 (see Figure 1). CSSA has several historical waste sites, including SWMUs, AOCs, and RMUs. The present mission of CSSA is the receipt, storage, issue, and maintenance of ordnance as well as quality assurance testing and maintenance of military weapons and ammunition. Because of its mission, CSSA has been designated a restricted access facility. No changes to the CSSA mission and/or military activities are expected in the future.

AOC-73: AOC-73 is a small site (approximately 0.113 acre) located in the northwestern portion of the North Pasture area of CSSA, approximately 480 feet from the northern boundary and 1,580 feet from the western boundary of the installation (see Figure 2). The site was the location of a small area used by a former rancher for dumping general household trash and metal and lumber debris (including miscellaneous old tools, cans, bottles, barbed wire, and scraps of lumber and sheet metal). The land had been a tract of land owned by the Blank family in the 1930s. In 1940, when the U.S. was making preparations to enter World War II, this tract and three other tracts of ranch land located north of Camp Stanley were acquired by Camp Bullis, which shares common borders with CSSA to the north, east, and south. These tracts of land were later transferred back from Camp Bullis to CSSA. These tracts of land were shown on Figure 3. There is no evidence that the northern portion of CSSA, where the Blank family ranch was located, was ever used for military practice or waste disposal. Waste removal activities were performed in March 2008.

Attach available USGS topographic maps and/or aerial or other affected property photographs to this form to depict the affected property and surrounding area. Indicate attachments:

- Topo map Aerial photo Other

Aerial photo of the surrounding land area was shown on Figure 2. Aerial photo of the site was shown on Figure 4.

2) Identify environmental media known or suspected to contain chemicals of concern (COCs) at the present time. Check all that apply:

<u>Known/Suspected COC Location</u>	<u>Based on sampling data?</u>	
<input type="checkbox"/> NO – Soil ≤ 5 ft below ground surface	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> NO – Soil >5 ft below ground surface	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> NO – Groundwater	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> NO – Surface Water/Sediments	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Explain (previously submitted information may be referenced):

Described in Sections 3.2 and 3.3 of the RIR.

3) Provide the information below for the nearest surface water body which has become or has the potential to become impacted from migrating COCs via surface water runoff, air deposition, groundwater seepage, etc. Exclude wastewater treatment facilities and stormwater conveyances/impoundments authorized by permit. Also exclude conveyances, decorative ponds, and those portions of process facilities which are:

- a. Not in contact with surface waters in the State or other surface waters which are ultimately in contact with surface waters in the State; and
- b. Not consistently or routinely utilized as valuable habitat for natural communities including birds, mammals, reptiles, etc.

The nearest surface water body is **2,200 feet** from the affected property and is named **Northwest Pond (see Figure 5)** The water body is best described as a:

- freshwater stream: _____ perennial (has water all year)
 _____ intermittent (dries up completely for at least 1 week a year)
 _____ intermittent with perennial pools
- freshwater swamp/marsh/wetland
- saltwater or brackish marsh/swamp/wetland
- ~~reservoir, lake, or~~ **pond**; approximate surface acres: **less than 1/2 acre in size when full**
- drainage ditch
- tidal stream bay estuary
- other; specify

Is the water body listed as a State classified segment in Appendix C of the current Texas Surface Water Quality Standards; §§307.1 - 307.10?

- Yes Segment # _____ Use Classification:
- No

If the water body is not a State classified segment, identify the first downstream classified segment.

Name:

Salado Creek Drainage Basin

Segment #:

AOC-73 is within the unnamed tributary of Salado Creek; thence to Salado Creek in Segment No. 1910 of the San Antonio River Basin (Salado Creek – from the confluence with the San Antonio River in Bexar County to Rocking Horse Lane west of Camp Bullis in Bexar County).

Use Classification:

The unclassified receiving waters for the unnamed tributary of Salado Creek have no significant aquatic life use. The designated uses for Segment No. 1910 are high aquatic life use, contact recreation, public water supply, and aquifer protection – no degradation of high quality receiving waters is anticipated.

As necessary, provide further description of surface waters in the vicinity of the affected property:

Closest portion of Salado Creek tributary to AOC-73 is approximately 1,820 feet to the southwest.

PART II. Exclusion Criteria and Supportive Information**Subpart A. Surface Water/Sediment Exposure**

1) Regarding the affected property where a response action is being pursued under the TRRP, have COCs migrated and resulted in a release or imminent threat of release to either surface waters or to their associated sediments via surface water runoff, air deposition, groundwater seepage, etc.? Exclude wastewater treatment facilities and stormwater conveyances/impoundments authorized by permit. Also exclude conveyances, decorative ponds, and those portions of process facilities which are:

- a. Not in contact with surface waters in the State or other surface waters which are ultimately in contact with surface waters in the State; and
- b. Not consistently or routinely utilized as valuable habitat for natural communities including birds, mammals, reptiles, etc.

