ATTACHMENT J3

Tinker AFB Water Distribution System

TABLE OF CONTENTS

LIST OF TABLES

J3 Tinker AFB Water Distribution System

J3.1 Tinker AFB Overview

Centrally located in Oklahoma County, Tinker AFB occupies 5,041 acres on the southeast edge of Oklahoma City, Oklahoma. Tinker AFB is the logistics leader in providing specialized logistics support, management, maintenance, and distribution to defense weapons systems worldwide. Tinker AFB is located near the intersection of three major interstate highway systems. The Base is bounded by Midwest City to the north, Del City to the west, and Oklahoma City to the east, south, and southwest. Tinker AFB maintains a close relationship with local communities and provides a substantial economic impact on the surrounding region.

J3.1.1 Installation History

In 1940, a group of Oklahoma City civic leaders and businessmen learned that the War Department was considering the central United States as a location for a maintenance and supply depot. The City leaders targeted a 480-acre site and acquired an option for 960 additional acres of land adjoining SE 29th Street. On 8 April 1941, the order was officially signed awarding the depot to Oklahoma City.

In 1942, the new installation was named Tinker Field in honor of Major General Clarence L. Tinker of Pawhuska, Oklahoma. General Tinker lost his life while leading a flight of LB-30 "Liberators" on a long-range strike against Japanese forces on Wake Island during the early months of World War II.

Immediately following World War II, Tinker expanded to include the Douglas aircraft assembly plant and was named the Oklahoma City Air Materiel Area (OCAMA). The Base remained an important logistics center as it began to service jet engines of the modern Air Force, and became an all jet maintenance facility by 1953. In June of 1954, Tinker accepted delivery of its first B-52 Stratofortress.

Throughout the Korean conflict, Tinker continued its output, keeping planes flying and funneling supplies to the Far East. In 1955, Tinker gained a major tenant with the addition of the 506th Tactical Fighter Wing.

By the end of the 1950s, OCAMA received a complete management system overhaul to accommodate the latest Air Force weapons – the B-52 bomber and the KC-135 tanker.

During the 1960s, Tinker's support of additional aircraft grew. During that decade the depot became the single place for overhauling the J57, TF30, and J79 engines, as well as new communications and electronics systems. Tinker's Combat Control Station played a major role during the Cuban Missile Crisis. In 1966, Tinker became the world's largest jet engine repair and overhaul facility when it took on the maintenance of the TF30 engines which powered the swing-winged F-111 Aardvark. Tinker was designated an inland aerial port of embarkation (APOE) in December 1967 in recognition of Tinker's importance as a logistic hub.

During the 1970s, the Base took on management of new weapons including the A-7D Corsair, the E-3A Airborne Warning and Control (AWAC) aircraft, the E-4 Airborne Command Post aircraft, and the BGM 109 Ground Launched Cruise Missile. In 1974 the depot was renamed the Oklahoma City Air Logistics Center.

In the 1980s, the revitalized B-1B Lancer, the Air Launched Cruise Missile, and the KC-10 Extender were added to an already impressive list of OC-ALC management responsibilities. In the mid-1980s the 552nd Airborne Warning and Control Division upgraded to the E-3 Sentry, became a Wing once again, and was placed under the 28th Air Division.

In 1991, two Navy E-6 squadrons were activated at Tinker AFB to maintain a flying communications link between the National Command Authority and ballistic missile submarines around the world.

Tinker AFB and OC-ALC provided front line support to the forces engaged in Operation Desert Shield and Desert Storm in the early 1990s. In 1993, two significant changes occurred at Tinker when the Aerial Port of Embarkation closed, and the new B-2 Stealth Bomber Weapons Systems Support Center opened. In 1997, Tinker received the first shipment of equipment to support the core engine workload previously done at Kelly Air Force Base.

Today, Tinker AFB's mega aviation complex contains over 700 buildings (excluding housing), 2 operational runways, 234 acres of ramp space, and 48 miles of roadways. The Base is a multi-faceted member of the Air Force team containing several diversified organizations and missions including the Oklahoma City Air Logistics Center, and the Navy.

J3.1.2 Physical Assets

Facilities at the Base encompass two runways, associated taxiways and parking aprons; administrative areas; industrial facilities; dormitories and housing areas; and recreational facilities and open space. The physical profile of Tinker AFB is shown in the following table.

Installation Assets	
Land Area	5,041 Acres
Buildings	750; 15,625,507 SF
Military Family Housing	730 Units; 1,083,972 SF
Surface Roads	48 Miles
Runway 17/35	11,100 Feet
Runway 12/30	10,000 Feet
Aircraft Ramp Space	234 Acres
Indoor Maintenance	136 Acres
Covered Storage	79 Acres

Nearly all of the Tinker AFB land area is fee owned, including two GSUs. The one exception is the Glenwood Area GSU, a 343-acre leased plot located north of Interstate Highway 40.

Tinker AFB is comprised of several geographically defined sub-areas. These architectural/planning districts contain functionally related facilities, similar architectural treatments, and function as useful geographical identifiers. These districts are defined as follows:

- North Side Industrial District (Area A)
- Southeast Munitions District (Area B)
- Northeast Industrial District (Area C)
- 38 EIG District (Area D)
- West Community District (Area E)
- South Forty (Southwestern/Navy) District
- Airfield District

J3.1.3 Mission, Organization, and Associate Units

The primary mission of Tinker Air Force Base is to provide for the management, storage, and depot level maintenance of all components and the end items of all major weapon systems assigned to the Air Logistics Center.

Tinker AFB's largest organization is the OC-ALC, one of three depot repair centers in the Air Force Materiel Command (AFMC), with headquarters at Wright-Patterson AFB, Ohio. Tinker AFB is also home to several major Department of Defense, Air Force, and Navy activities with critical national defense missions.

The OC-ALC is the worldwide manager for a broad range of aircraft, engines, missiles and commodity items. The OC-ALC manages over 40 aircraft types including the B-1B Lancer, B-52 Stratofortress, B-2 Spirit, E-3 Sentry and KC-135 series, in addition to providing logistics support for the Air Launched Cruise Missile, Short Range Attack Missile, Harpoon and Advanced Cruise Missiles. Overall, the center manages and maintains an inventory of more than 13,000 engines, 3,000 missile systems and 42,000 components supporting 9,100 aircraft.

Major units at TAFB include:

- 552 Air Control Wing (ACW)
- 507th Air Refueling Wing (ARW)
- Navy's Strategic Communications wing ONE
- 3rd Combat Communications Group (CCG)
- 38th Engineering Installations Group (EIG)
- 72nd Air Base Wing (ABW)
- Defense Distribution Depot
- Defense Megacenter Oklahoma City

J3.1.4 Population

The Base population profile is as shown in the following table:

Category	Population
Active Duty U.S. Military	7,791
Air National Guard/Air Force Reserve	1,368
Appropriated Fund Civilians (including Reserve technicians)	12,765
Non-appropriated Fund Civilians	2,271
Total Employees	**24,195**
On/Off Base Dependents	18,237

J3.1.5 Housing

Military Family Housing consists of 730 dwelling units located in four neighborhood areas; Twining Fields, Vandenberg Hills, McNarney Manor, and Mitchell Heights. Units are a combination of multiplex (2-8 units per structure) and single family units.

