ATTACHMENT J4

Columbus AFB Wastewater Collection System

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J4.1 Columbus AFB Overview

J4.1.1 Description

Columbus Air Force Base is located in the Black Plains area in northeast Mississippi, approximately nine miles north of downtown Columbus, Mississippi. The City of Columbus is approximately ten miles from the Alabama state line on U.S. Highways 45 and 82 in an essentially rural setting. The almost unrestricted air space surrounding Columbus AFB is almost as valuable to the Air Force as the land itself and is particularly desirable for the student pilot training in the associated aircraft military operating areas.

J4.1.2 Installation Profile

Columbus AFB has three on-base runways and one runway at the auxiliary field at Shuqualak. The base is located on 4,903 acres including easements and right-of-way for runway approach and the drainage ways off-base. Over 218 assigned aircraft and 14 cockpit simulators are used for training the Undergraduate Pilots.

Columbus AFB was established through the efforts of local citizens in an attempt to secure defense industries as well as support the national response to world geopolitical activity. On June 26, 1941, the War Department approved an Army Air Field for the Columbus, MS area. The Department of Agriculture transferred 750 acres to the Army in August 1941 and the federal government leased 3,579 acres from the City of Columbus and Lowndes County, MS. The original mission of the installation was to serve as a twin engine advanced flying school. The onset of WW II expedited activity at the base with the first training beginning on February 9, 1942. Initially named for a local WW I war hero, the installation name was changed to Columbus Army Flying School in April 1942. Over 7000 pilots were trained at the school during WW II.

The installation was deactivated for approximately five years until world events again required a U.S. military build up. In March 1951 the base, renamed Columbus Air Force Base, was reopened. It provided both primary and basic flight training under the supervision of the USAF Air Training Command. In April 1955 the base became part of the Strategic Air Command (SAC) Second Air Force and the 4228th Air Base Squadron was organized. As part of SAC's base dispersal program new and modernized facilities were added to the installation inventory. The leased property was purchased by the federal government in September 1956. In December 1957, Columbus AFB was designated the home base for a B-52 squadron and a KC-135 jet refueling squadron. The first KC-135 of the 901st Air Refueling Squadron arrived on January 7, 1959 and the first B-52 landed on May 28, 1959.

Columbus AFB was returned to the Air Training Command on July 1, 1969 and resumed the mission of training pilots under the command of the 3650th Pilot Training Wing. The current host unit, the 14th Flying Training Wing was activated at the base on June 1, 1972.

As of 1998, there were 901 active duty personnel and 626 military dependents living on base, with 497 active duty and 471 military dependents living off base. There were 1,318 civilian employees. Military retirees in the area number 3,444. There are 171 facilities on the installation and currently 577 military family housing units. 232 military family housing units were recently demolished and are currently being replaced with 120 new duplex single and two story units, funded and under construction. 100 more military family housing units are scheduled for construction as funding is authorized.

J4.1.3 Mission

The mission statement of the 14th Flying Training Wing is: "To defend the United States of America by training the world's best pilots and warriors". The wing vision is to maintain the world's premier pilot training environment. The Wing Goals are to provide gaining commands top-quality pilots and combat-ready warriors, enhance quality of life, protect and improve equipment and facilities, and embrace the "BLAZE" values of building leaders, advancing integrity, service before self, and excellence in all they do.

The Columbus AFB Specialized Undergraduate Pilot Training (SUPT) syllabus includes a 52-week intensive training program to earn the prestigious silver wings. Students learn visual flight rules, instrument navigation and formation flying through classroom training, full motion and visual system flight simulators and the use of operational trainer aircraft, such as the T-37 "Tweet," the T-38 "Talon," and the T-1 "Jayhawk." Some graduates continue training in the AT-38B aircraft, learning Introduction to Fighter Fundamentals.

Columbus AFB expects to receive the Joint Primary Aircraft Training System aircraft-the T-6A Texan II. The T-6A will replace the Air Force's T-37 and Navy's T-34 as the joint primary trainer. The new aircraft will be used to train entry-level aviation students into one of four training tracks: the Air Force's bomber/fighter track; the Air Force's airlift/tanker or Navy's maritime track; the Navy's strike track; or the Air Force helicopter track.

J4.2 Wastewater Collection System Description

J4.2.1 Wastewater Collection System Fixed Equipment Inventory

The Columbus AFB wastewater collection system consists of all appurtenances physically connected to the collection system from the point of demarcation defined by the Right of Way. The system may include, but is not limited to, pipelines, manholes, lift stations, valves, controls, treatment plants, and meters. The actual inventory of items sold will be in the bill of sale at the time the system is transferred. The following description and inventory is included to provide the Contractor a general understanding of the size and configuration of the distribution system. The Government makes no representation that the inventory is accurate. The Contractor shall base its proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any service cost adjustments based on the accuracy of the following description and inventory.