Yes No

Explain:

Since no contamination was found at AOC-73, there is no impact to groundwater or surface water/sediment in the area. This is supported by the depth to groundwater (130 to 310 feet bgs, depending on rainfall), results of groundwater monitoring at well CS-MWH-LGR, and distance (1,820 feet) to the closest surface water body (intermittent Salado Creek).

If the answer is Yes to Subpart A above, the affected property does not meet the exclusion criteria. However, complete the remainder of Part II to determine if there is a complete and/or significant soil exposure pathway, then complete PART III - Qualitative Summary and Certification. If the answer is No, go to Subpart B.

Subpart B. Affected Property Setting

In answering "Yes" to the following question, it is understood that the affected property is not attractive to wildlife or livestock, including threatened or endangered species (i.e., the affected property does not serve as valuable habitat, foraging area, or refuge for ecological communities). (May require consultation with wildlife management agencies.)

1) Is the affected property wholly contained within contiguous land characterized by: pavement, buildings, landscaped area, functioning cap, roadways, equipment storage area, manufacturing or process area, other surface cover or structure, or otherwise disturbed ground?

Yes No

Explain:

If the answer to Subpart B above is Yes, the affected property meets the exclusion criteria, assuming the answer to Subpart A was No. Skip Subparts C and D and complete PART III - Qualitative Summary and Certification. If the answer to Subpart B above is No, go to Subpart C.

Subpart C. Soil Exposure

1) Are COCs which are in the soil of the affected property solely below the first 5 feet beneath ground surface **or** does the affected property have a physical barrier present to prevent exposure of receptors to COCs in surface soil?

Yes No

Explain:

Based on Table 1 of the RIR there are no COCs at the site.

If the answer to Subpart C above is Yes, the affected property meets the exclusion criteria, assuming the answer to Subpart A was No. Skip Subpart D and complete PART III - Qualitative Summary and Certification. If the answer to Subpart C above is No, proceed to Subpart D.

Subpart D. De Minimus Land Area

In answering "Yes" to the question below, it is understood that all of the following conditions apply:

- The affected property is not known to serve as habitat, foraging area, or refuge to threatened/endangered or otherwise protected species. (Will likely require consultation with wildlife management agencies.)
- Similar but unimpacted habitat exists within a half-mile radius.
- The affected property is not known to be located within one-quarter mile of sensitive environmental areas (e.g., rookeries, wildlife management areas, preserves). (Will likely require consultation with wildlife management agencies.)
- There is no reason to suspect that the COCs associated with the affected property will migrate such that the affected property will become larger than one acre.

1) Using human health protective concentration levels as a basis to determine the extent of the COCs, does the affected property consist of one acre or less and does it meet all of the conditions above?

Yes No

Explain how conditions are met/not met:

The site is only approximately 0.113 acre in size.

Based on Table 1 of the RIR, there are no COCs at the site (*i.e.*, the concentrations of chemicals detected at the site are below human health action levels).

Several surveys have been conducted at CSSA for threatened and endangered (T&E) species. The only T&E species that have been documented at CSSA are the black-capped vireo (*Vireo atricapillus*) [BCVI] and golden-cheeked warbler (*Dendroica chrysoparia*) [GCWA]. AOC-73 is not located within BCVI or GCWA habitat. Additional information can be found in the following references:

- Parsons, 2007b. *Final Integrated Natural Resource Management Plan*. Prepared for Camp Stanley Storage Activity, Boerne, Texas. October 2007.
- Parsons, 2008. *Final Species and Habitat Distributions of Black-Capped Vireos and Golden-Cheeked Warblers, 2007 Breeding/Nesting Season*. Prepared for Camp Stanley Storage Activity, Boerne, Texas. March 2008.

If the answer to Subpart D above is Yes, then no further ecological evaluation is needed at this affected property, assuming the answer to Subpart A was No. Complete PART III - Qualitative Summary and Certification. If the answer to Subpart D above is No, proceed to Tier 2 or 3 or comparable ERA.

PART III. Qualitative Summary and Certification (Complete in all cases).

Attach a brief statement (not to exceed 1 page) summarizing the information you have provided in this form. This summary should include sufficient information to verify that the affected property meets or does not meet the exclusion criteria. The person should make the initial decision regarding the need for further ecological evaluation (i.e., Tier 2 or 3) based upon the results of this checklist. After review, TNRCC will make a final determination on the need for further assessment. **Note that the person has the continuing obligation to re-enter the ERA process if changing circumstances result in the affected property not meeting the Tier 1 exclusion criteria.**

Completed by: Lea Aurelius, P.G. (Typed/Printed Name)

Senior Scientist (Title)

September 30, 2008 (Date)

I believe that the information submitted is true, accurate, and complete, to the best of my knowledge.

Julie Burdey, P.G. (Typed/Printed Name of Person)

Project Manager (Title of Person)



(Signature of Person)

September 30, 2008 (Date Signed)