Currently, many of the units are projected to be renovated, many are to be demolished (flood zone siting issues), and additional units will be constructed. All of this work is expected to be done in concert with, or as part of, an ongoing Housing Privatization (HP) initiative. The total number of units currently supported by the Housing Requirement Market Analysis and included as the total HP requirement will be 858 units. Because of the anticipated widespread changes to the housing layout, all military family housing utilities will be included in the HP package and excluded from this UP package.

J3.1.6 Geographically Separated Units

Other geographically separated units (GSUs) are summarized below:

38TH ENGINEERING INSTALLATION GROUP (EIG)

The 38th EIG has worldwide responsibility for engineering and installation of all AF electronic and communications facilities. This GSU is situated on approximately 120 acres located about ½ mile east of the Douglas Avenue (Tinker's eastern border) and south of SE 59th Street.

COMPREHENSIVE HANDS-ON TRAINING (CHOT) SITE

This site is a remote training site for the 3rd Combat Communications Group on a 14-acre plot located a few hundred feet east of the EIG and also south of SE 59th Street.

GLENWOOD

As mentioned earlier, Glenwood is a leased 343-acre parcel situated a few hundred feet north of Tinker AFB. This property (formerly an off-base residential area) was purchased in 1985 by the County of Oklahoma. Residences were demolished and the parcel was leased for one dollar to Tinker AFB for a period of 50 years. This former residential area was in

Accident Potential Zone One (APZ-1) of the main runway (north end) and presented a serious encroachment problem. Oklahoma County officials took this action to resolve this encroachment problem, and to solidify the future viability of Tinker AFB. Because Glenwood is part of APZ-1, usage is limited to periodic troop bivouac activities and there will never be permanent facility development there.

J3.2 Water Distribution System Description

J3.2.1 Water Distribution System Fixed Equipment Inventory

The Tinker AFB water distribution system consists of all appurtenances physically connected to on-base wells, pumping stations, water treatment components and (for off-base sources) the distribution system from the point in which the distribution system enters the Installation and Government ownership currently starts to the point of demarcation, defined by the Right of Way. The system may include, but is not limited to wells, pumps, water treatment components, pipelines, valves, fire hydrants, storage facilities, exterior backflow devices, pumps, 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 with a general understanding of the size and configuration of the distribution system. The Government makes no representation that the inventory is accurate. The Contractor's proposal shall be based 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 charge adjustments based on the accuracy of the following description and inventory.

All water rights (pumping or purchased) will remain with the Government.

Specifically excluded from the water distribution system privatization package:

- Non-potable water fire protection system, including deluge tanks, pipe, pumps, etc.
- Irrigation systems.
- Military Family Housing water distribution system components (included in the separate ongoing Housing Privatization initiative).
- Abandoned water Well No. 9.
- Housing Fluoride Facility 8000.

J3.2.1.1 Description

MAIN BASE

Tinker AFB receives water from two sources: on-Base wells and off-Base supply from the Oklahoma City Water Department.

The Garber-Wellington formation is the primary source of water for the on-Base wells at Tinker AFB while the majority of the City water service is supplied from Stanley Draper Reservoir. Water quality is generally good with minimal treatment required.

Twenty-three wells with finished depth ranging from 400 to 700 feet provide the primary water supply for potable water and fire protection. None of the wells have dedicated emergency generators. All of the wells are located on Base property with the exception of Well 8, which is located about ¼ mile north of the Base in the median of Midwest Boulevard along with an abandoned well (No. 9 – not included in the total number of wells). Of the 23 water wells, 16 were installed between 1941 and 1945 during original Base construction. The remaining seven wells were installed in 1954, 1958, 1990, and four in 1994. During well upgrades over the past seven years, existing motors and pumps were replaced by submersible pumps ranging from 40 to 75 horsepower (hp) on 14 of the wells. One well (No. 3) is awaiting Oklahoma County Water Resources Board clearance to restart production which is expected to occur in the spring of 2004. All wells are metered and located inside dedicated structures that are primarily constructed of brick or concrete. Most well house structures are located above ground with the exception of Nos. 1, 2, 3, 4 and 5 which are located in below ground concrete structures. The three wells (Nos. 24, 25, and 26) located along Douglas Boulevard (outside the Base perimeter fence but still on Base property) also have dedicated fenced enclosures. None of the wells are known to have a cathodic protection system.

Wells yield 205-250 gallons per minute (gpm). Running at about 75 percent of their rated capacity, the wells in total (including the well expected to resume pumping in 2004) can supply approximately 6.5 million gallons per day (MGD). The table below summarizes the wells currently owned by Tinker AFB:

Well No.	Facility No.	Pump Type	Motor Size (hp)	Pump Depth (ft.)	Column Size (in.)	Casing Size
1	604	Unknown-Submersible	60	650	Unknown	10 ¾
2	665	27 Stage	60	650	5	10 ¾
3	764	27 Stage	60	650	None	10 ¾
4	900	27 Stage	60	590	5	10 ¾
5	901	26 Stage	60	590	5	10 ¾
7	1012	10 Stage-Submersible	75	700	4	10 ¾
8	36	18 Stage-Submersible	75	520	4	10 ¾
11	3209	Unknown	60	650	Unknown	10 ¾
12	3211	18 Stage	60	590	5	10 ¾
13	3213	26 Stage	60	590	5	10 ¾
20	2127	20 Stage	60	500	5	10 ¾
21	2119	26 Stage	60	630	5	10 ¾
22	2120	18 Stage-Submersible	75	550	4	10 ¾
23	2109	8 Stage-Submersible	50	440	4	10 ¾
24	3801	10 Stage-Submersible	40	500	4	10 ¾
25	3802	8 Stage-Submersible	40	380	4	10 ¾
26	3803	10 Stage-Submersible	40	442	4	10 ¾

Well No.	Facility No.	Pump Type	Motor Size (hp)	Pump Depth (ft.)	Column Size (in.)	Casing Size
27	4044	10 Stage-Submersible	75	706	4	10 ¾
29	849	18 Stage-Submersible	75	500	5	10 ¾
30	56601	18 Stage-Submersible	75	650	4	10 ¾
31	4519	12 Stage-Submersible	50	610	4	10 ¾
32	50414	8 Stage-Submersible	75	605	4	10 ¾
33	53902	8 Stage-Submersible	75	570	4	10 ¾

Secondary water sourcing is provided by the Oklahoma City Water Department at two metered connection points. These tie-ins have a maximum delivery rate of 6,400 gpm when 80 pounds per square inch gauge (psig) pressure can be maintained. The connection point along Douglas Boulevard (Area C), near Gate 23, consists of two 8-inch lines and is used to supplement water requirements in Area C; approximately 3 MGD can be received through this connection point. The second connection point (South Forty) is located near the intersection of S.E. 59th Street and Hercules Road. This connection consists of two 12-inch lines feeding Booster Station 1106. This connection is normally closed and is for back-up supply. Usage is limited to 2 MGD.

Water treatment consists of chlorination and fluoridation. Wells 7, 11, 12, 13, 20, 21, 22, 23, 24, 25, 26, 17, 29, 30, 31, 32, and 33 have chlorination equipment at the well site. Wells 1, 2, 3, 4 and 5 do not have chlorinators but feed to a central chlorination station (Facility 774). Water from Well 8 is chlorinated at a stand-alone chlorination station (Facility 35) prior to entering the distribution system. In addition to the chlorine treatment at the wells, there are two additional treatment facilities (Facilities 6620 and 8000) that add fluoride to the water supplied to the family housing and dormitory areas. Fluoride Facility 8000 located in the family housing area will be part of the Housing Privatization package and is not included in this UP package. Water purchased from the City of Oklahoma City is chlorinated and fluoridated before delivery.