Specifically excluded from the wastewater collection system privatization are:

- Oil/water separators
- Storm sewers/drainage systems
- Septic tanks/systems
- Grease traps
- Wastewater collection system within MFH areas

J4.2.1.1 Description

The Columbus Air Force Base has a sewage collection system that serves the majority of the site. A handful of remote areas are served by septic tank systems with drainfields. Gravity sewer lines, pump/lift stations, and force mains transport the majority of sewage to a manhole just west of the Base South Gate where the three base primary sewage mains dump into the City of Columbus wastewater interceptor. Then the sewage flows off the base to a City of Columbus pumping station. Sewage flow from the main base averages 0.37 million gallons per day.

In the past, Columbus Air Force Base operated its own 0.75-mgd wastewater treatment plant. On June 4, 1998, the Air Force's sewage trickling filter plant was taken off line. The City built an 18-inch gravity interceptor to collect the sewage from the base and transport it to their Aberdeen Road Pump Station property. The Air Force has demolished their decommissioned sewage treatment plant.

Domestic sewage is collected throughout the Columbus AFB through underground pipelines, ranging in size from 4 inches, for house or building connections, to 12 inches for the main sewer connections. Most of the system is 50 years old or more. Original pipe materials of construction included non-reinforced concrete, ductile iron, and vitrified clay. Later expansions used PVC. The predominant pipe materials are concrete and vitrified clay. Overall, there is an estimated 100,000 linear feet of sewer pipe and force mains and 100 manholes. There are four pump stations on the base, all of which have been rehabilitated within the last 5 years, including replacement pumps and control panels. All of the pump stations have submersible pumps. Two pump stations are in MFH areas and are excluded from utility privatization.

The Columbus sewage system boundaries are the collection, and conveyance systems within the Columbus Air Force Base property. This includes building service connections, or laterals and excludes the golf course irrigation system.

All 23 oil-water separators on site (six are scheduled for removal) are excluded from the sewage system. An outside contractor already performs operation and maintenance for these systems.

Any septic tank systems or other on-site systems are also excluded from the sewage collection and treatment system for the purposes of this feasibility study. Columbus AFB has five septic tanks and drainfields on base and one septic tank and drainfield in use at the Shuqualak facility located off base. Columbus does own one septic tank pumping/cleaning truck that is excluded from this utility privatization inventory.

There is a recently constructed small lift station at Building 995 specifically for servicing the T-1A hangar. It will be turned over to the Privatization Contractor.

CURRENT SITUATION: Clay pipe sewer lines have been in place for over 50 years. In almost the entire line, roots have entered the sewer lines at the joints. In several places lines have been crushed due to construction equipment loads, and in other places, misalignment as the result of uneven settlement has caused interruption of flow or provided infiltration access from ground water. As a result, City of Columbus sewer interceptor receives up to 50 per cent excess water for treatment, dependent on amount of ambient rainfall. Recent project construction by INSITUFORM that relines the existing sewer mains has resulted in upgrading almost 70% of the deteriorated sewer mains in State/Magnolia Villages, plus significant upgrade on the main base. Additional projects noted by scope in J4.7 itemize the remaining sewer system upgrade needed on Columbus AFB.

Housing privatization is scheduled to occur at Columbus AFB in FY 04. Wastewater collection within the MFH areas is excluded from utility privatization. It will become the property of the housing privatization contractor.

J4.2.1.2 Inventory

Table 1 provides a general listing of the major Wastewater Collection System fixed assets for the Columbus AFB Wastewater Collection System included in the sale.

TABLE 1
Fixed Inventory
Wastewater Collection System Columbus AFB

Component Description	Size	Quantity	Unit of Measure	Material Type[1]	Approximate Year Installed
Drage and sewage pipg (Force Main)	2"	150	LF	PVC	2002
Drainage and sewage piping	4"	440	LF	VC	1942
Drainage and sewage piping	4"	660	LF	VC	1958
Drainage and sewage piping	4"	210	LF	VC	1956
Drainage and sewage piping	4"	19,454	LF	VC	1958
Drainage and sewage piping	4"	1,670	LF	VC	1957
Drainage and sewage piping	4"	18,095	LF	VC	1962
Drainage and sewage piping	4"	780	LF	VC	1969
Drainage and sewage piping	4"	590	LF	VC	1972
Drainage and sewage piping	4"	345	LF	VC	1976
Drainage and sewage piping	4"	1,275	LF	PVC	1981
Drainage and sewage piping	4"	510	LF	PVC	1985
Drainage and sewage piping	4"	80	LF	PVC	1986
Drainage and sewage piping	4"	630	LF	PVC	1990
Drainage and sewage piping	4"	50	LF	PVC	1992
Drainage and sewage piping	4"	250	LF	PVC	2002
Drainage and sewage piping	4"	10,100	LF	PVC	2002
Drage and sewage pipg (Force Main)	4"	5,550	LF	DI	1959
Drainage and sewage piping	6"	260	LF	VC	1958
Drainage and sewage piping	6"	470	LF	VC	1959
Drainage and sewage piping	6"	1,000	LF	VC	1961
Drainage and sewage piping	6"	350	LF	VC	1963
Drainage and sewage piping	6"	250	LF	VC	1966

Component Description	Size	Quantity	Unit of Measure	Material Type[1]	Approximate Year Installed
Drainage and sewage piping	6"	330	LF	PVC	1976
Drainage and sewage piping	6"	90	LF	PVC	1990
Drainage and sewage piping	6"	300	LF	PVC	2000
Drainage and sewage piping	8"	3,010	LF	C	1942
Drainage and sewage piping	8"	11,492	LF	C	1958
Drainage and sewage piping	8"	11,200	LF	C	1963
Drainage and sewage piping	8"	1,380	LF	C	1969
Drainage and sewage piping	8"	1,520	LF	C	1972
Drainage and sewage piping	8"	590	LF	PVC	1976
Drainage and sewage piping	8"	1,370	LF	PVC	1981
Drainage and sewage piping	8"	835	LF	PVC	1983
Drainage and sewage piping	8"	900	LF	PVC	1987
Drainage and sewage piping	8"	760	LF	PVC	1991
Drage and sewage pipg (Force Main)	8"	2,725	LF	DI	1958
Drainage and sewage piping	10"	600	LF	C	1942
Drainage and sewage piping	10"	1,340	LF	C	1958
Drainage and sewage piping	10"	3,840	LF	C	1959
Drainage and sewage piping	10"	3,390	LF	C	1962
Drainage and sewage piping	10"	90	LF	PVC	1990
Drainage and sewage piping	12"	1,140	LF	C	1942
Drainage and sewage piping	12"	170	LF	C	1958
Drainage and sewage piping	12"	400	LF	C	1959
Cleanout Tees	4"	7	EA		2002
Pump Station Building, (Fac # 528)	134 SF	1	EA	BRICK	1965
Pump Station Facility, (Fac# 1806)	(wet well)	1	EA	Conc	1970
Submersible Pump (In Fac # 528)	10 HP	3	EA		1994
Lift Station Pump, SAC Facility, 1806	10 HP	2	EA		1970
T1 Hangar Packaged (Unitary) Lift Station Pump	3 HP	1	EA		2000
Lift Station Submersible Pump, in Corrosion Control Bldg	2 HP	1	EA		2000
Lift Station Submersible Pump, in Bldg 151	3 HP	1	EA		2002
Manholes	4' ID, avg 8' d	34	EA	Brick	1942
Manholes	4' ID, avg 8' d	11	EA	Brick	1963
Manholes	4' ID, avg 8' d	10	EA	Brick	1969
Manholes	4' ID, avg 8' d	3	EA	Brick	1971
Manholes	4' ID, avg 8' d	6	EA	Brick	1972
Manholes	4' ID, avg 8' d	8	EA	Brick	1976
Manholes	4' ID, avg 8' d	9	EA	Precast	1980
Manholes	4' ID, avg 8' d	8	EA	Precast	1987
Manholes	4' ID, avg 8' d	4	EA	Precast	1991
Manholes	4' ID, avg 8' d	2	EA	Precast	2000
Manholes	4' ID, avg 8' d	2	EA	Precast	2002

Component Description	Size	Quantity	Unit of Measure	Material Type[1]	Approximate Year Installed

Legend:
LF- Linear Feet VC - Vitrified Clay
CI - Cast Iron DI - Ductile Iron
EA – Each PVC – Polyvinyl Chloride
Conc - concrete

Notes:
1. Drawings furnished by Columbus AFB do not indicate material types. Material types have been assumed and may not necessarily reflect the actual material in place.

J4.2.2 Wastewater Collection System Non-Fixed Equipment and Specialized Tools

Table 2 lists the other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting his bid. Offerors shall make his own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 2
Spare Parts
Wastewater Collection System Columbus AFB

Qty	Item	Make/Model	Description	Remarks
	NONE			

TABLE 3
Specialized Vehicles and Tools
Wastewater Collection System Columbus AFB

Description	Quantity	Location	Maker
NONE			

J4.2.3 Wastewater Collection System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Wastewater Collection System Columbus AFB

Qty	Item	Description	Remarks
1	CD	UTILITY SYSTEM DRAWINGS	AUTOCAD REL 2002
1	MANUALS, TESTS, RECORDS		MADE AVAILABLE FOR REFERENCE IN BASE TECH LIBRARY

J4.3 Specific Service Requirements

The service requirements and standards for the Columbus AFB wastewater collection system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements, if any, are specific to the Columbus AFB wastewater collection system and are in addition to those found in Section C. If there is a conflict between standards described below and Section C, the standards listed below take precedence over those found in Section C.