The water distribution system is divided into two pressure zones. The higher-pressure zone is the southwest area of the Base, south of Taxiway B and east of the north-south runway. The two pressure zones can be interconnected, but are isolated by normally closed valves located near Well 7. The higher pressure is necessary because the southern area of the Base has a higher elevation than the northern and eastern areas of the Base. The distribution pressure in both zones is approximately 75 psig.

On-site domestic water storage is provided by five elevated steel tanks. Each tank contains cathodic protection to enhance corrosion resistance. The cathodic protection systems are impressed current type, and regularly maintained. Four of the water storage tanks are 500,000-gallon tanks; the fifth and newest tank (3901 constructed in 1995) holds 1,000,000 gallons. It is located in the lower pressure zone, north of Building 3001 near the northeast corner of the Base. The tank has separate inlet and outlet piping. Two of the tanks, 406 and 407, were constructed in 1942, and are located near the main gate entrance along Interstate 40 in the lower pressure zone. The tanks were last upgraded in 1996. The upgrade included repainting, replacement of the tank feed piping and valves, and modification of the cathodic

protection system. The tanks do not have separate inlet and outlet piping, and the water level is remotely monitored. When the pressure at the base of the trunk is 50 psig or lower, the well pumps are started manually. Tank 3304 was installed in 1955, just south of Building 3001, in the lower pressure zone. The tank was last upgraded in 1997. The upgrade consisted of painting the inside of the tank, and replacing the feed piping and valves. The tank does not have separate inlet and outlet piping. In 1990, Tank 850 was constructed near the south side of the Base, near the Navy facility in the upper pressure zone. The tank has separate inlet and outlet piping.

Two booster pump stations, 919 and 32101, are located near Facilities 101 and 2101. Station 919 is capable of 600 gpm with a 75 hp motor. Station 32101 consists of one 450 gpm, 20 hp pump and a 1500 gpm, 75 hp pump. Station 32101 pumps water from the Main Base water line into the distribution system in the EIG GSU. Station 1106 consists of two 600 gpm, 20 hp pumps to send water from the City of Oklahoma City water line to the elevated storage tanks in the Main Base area. This station is used sparingly.

The average depth of the water distribution piping is approximately three feet. The distribution system has approximately 25 dead-end lines that require periodic flushing.

The area on the north side of the airfield area is called Area A. The pipe in the area consists of cast iron as well as some asbestos cement. Generally installed around 1943, is thought to be in poor condition and there have been numerous pipe failures. A small percent of the pipe has been replaced with PVC pipe. A valve replacement project occurred replacing approximately 40 valves with AWWA-type gate valves.

The area east of the north-south runway on the Base proper includes Areas B and C. The pipe in the areas is asbestos cement pipe that was installed in 1943. The pipe is thought to be in poor condition and averages five to seven pipe failures annually. There have been no recent major pipe replacements. Approximately 80 of the valves were replaced (AWWA-type gate valves) as part of a valve replacement project. A special feature in Areas C is Building 3001, the largest aircraft maintenance facility in the world. Numerous overhead domestic water lines up to 10 inches in diameter run through this building and feed other buildings on the water distribution network. These mains are included in this UP package. However, branch lines off these large interior mains are excluded from this UP package and will remain AF property.

The EIG GSU (Area D) is approximately ½ mile east of the Main Base and was constructed in 1951. The main distribution piping was replaced in 1995 with ductile iron and is believed to be in good condition. Since installation of the new piping, there have been no pipe failures and no pipe replacements.

Area E includes the housing and community facilities along the western and northwestern sides of the Base. Housing systems were built during the late 1950s, early 1970s, and mid 1980s. Since housing utilities are excluded from this package, they will not be discussed any farther. Area E also includes community facilities (hospital, bowling area, chapel, craft center, theatre, gymnasium, clubs, convention center, dining facility, and multiple dormitories). Installation dates of the water distribution system components range from the 1940s onward. Condition of the system in this area is similarly variable.

The South 40 Area, on the Base western and southwestern sides is sandwiched between the airfield and the housing areas. Since this area had the only available space for significant development over the last 20 years, there is a great range in the age and type of construction of the water distribution lines. Some of the facilities, constructed in 1940s, continue to use the original materials common during that time frame; asbestos cement pipe was the favored material. The AWAC alert complex, constructed in the mid 1980s and the Navy Area constructed in the early 1990s have used more modern materials, mostly PVC.

The Airfield Area has a very small quantity of potable water system components.

Fire protection is supplied by the domestic water system in many areas of the Installation. In addition, dedicated fire water systems are located in several areas of the Installation and are specifically excluded from the water distribution system. Included in these excluded dedicated fire protection systems are Pumping Stations 3202, 2119, 2123, 810, 1020, 1032, 1083, 510, 469, 61289, 1130, 241 and 11. Also considered to be dedicated and excluded fire system components are Buildings/Tanks 1032/1031, 289, 241/243, 3202/3203, 2119 and 2123/2120, 3234 and 2118.

Generally, tracer wire or marker tape has not been effectively installed with non-metallic pipe during initial installation or replacement projects.

Tinker AFB has no Supervisory Control and Data Acquisition (SCADA) system or Energy Monitoring Control System (EMCS) to be included in the water distribution system privatization package.

GSUs

EIG: Receives potable from an AF-owned pipeline extending from the Tinker east side water distribution network. This pipeline parallels SE 59th street traversing non-DoD property for approximately ½ mile. The AF has been granted an easement by the City of Oklahoma City for this connecting pipeline.

CHOT Site: There are no potable water components on this site included in the UP package.

Glenwood: The limited amount of potable water used in Glenwood is from a metered connection to the City of Midwest City. No potable water components in the Glenwood area are included in this package.

J3.2.1.2 Inventory

Table 1 lists major components of the Tinker AFB water distribution system included in the sale.

TABLE 1
Fixed Inventory
Water Distribution System – Tinker AFB

Component	Size	Unit	Quantity	Approximate Year of Construction
MAIN BASE				
Pipe				
Cast Iron	<2″	LF	8,024	1943

Component	Size	Unit	Quantity	Approximate Year of Construction
Cast Iron	2″	LF	16,000	1943
Cast Iron	2 ½″	LF	9,680	1943
Cast Iron	3″	LF	2,650	1943
Cast Iron	4″	LF	1,020	1943
Cast Iron	6″	LF	32,000	1943
Cast Iron	6″	LF	5,020	1993
Cast Iron	8″	LF	54,720	1943
Cast Iron	10″	LF	18,030	1943
Cast Iron	10″	LF	3,510	1993
Cast Iron	12″	LF	31,440	1943
Asbestos Cement	3″	LF	5,030	1943
Asbestos Cement	4″	LF	2,420	1943
Asbestos Cement	6″	LF	42,860	1943
Asbestos Cement	8″	LF	55,180	1943
Asbestos Cement	8″	LF	2,820	1971
Asbestos Cement	10″	LF	62,850	1943
Asbestos Cement	12″	LF	64,000	1943
PVC	<2″	LF	630	1985
PVC	2″	LF	1,396	1985
PVC	3″	LF	1,080	1985
PVC	4″	LF	2,550	1985
PVC	4″	LF	1,082	2001
PVC	6″	LF	1,638	2001
PVC	8″	LF	10,515	1985
PVC	10′′	LF	2,180	1985
Service Connections and Valves				
Service Connections		EA	286	1943
Service Connections		EA	10	1985
Service Connections		EA	14	1993
Service Connections		EA	10	2001
Gate Valves (Mains)	<2″	EA	20	1943
Gate Valves (Mains)	<2″	EA	3	1985
Gate Valves (Mains)	2″	EA	48	1943
Gate Valves (Mains)	2″	EA	7	1985
Gate Valves (Mains)	2 ½″	EA	14	1943
Gate Valves (Mains)	3″	EA	14	1943
Gate Valves (Mains)	3″	EA	6	1985
Gate Valves (Mains)	3″	EA	2	1993
Gate Valves (Mains)	4″	EA	12	1943
Gate Valves (Mains)	4″	EA	13	1985
Gate Valves (Mains)	4″	EA	1	1993
Gate Valves (Mains)	4″	EA	1	2001
Gate Valves (Mains)	6″	EA	173	1943

Component	Size	Unit	Quantity	Approximate Year of Construction
Gate Valves (Mains)	6″	EA	5	1985
Gate Valves (Mains)	6″	EA	40	1989
Gate Valves (Mains)	6″	EA	6	1993
Gate Valves (Mains)	6″	EA	4	2001
Gate Valves (Mains)	8″	EA	220	1943
Gate Valves (Mains)	8″	EA	22	1985
Gate Valves (Mains)	8″	EA	30	1989
Gate Valves (Mains)	8″	EA	16	1993
Gate Valves (Mains)	10″	EA	91	1943
Gate Valves (Mains)	10″	EA	6	1985
Gate Valves (Mains)	10″	EA	23	1989
Gate Valves (Mains)	12″	EA	112	1943
Gate Valves (Mains)	12″	EA	27	1989
Post Indicator Valves		EA	3	1943
Fire Hydrants				
Fire Hydrants		EA	412	1943
Fire Hydrants		EA	8	1985
Fire Hydrants		EA	15	1993
Water Storage Tanks				
Elevated - #406	500,000 gal	EA	1	1943/1997*
Elevated - #407	500,000 gal	EA	1	1943/1997*
Elevated - #850	500,000 gal	EA	1	1990
Elevated - #3304	500,000 gal	EA	1	1955/1997*
Elevated - #3901	1,000,000 gal	EA	1	1995
Cathodic Protection Components				
Tank #406				
Magnesium Anodes	9#	EA	12	1997
Cable	#2	LF	500	1997
Rectifier	28V/10A	EA	1	1997
Reference Cell		EA	2	1997
Test Station		EA	4	1997
Tank #407				
Magnesium Anodes	9#	EA	12	1997
Cable	#2	LF	500	1997
Rectifier	28V/10A	EA	1	1997
Reference Cell		EA	2	1997
Test Station		EA	4	1997
Tank #850				
Magnesium Anodes	9#	EA	12	1990
Cable	#2	LF	500	1990
Rectifier	28V/10A	EA	1	1990
Reference Cell		EA	2	1990
Test Station		EA	4	1990

Component	Size	Unit	Quantity	Approximate Year of Construction
Tank #3304				
Magnesium Anodes	9#	EA	12	1997
Cable	#2	LF	500	1997
Rectifier	28V/10A	EA	1	1997
Reference Cell		EA	1	1997
Test Station		EA	4	1997
Tank #3901				
Magnesium Anodes	9#	EA	12	1995
Cable	#2	LF	500	1995
Rectifier	28V/10A	EA	1	1995
Reference Cell		EA	1	1995
Test Station		EA	4	1995
Wells and Components				
Well #1				
Pump and Column		HP	60	1997
Drilling, Screening, and Casing		LF	650	1943
Surface Seal Well #1 Conc. Filled		LS	1	1943
Develop Well #1		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Meter		EA	1	1997
Well #2				
Pump and Column		HP	60	1989
Drilling, Screening, and Casing		LF	650	1943
Surface Seal Well #2 Conc. Filled		LS	1	1943
Develop Well #2		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1989
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1989
Service Panel for Electrical Lights & Interior Heater		EA	1	1989

Component	Size	Unit	Quantity	Approximate Year of Construction
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1989
Commercial Heater (Interior)	3,000 W	EA	1	1989
Meter		EA	1	1989
Well #3				
Pump and Column		HP	60	1989
Drilling, Screening, and Casing		LF	590	1943
Surface Seal Well, #3 Conc. Filled		LS	1	1943
Develop Well #3		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1989
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1989
Service Panel for Electrical Lights & Interior Heater		EA	1	1989
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1989
Commercial Heater (Interior)	3,000 W	EA	1	1989
Meter		EA	1	1989
Well #4				
Pump and Column		HP	60	1989
Drilling, Screening, and Casing		LF	590	1943
Surface Seal Well, #4 Conc. Filled		LS	1	1943
Develop Well #4		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1989
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1989
Service Panel for Electrical Lights & Interior Heater		EA	1	1989
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1989
Commercial Heater (Interior)	3,000 W	EA	1	1989
Meter		EA	1	1989
Well #5				
Pump and Column		HP	60	1989
Drilling, Screening, and Casing		LF	590	1943
Surface Seal Well, #5 Conc. Filled		LS	1	1943
Develop Well #5		LS	1	1943

Component	Size	Unit	Quantity	Approximate Year of Construction
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1989
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1989
Service Panel for Electrical Lights & Interior Heater		EA	1	1989
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1989
Commercial Heater (Interior)	3,000 W	EA	1	1989
Meter		EA	1	1989
Well #7				
Pump and Column		HP	75	1989
Drilling, Screening, and Casing		LF	700	1943
Surface Seal Well #7 Conc. Filled		LS	1	1943
Develop Well #7		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1989
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1989
Service Panel for Electrical Lights & Interior Heater		EA	1	1989
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1989
Commercial Heater (Interior)	3,000 W	EA	1	1989
Chlorination Equipment		EA	1	1989
Meter		EA	1	1989
Well #8				
Pump and Column		HP	75	1989
Drilling, Screening, and Casing		LF	520	1943
Surface Seal Well #8 Conc. Filled		LS	1	1943
Develop Well #8		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1989
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1989
Service Panel for Electrical Lights & Interior Heater		EA	1	1989

Component	Size	Unit	Quantity	Approximate Year of Construction
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1989
Commercial Heater (Interior)	3,000 W	EA	1	1989
Chlorination Equipment		EA	1	1989
Meter		EA	1	1989
Well #11				
Pump and Column		HP	60	1997
Drilling, Screening, and Casing		LF	650	1943
Surface Seal Well, #11 Conc. Filled		LS	1	1943
Develop Well #11		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #12				
Pump and Column		HP	60	1997
Drilling, Screening, and Casing		LF	590	1943
Surface Seal Well, #12 Conc. Filled		LS	1	1943
Develop Well #12		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #13				
Pump and Column		HP	60	1997

Component	Size	Unit	Quantity	Approximate Year of Construction
Drilling, Screening, and Casing		LF	590	1943
Surface Seal Well, #13 Conc. Filled		LS	1	1943
Develop Well #13		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #20				
Pump and Column		HP	60	1997
Drilling, Screening, and Casing		LF	500	1943
Surface Seal Well, #20 Conc. Filled		LS	1	1943
Develop Well #20		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #21				
Pump and Column		HP	60	1997
Drilling, Screening, and Casing		LF	630	1943
Surface Seal Well, #21 Conc. Filled		LS	1	1943
Develop Well #21		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943