- As to digging permits, the Contractor will be required to mark his own utilities and will be responsible for initiating, officiating, and tracking digging permits for his own utilities. IAW Mississippi Code of 1972 Section 77-13-5 and -11, the Contractor will provide not less than five (5) and not more that ten (10) working days notice of any needed excavations to Mississippi One Call System and to said Utilities Privatization Administrative Contracting Officer so the location of underground utilities may be located and marked by the applicable utility owner.
- The wastewater service for Columbus AFB is currently monitored-only from the Energy Management and Control System (EMCS) in Building 385, Civil Engineers, as defined by the EMCS points log available in the Technical Library. Wastewater service equipment monitored-only by the EMCS are at the three (3) sewage lift stations. The proposing wastewater utility contractor shall monitor the system 24/7 in accordance with service standard criteria.

J4.4 Current Service Arrangement

Sewage flow from the Columbus AFB is measured at a flow meter owned by the City at the Aberdeen Road Pump Station. Based on a review of the sewer billings the sewage flow is estimated at:

Daily Average:	374 kgd
Total Annual Sewage Volume:	136,433 kgal
High Month – April 2002	16,805 kgal
Low Month – November 2001	8,057 kgal

The sewage flow is based on the actual monthly meter readings for FY 02

J4.5 Secondary Metering

There are currently no requirements for secondary metering of wastewater included in this contract. Any future wastewater secondary metering requested by the Government will be IAW Paragraph C.3, Future Secondary Meters.

J4.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoice (IAW G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

Name:	Utility COTR	Utility Contract Administrator
Address:	14 CES/CEOC	14 CONS/LGC
	555 Simler Blvd	555 Seventh St, Bldg 724
	Columbus AFB, MS 39710	Columbus AFB, MS 39710
Phone number:	662-434-7403	

2. Outage Report. The Contractor's monthly outage report (blockage and overflow information) will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

Name:	Utility COTR	Utility Contract Administrator
Address:	14 CES/CEOC	14 CONS/LGC
	555 Simler Blvd	555 Seventh St, Bldg 724
	Columbus AFB, MS 39710	Columbus AFB, MS 39710
Phone number:	662-434-7403	

3. Infiltration and Inflow Report. If required by Clause C.3, the Contractor shall submit an Infiltration and Inflow report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

Name:	Utility COTR	Utility Contract Administrator
Address:	14 CES/CEOC	14 CONS/LGC
	555 Simler Blvd	555 Seventh St, Bldg 724
	Columbus AFB, MS 39710	Columbus AFB, MS 39710
Phone number:	662-434-7403	

J4.7 Infiltration and Inflow (I&I) Projects

IAW C.3, Utility Service Requirement, the following projects have been implemented by the Government for managing and monitoring I&I.

Project 00-2014A and 01-2014A, Repair Sanitary Sewer System (INSITUFORM Sleeve lining Method currently used)

00-2014A and 01-2014A:
Point Repair Distribution Mains (8" diameter, PVC) – 210 CY
Point Repair Service Lines (4" diameter, PVC – 225 CY
Reline Manholes - 14 EA

Reline Distribution Mains, 8” diameter – 9136 LF
Reline Service Lines, 4” diameter -- 325 LF

Description of proposed construction work:
Excavate distribution mains between manholes where failed, replace damaged, misaligned clay tile sanitary sewer lines with 8” diameter PVC. Re-connect service lines to distribution mains. Seal and reline manholes. Seal distribution mains with inflatable sealing gel liners. Seal service lines from clean out plugs to distribution mains with liner.

J4.8 Service Area

IAW Clause C.4, Service Area, the service area is defined as all areas within the Columbus AFB boundaries.

J4.9 Off-Installation Sites

No off-installation sites are included in the sale of the Columbus AFB wastewater collection system.

J4.10 Specific Transition Requirements

IAW Clause C.13, Transition Plan, **Table 5** lists service connections and disconnections required upon transfer.

TABLE 5
Service Connections and Disconnections
Wastewater Collection System Columbus AFB

Location	Description
NONE	

J4.11 Government Recognized System Deficiencies

Table 6 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as current deficiencies associated with the Columbus AFB wastewater collection system. If the utility is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AB.

TABLE 6

System Improvement Projects
Wastewater Collection System Columbus AFB

Project Location	Project Description
EEPZ 002014A	Repair Sanitary Sewer System, Phase 3