Component	Size	Unit	Quantity	Approximate Year of Construction
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #22				
Pump and Column		HP	75	1997
Drilling, Screening, and Casing		LF	550	1943
Surface Seal Well, #22 Conc. Filled		LS	1	1943
Develop Well #22		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #23				
Pump and Column		HP	50	1997
Drilling, Screening, and Casing		LF	440	1943
Surface Seal Well, #23 Conc. Filled		LS	1	1943
Develop Well #23		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997

Component	Size	Unit	Quantity	Approximate Year of Construction
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #24				
Pump and Column		HP	40	1997
Drilling, Screening, and Casing		LF	500	1943
Surface Seal Well, #24 Conc. Filled		LS	1	1943
Develop Well #24		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #25				
Pump and Column		HP	40	1997
Drilling, Screening, and Casing		LF	380	1943
Surface Seal Well, #25 Conc. Filled		LS	1	1943
Develop Well #25		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1943
Electric Connections		EA	1	1943
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #26				
Pump and Column		HP	60	1997
Drilling, Screening, and Casing		LF	442	1954
Surface Seal Well, #26 Conc. Filled		LS	1	1943
Develop Well #26		LS	1	1943

Component	Size	Unit	Quantity	Approximate Year of Construction
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1997
Building		SF	150	1954
Electric Connections		EA	1	1954
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997
Well #29				
Pump and Column		HP	75	1994
Drilling, Screening, and Casing		LF	500	1994
Surface Seal Well, #29 Conc. Filled		LS	1	1994
Develop Well #29		LS	1	1994
Pump Test		LS	1	1994
Sterilization		LS	1	1994
Pump Controls		EA	1	1994
Building		SF	150	1994
Electric Connections		EA	1	1994
Motor Starter and Controls		EA	1	1994
Service Panel for Electrical Lights & Interior Heater		EA	1	1994
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1994
Commercial Heater (Interior)	3,000 W	EA	1	1994
Chlorination Equipment		EA	1	1994
Meter		EA	1	1994
Well #30				
Pump and Column		HP	75	1994
Drilling, Screening, and Casing		LF	650	1994
Surface Seal Well, #30 Conc. Filled		LS	1	1994
Develop Well #30		LS	1	1994
Pump Test		LS	1	1994
Sterilization		LS	1	1994
Pump Controls		EA	1	1994
Building		SF	150	1994
Electric Connections		EA	1	1994
Motor Starter and Controls		EA	1	1994
Service Panel for Electrical Lights		EA	1	1994

Component	Size	Unit	Quantity	Approximate Year of Construction
& Interior Heater				
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1994
Commercial Heater (Interior)	3,000 W	EA	1	1994
Chlorination Equipment		EA	1	1994
Meter		EA	1	1994
Well #31				
Pump and Column		HP	50	1994
Drilling, Screening, and Casing		LF	610	1994
Surface Seal Well, #31 Conc. Filled		LS	1	1994
Develop Well #31		LS	1	1994
Pump Test		LS	1	1994
Sterilization		LS	1	1994
Pump Controls		EA	1	1994
Building		SF	150	1994
Electric Connections		EA	1	1994
Motor Starter and Controls		EA	1	1994
Service Panel for Electrical Lights & Interior Heater		EA	1	1994
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1994
Commercial Heater (Interior)	3,000 W	EA	1	1994
Chlorination Equipment		EA	1	1994
Meter		EA	1	1994
Well #32				
Pump and Column		HP	75	1990
Drilling, Screening, and Casing		LF	650	1990
Surface Seal Well, #32 Conc. Filled		LS	1	1990
Develop Well #32		LS	1	1990
Pump Test		LS	1	1990
Sterilization		LS	1	1990
Pump Controls		EA	1	1990
Building		SF	150	1990
Electric Connections		EA	1	1990
Motor Starter and Controls		EA	1	1990
Service Panel for Electrical Lights & Interior Heater		EA	1	1990
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1990
Commercial Heater (Interior)	3,000 W	EA	1	1990
Chlorination Equipment		EA	1	1990
Meter		EA	1	1990

Component	Size	Unit	Quantity	Approximate Year of Construction
Well #33				
Pump and Column		HP	75	1994
Drilling, Screening, and Casing		LF	570	1994
Surface Seal Well, #33 Conc. Filled		LS	1	1994
Develop Well #33		LS	1	1994
Pump Test		LS	1	1994
Sterilization		LS	1	1994
Pump Controls		EA	1	1994
Building		SF	150	1994
Electric Connections		EA	1	1994
Motor Starter and Controls		EA	1	1994
Service Panel for Electrical Lights & Interior Heater		EA	1	1994
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1994
Commercial Heater (Interior)	3,000 W	EA	1	1994
Chlorination Equipment		EA	1	1994
Meter		EA	1	1994
Booster Pump Stations				
Station 919				
Pump, Piping, & Controls		HP	75	1969
Station 1106				
Pump, Piping, & Controls		HP	20	1969
Pump, Piping, & Controls		HP	20	1969
Station 32101				
Pump, Piping, & Controls		HP	20	1969
Pump, Piping, & Controls		HP	75	1969
Additional Inventory				
Chlorination Station		EA	2	1956
Fluoridation Station		EA	1	1994
Meters		EA	59	
INSIDE BLDG. 3001				
Cast Iron Pipe	<2″	LF	480	1943
Cast Iron Pipe	2″	LF	3,486	1943
Cast Iron Pipe	3″	LF	1,357	1943
Cast Iron Pipe	4″	LF	2,630	1943
Cast Iron Pipe	6″	LF	3,283	1943
Cast Iron Pipe	8″	LF	2,875	1943
Cast Iron Pipe	10″	LF	332	1943
Gate Valves (Mains)	2″	EA	15	1943
Gate Valves (Mains)	3″	EA	13	1943
Gate Valves (Mains)	4″	EA	17	1943
Gate Valves (Mains)	6″	EA	18	1943

Component	Size	Unit	Quantity	Approximate Year of Construction
Gate Valves (Mains)	8″	EA	10	1943
EIG AREA				
Ductile Iron Pipe	<2″	LF	420	1995
Ductile Iron Pipe	2″	LF	720	1995
Ductile Iron Pipe	3″	LF	580	1995
Ductile Iron Pipe	4″	LF	730	1995
Ductile Iron Pipe	6″	LF	2,095	1995
Ductile Iron Pipe	8″	LF	1,809	1995
Ductile Iron Pipe	12″	LF	4,210	1995
Service Connections		EA	31	1995
Gate Valves (Mains)	<2″	EA	2	1995
Gate Valves (Mains)	2″	EA	9	1995
Gate Valves (Mains)	3″	EA	3	1995
Gate Valves (Mains)	4″	EA	4	1995
Gate Valves (Mains)	6″	EA	20	1995
Gate Valves (Mains)	8″	EA	7	1995
Gate Valves (Mains)	12″	EA	12	1995
Fire Hydrants		EA	19	1974
Well #27				
Pump and Column		HP	75	1997
Drilling, Screening, and Casing		LF	706	1958
Surface Seal Well, #27 Conc. Filled		LS	1	1958
Develop Well #27		LS	1	1958
Pump Test		LS	1	1958
Sterilization		LS	1	1958
Pump Controls		EA	1	1997
Building		SF	150	1958
Electric Connections		EA	1	1958
Motor Starter and Controls		EA	1	1997
Service Panel for Electrical Lights & Interior Heater		EA	1	1997
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1997
Commercial Heater (Interior)	3,000 W	EA	1	1997
Chlorination Equipment		EA	1	1997
Meter		EA	1	1997

Notes:
*Year/Year = original construction/upgrade

EA = each	HP = horsepower	Conc. = concrete
LF = linear feet	gal = gallons	A = ampere
PVC = polyvinyl chloride	MG = million gallons	V = volt
SF = square footage	W = watts	Bldg. = building
kVA = kilovolt ampere	LS = lump sum	

J3.2.2 Water Distribution System Non-Fixed Equipment and Specialized Tools

Tables 2 and **3** list ancillary equipment (spare parts) and specialized vehicles and tools included in the purchase.

TABLE 2
Spare Parts
Water Distribution System - Tinker AFB

Item	Quantity	Location	Description
Valves, Flanges, Couplers & Fittings	Quantity Varies	Utility Shop	Varies sizes and types
Pipe	Quantity Varies	Utility Shop	Various sizes (1″ – 6″)

TABLE 3
Specialized Vehicles and Tools
Water Distribution System - Tinker AFB

Description	Size	Location	Description	Maker
None.				

J3.2.3 Water Distribution 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
Water Distribution System - Tinker AFB

Quantity	Item	Description	Remarks
1	Utility Maps	Base Water Lines, 2004, Scale 1″ = 100′	Sheets 1 - 54
1	Utility Map	Cathodic Protection Systems	
1	Report	Annual Cathodic Report, 2002	
1	Planning Document	General Plan	One Volume
1	Planning Document	Comprehensive Plan	Multiple Volumes

J3.3 Specific Service Requirements

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

- 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. The Contractor will provide not less than 2 and not more than 5 working days notice (emergencies being excepted) of any needed excavations to 72nd Civil Engineers 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 applicable utility owner must mark their utilities as requested within 48 hours of receipt of request for non-emergency work.
- IAW Condition C of Attachment 1 to the ROW, the Contractor shall follow the Base digging permit process. The Contractor shall obtain all necessary authorizations, permits and line locates prior to performing any excavations on Base.
- The Contractor shall support the Base digging permit process by routinely accepting and promptly processing digging permit requests which may impact on the integrity of the Contractor's utility system and/or the safety of the requestors. The Contractor shall be a participant of the Base digging permit process and shall attend any meetings called in support of the process. Contractor shall be responsible to locate and mark their utilities in the affected areas. The digging permit process involves weekly attendance at the scheduled meeting and subsequent appointments for location and marking of utilities throughout the week.
- Because of the critical nature of many Tinker AFB mission requirements, response to water problems must be immediate. The Contractor will respond to emergency wastewater problem within 20 minutes of notification during duty hours and within one hour during non-duty hours.
- The Contractor's representative that responds to emergency service requests shall be knowledgeable of the utility system and the Contractor's Service Interruption/Contingency Plan. The representative shall be able to assess damages and estimate the time it will take to make temporary or full-service repairs. In accordance with Paragraph H.6, Rights of the Government to Perform Function with Its Own Personnel, the Government reserves the right to substitute or supplement the Contractor's efforts during emergency situations where the Contractor's failure or inability to perform is beyond the Contractor's control and without the Contractor's fault or negligence. In this situation, the Contractor would not be held responsible for costs incurred by the Government. However, the Contractor could be held financially responsible if the Government substitutes or supplements the Contractor's efforts during emergency situations and the Contractor's failure or inability to perform was the result of the fault or negligence of the Contractor.
- The Contractor shall provide daily meter readings for all water wells. All other meter readings shall be provided monthly. Daily and monthly meter readings shall be included in the monthly Meter Reading Report (Paragraph J3.6).
- The Contractor shall keep meter books with monthly (or daily as applicable) consumption and demand (if applicable) for each meter reading. Meter books shall also include the building address or facility number, meter number, previous month (or day as applicable) readings, current month (or day as applicable) readings, multiplier for

each meter, total monthly consumption by meter, points of contact for meter questions, and procedures for converting meter readings into consumption (including multipliers).

- Contractor shall be responsible for all maintenance, calibration and yearly testing of all water meters in accordance with AWWA standards.
- The Contractor shall own, operate and maintain obstruction lighting on water towers.
- The Government shall retain ownership of airfield beacon lighting, antennas, sensors (SCADA), and other communications, navigational aid, radar, emergency warning, and associated ancillary equipment on water towers. The Government will maintain the beacon lighting, antennas, and other communications, navigational aid, radar, emergency warning, and associated ancillary equipment. IAW the Right of Way, the Contractor shall allow the continued fixture of these systems to the towers as well as unrestricted Government access to this equipment.
- The Government shall retain ownership of the sensors, communications, and other equipment associated with the SCADA system. The SCADA system may be used by the Government to monitor water facilities. The Government will maintain the sensors, antennas, and other communications, and associated ancillary equipment. Contractor may purchase, install, operate, and maintain a SCADA system.
- The Contractor shall operate and maintain the cathodic protection system for each water storage tank. Minimum testing and maintenance standards for cathodic protection shall be according to National Association of Corrosion Engineers (NACE) standards. The Contractor shall test each water storage tanks' cathodic protection system monthly. Contractor shall make any repairs or adjustments necessary to ensure readings within acceptable limits. This will be performed by a NACE certified technician.
- The Contractor shall prepare an annual report documenting the condition of the cathodic protection system in accordance with NACE standards for each water storage tank. A copy of the report shall be provided to the Contracting Officer, or other representative(s) as designated by the Contracting Officer. Annual reports shall be provided by the 30th day of each year for the previous year.
- The Contractor shall be responsible for all maintenance on water towers to include exterior and interior inspection and painting in accordance with AWWA standards. The Contractor shall coordinate with the Base Civil Engineer before painting any water storage tanks. Exterior paint shall be compatible with the Base color scheme.
- IAW Paragraph C.5.1.3, and in compliance with Base architectural standards, new and renewal distribution piping shall normally be installed using the most economical trenching method unless otherwise prohibited by the Government. Excavation of paved surfaces is prohibited without consultation and approval from the Base Civil Engineer.
- Upon reasonable request and with reasonable notice from the Base Civil Engineer, the Contractor shall provide escorted tours to provide instruction and demonstration of the water distribution system operations, maintenance and construction. The water distribution system includes valves, gauges, pipes, wells, storage tanks, and other water distribution system devices, and the Contractor's shop(s) and storage areas.

- The Contractor shall maintain a minimum main distribution pressure of 40 psig for fire protection purposes. Prior to beginning any work, the Contractor shall coordinate with the Civil Engineer Service Call Desk and the Fire Department for any change to the water distribution system that may affect fire protection.
- The Contractor shall coordinate replacement or changes to fire hydrants with the Base Fire Department. The Contractor shall use flush mount fire hydrants along runways, taxiways, ramps, aircraft parking aprons, and aircraft hangers, as specified in the Base design standards. Above ground fire hydrants shall be painted to match the Base color scheme. Isolation valves shall be installed with all new and replacement fire hydrants.
- The Contractor shall perform flow testing and maintenance of fire hydrants and water lines IAW National Fire Protection Association standards. Contractor shall also perform flow testing on as required basis for design purposes, not to exceed an average of one per month.
- The Contractor shall provide water treatment as a part of the distribution service. Current treatment includes chlorination, fluoridation, and lime and phosphate addition. Treatment shall be IAW applicable federal, state, and local rules and regulations. The Contractor shall provide the Contracting Officer with a copy of any and all testing information and reports related to the water distribution system that are submitted to any agency. The Contractor shall provide copies to the Government concurrently with submittal to any agency.
- The Contractor shall coordinate with Tinker AFB prior to making any changes to the water treatment process.
- IAW Paragraph C.9, Coordination of Work, the Contractor shall coordinate planned outages using the Civil Engineer Outage Form.
- In addition to Section 8 of the ROW, the utility contractor (grantee) shall repair at no cost to the Government any utilities improperly marked by the contractor and subsequently damaged as a result of the incorrect marking by other contractors or Government organizations working in the area. Property damaged by the contractor in the conduct of his business shall be corrected in accordance with ROW section 8.
- IAW Section 12 of the ROW, the Contractor is responsible for all supporting utilities that may be required to own, operate and maintain the utility system subject to privatization. For example, electricity is needed to power substation lighting. Supporting utilities are defined as the supply of electricity, natural gas, water, or wastewater collection, and any infrastructure or materials necessary to connect to the supply of electricity, natural gas, water, or wastewater collection. The Contractor shall coordinate with the Tinker AFB Civil Engineer and the Contracting Officer for any supporting utilities to be provided by the Government.
- The Contractor shall enter into a Memorandum of Understanding (MOU) with the Base Fire Department for fire protection of all facilities included in the purchase of the utility. The MOU shall be completed during the transition period and a copy provided to the Contracting Officer.
- The Contractor shall abide by Base fire protection requirements. The utility system purchased by the Contractor includes facilities. These facilities may or may not include

fire alarm systems. Where required by federal, state or local regulation, the Contractor shall maintain the fire alarm system for all facilities owned and operated by the Contractor. The Contractor shall permit Fire Department personnel access to their facilities to perform fire inspections and emergency response.

- IAW Paragraph C.9.8, Exercises and Crisis Situations Requiring Utility Support, the Contractor shall provide support as directed by Base Civil Engineer for exercises and crisis situations.
- The Contractor shall ensure that employees understand, implement and enforce Force Protection Condition (FPCON) requirements specified in AFI 10-245. The Contractor is advised that FORCE PROTECTION conditions vary and that these changes may cause delays in access to Tinker AFB. These conditions are outlined in the Tinker AFB FPCON Checklist. This checklist will be available in the technical library. The Contractor will plan accordingly to provide uninterrupted support. Compliance with and staffing in support of FORCE PROTECTION condition changes shall not result in service charge adjustments to the contract.
- IAW Section 8 of the ROW, the Contractor shall maintain existing security mechanisms (i.e., locks, fences) to protect the utility systems. The security mechanisms should prevent tampering and sabotage. Should the Contractor become aware of any suspicious incident, security breach or act of sabotage at or against the utility system, or any of its associated facilities, they will immediately contact the 72nd Security Police Squadron and 72nd Civil Engineer Squadron.
- Due to heightened security concerns on military installations, all Contractor and subcontractor personnel who must enter Tinker AFB to perform this contract must undergo a background check. Background checks will be conducted using the following information: name, drivers license number, social security number, and date of birth. These procedures are considered permanent. Any Contractor or subcontractor employee that does not consent to this background investigation will not be allowed access to Tinker AFB. Any derogatory information resulting from the investigation, or which otherwise becomes known to the contracting officer, may also result in such individuals being prevented from entering the installation. However, nothing in this requirement shall excuse the Contractor from proceeding with any resulting contract as required.
- The Contractor shall ensure their employees, and those of their subcontractors, have the proper credentials allowing them to work in the United States. Employees must have valid Social Security Cards. Non-US Citizens must have current and valid permission from the Bureau of Immigration and Naturalization. Persons found to be undocumented or illegal aliens will be remanded to the proper authorities. The Contractor shall not be entitled to any compensation for delays or expenses associated with complying with the provisions of this requirement. Contractor personnel and their subcontractors must identify themselves as Contractors or subcontractors during meetings, telephone conversations, in electronic messages, or correspondence related to this contract. Contractor occupied facilities on Tinker AFB such as offices, separate rooms, or cubicles must be clearly identified with Contractor-supplied signs, name plates or other identification, showing that these are work areas for Contractor or subcontractor personnel.

- The Contractor shall notify OC-ALC/SEG (Safety Office) and the Contracting Officer, or a designated Government Representative (GR) within one (1) hour of all mishaps or incidents at or exceeding $2,000 (material + labor) in damage to DOD or contractor-owned property. This notification requirement shall also include physiological mishaps/incidents. A written or e-mail copy of this mishap/incident notification shall be sent within three calendar days to the GR, who will forward it to OC-ALC/SEG (Safety Office). For information not available at the time of initial notification, the Contractor shall provide the remaining information not later than 20 calendar days after the mishap, unless extended by the Contracting Officer. Mishap notifications shall contain, as a minimum, the following information:

  (a) Contract, Contract Number, Name and Title of Person(s) Reporting

  (b) Date, Time and exact location of mishap/incident

  (c) Brief Narrative of mishap/incident (Events leading to accident/incident)

  (d) Cause of mishap/incident, if known

  (e) Estimated cost of mishap/incident (material and labor to repair/replace)

  (f) Nomenclature of equipment and personnel involved in mishap/incident

  (g) Corrective actions (taken or proposed)

  (h) Other pertinent information.

- If requested by Government Personnel or designated government representative, the Contractor shall immediately secure the mishap scene/damaged property and impound pertinent maintenance and training records, until released by the OC-ALC Safety Office. Also, the Contractor and their subcontractors shall cooperate fully and assist government personnel until the investigation is finalized and closed out. Safety requirements listed in this package that do not relate to the Contractor's operations or services shall be considered self-deleting as mutually agreed by the Contractor and the Contracting Officer.
- The Contracting Officer is the only individual authorized to incur Government obligations and to make changes to contracts. The Administrative Contracting Officer (ACO) may make certain obligations and changes as provided by the Federal Acquisition Regulation part 42.302 (and supplements) or as may be specifically designated in writing by the Procuring CO. The Contracting Officer's Technical Representative (COTR), if designated, is strictly limited to the authority described in the designation letter executed by the CO. The Installation Commander's duly authorized representative is strictly limited to the tasks described and under no circumstance is authorized to incur additional obligations on behalf of the Government. The Defense Energy Support Center (DESC) is the procuring agent, and after appropriate post-award contract management transition, the Contracting Directorate, Oklahoma City Air Logistics Center, shall assume the procuring and administration contracting authority.
- IAW Condition F of Attachment 1 to the ROW, the Contractor shall be responsible for grounds maintenance (except grass cutting) of all areas within the boundaries of the

ROW in accordance with Base standards. Maintenance problems caused by others (AF or a third party) will not be the Contractor's responsibility.

- IAW ROW, the Contractor shall not deliberately injure or kill protected species of wildlife (i.e., non-domesticated animals) without permission from the Contracting Officer, or other representative(s) as designated by the Contracting Officer.
- IAW Condition J of Attachment 1 to the ROW, the provisions of ROW Sections 15, 17 and 18 also cover sites identified under the Resource Conservation Recovery Act (RCRA) Corrective program.
- The Contractor shall not perform alterations to any building or structure deemed to be eligible or potentially eligible for placement on the National Register of Historic Places until approved by said officer.

J3.4 Current Service Arrangement

Nearly all of Tinker's water is supplied by ground wells; in fiscal year (FY) 2003 it was 95 percent. The peak monthly total consumption figure in FY 2003 was 91,694 kGal during the month of July, while the low month figure was for September at 62,938 kGal. Peak daily demand over the course of FY 2003 was 2,958 kGal/day. From earlier paragraphs, it is clear that Tinker has ample ground water capacity (6.5 MGD) for current needs and has the luxury of being able to purchase up to an additional 5 MGD via the City connections. **It is imperative to understand that all water and pumping rights, including the water allocation from Oklahoma City will remain with the Government.**

J3.5 Secondary Metering

J3.5.1 Existing Secondary Meters

Table 5 reflects a listing of the existing secondary meters that would be transferred to the Contractor. The Contractor shall provide meter readings for these meters IAW Paragraph C.3.3 and J3.6 below.

TABLE 5
Existing Secondary Meters
Water Distribution System - Tinker AFB

Facility No.	Meter No.	Location
5931	W0014	N side in ground
5930	W0016	N side in ground (water on inside glass)
477	W0038	SW corner
830	W0056	SW corner of bldg
830	W0057	SW corner of bldg
820	W0063	SW side in ground vault
820	W0066	SE side in ground vault
825	W0070	SE side of bldg

825	W0071	W side of bldg (underwater)
821	W0075	SE corner in vault
4012	W0081	N of bldg
7037	W0091	NW corner of bldg
*2280	W0092	SE corner in mech room along E wall
*2280	W0093	SE corner in mech room along E wall
*2280	W0094	SE corner in mech room along E wall
*2280	W0095	SE corner in mech room along E wall
*2280	W0096	SE corner in mech room along E wall
*2280	W0097	SE corner in mech room along E wall
*2280	W0098	SE corner in mech room along E wall
*2280	W0099	SE corner in mech room along E wall
*2280	W0100	SE corner in mech room along E wall
*2280	W0101	SE corner in mech room along E wall
*2280	W0102	SE corner in mech room along E wall
2101	W0125	NE side inside along n wall
210	W0150	Inside post G16 north side
4057	W0333	NW corner of bldg
1086	W0338	Submitted for repair, water in glass
11	W0379	SW corner of bldg
6642	W0404	W side 30ft from bldg in ground
963	W0467	W side of bldg
400	W0485	N side in ground
1093	W0515	SW side next to fence
414	W0554	NW of bldg
*420	W0646	NE corner inside mech room
851	W0787	SE corner of bldg
1047	W0795	SE corner of bldg
1017	W0800	S side of bldg
*3904	W0822	W side in mech room
3902	W0864	SE side of bldg
3900	W0901	Secured Area
3900	W0902	Secured Area
*808	W1057	Inside bldg in mech room
1107	W1067	E side of bldg
590	W1077	SE corner of bldg
250	W1136	SE corner of bldg

769	W1138	SE in hole
*61019	W1139	Inside bldg
*61018	W1140	Inside bldg
6601	W1246	W side in fence
*5942	W1248	E side mech room
BK	W1249	SE OF BLDG
4019	W1251	E side of bldg
*472	W1280	W side mech room
5929	W1281	W side in fence
5520	W1500	S.E. of 5520
801	W1501	SW of bldg, outside fence
802	W1502	NW of bldg, outside fence
Golf course	W1503	W side of golf course, next to pond
*Well #1		Main Base
*Well #2		Main Base
*Well #3		Main Base
*Well #4		Main Base
*Well #5		Main Base
*Well #7		N of Base on Midwest Blvd.
*Well #8		Main Base
*Well #11		Main Base
*Well #12		Main Base
*Well #13		Main Base
*Well #20		Main Base
*Well #21		Main Base
*Well #22		Main Base
*Well #23		Main Base
*Well #24		Main Base
*Well #25		Main Base
*Well #26		Main Base
*Well #27		EIG
*Well #28		Main Base
*Well #29		Main Base
*Well #30		Main Base
*Well #31		Main Base
*Well #32		Main Base
*Well #33		Main Base

Notes:
*Located inside Facility.

J3.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 6**. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3.3 and J3.6 below.

TABLE 6
New Secondary Meters
Water Distribution System - Tinker AFB

Meter Location	Meter Description
None	

J3.6 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: 72 ABW/CE
   Address: 7535 5th Street (Bldg 400)
   Tinker AFB, OK 73145-9010
   Phone number: (405) 734-3451

2. **Outage Report:** The Contractor's monthly outage report 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: 72 ABW/CE
   Address: 7535 5th Street (Bldg 400)
   Tinker AFB, OK 73145-9010
   Phone number: (405) 734-3451

3. **Meter Reading Report:** The monthly meter reading report shall show the current and previous month readings for all identified secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. The report will include a summary of water quantities pumped from deep wells and a summary of purchased water from WBCD. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

   Name: 72 ABW/CE

Address: 7535 5th Street (Bldg 400)
Tinker AFB, OK 73145-9010
Phone number: (405) 734-3451

4. **System Efficiency Report:** If required by Paragraph C.3, the Contractor shall submit a system efficiency 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: 72 ABW/CE
Address: 7535 5th Street (Bldg 400)
Tinker AFB, OK 73145-9010
Phone number: (405) 734-3451

J3.7 Water Conservation Projects

Generally, water conservation is a moderately important issue. At certain times during periods of drought when City reservoirs are drawn down, water conservation/rationing becomes a high priority at Tinker AFB. Though the Tinker has sufficient wells to remain independent of Oklahoma City water, in the spirit of cooperation with the surrounding community, when off-Base rationing is implemented, Tinker employs similar rationing measures. Any new owner of the water distribution system must cooperate with the Installation as it continues its water conservation programs.

J3.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Tinker AFB boundaries, the boundaries of Tinker GSUs, and easements/ROWs granted to the AF.

J3.9 Off-Installation Sites

Sites off the main Installation and their respective water systems are described in Paragraph J3.2.1.1. EIG has components included in this privatization package. Glenwood and the CHOT Site have no water distribution components to be privatized.

J3.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 7** provides a listing of service connections and disconnections required upon transfer.

TABLE 7
Service Connections and Disconnections
Water Distribution System - Tinker AFB

Location	Description
Housing Area	As stated earlier, all housing area potable water components are excluded from this package and are included in the ongoing Housing Privatization (HP) initiative. Associated points of

demarcation are described in the ROW documents. Some of these points of demarcation will, by necessity, include a few non-housing facilities in the excluded blocks. However, as the HP initiative evolves with demolition, new construction, etc., these points of demarcation will change. The general trend will be to isolate the housing areas on their own dedicated water systems and perhaps reconnecting non-housing facilities connected to the UP water distribution lines.

J3.11 Government Recognized System Deficiencies

The general condition of the water system is good. Localized problems include:

- Area C has dead-end lines. Lines should be looped or have auto-flush mechanism installed.
- Numerous water lines in Areas A, B, and C are close to 60 years old and should be replaced.
- Additional storage is needed along the west perimeter of the Base.
- There is need for additional elevated storage in Area C (south end) to increase system pressure and provide for planned expansion.

Water projects that have some form of programming action underway are listed in **Table 8;** the latest information on these projects will be available in the technical library. The Government recognizes these improvement projects as representing current deficiencies associated with the Tinker AFB water distribution system. If the utility system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the 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 8
System Deficiencies
Water Distribution System - Tinker AFB

Project No.	Project Description	Program Amount (000)
950124	Revitalize distribution Lines	$434
990423	Repair Water Valves Base Wide	$75
990110	Repair Water Lines (3001, 3303, 3320)	$90
000007	Replace Domestic water Line	$800
990193	Construct 4 Main Chlorine Feed Stations	$350