

# **SECRET & CONFIDENTIAL**

## **CLIENT REFERENCE #XXXX** **ADVERSARY SCENARIOS AND PATHWAYS**

### **Design Basis Threat – Outsider:**

The Design Basis Threat(DBT) chosen in this situation was to a level of Environmental Extremist bordering on Domestic Terrorist for the Outsider Threat. In essence this would involve the following adversary criteria:

### **Example Definitions:**

- 1.** Two-three outsiders with authorized access and inside knowledge gained via collusion with one or more employees. Will use firearms, and small quantities of explosives. Their goal is to damage assets of the facility to impede delivery of water for a period of time or to take-over control of the utility for ransom purpose. Will use firearms and limited explosives to accomplish their goal. Will harm utility employees only if necessary.
- 2.** Larger group of environmental extremist outsiders, 5-10 persons, with no authorized access but limited knowledge of facility gained through use of Internet or locally available public information. Possibly armed with firearms and limited explosives but likely to use only in extreme circumstances. Their goal is to draw attention to their grievance and hold utility at ransom until conditions met. Grievance may not be related to Water Utility. Often unpredictable in nature and thus serious threat.
- 3.** Domestic Terrorist Group of ten or more individuals, with no authorized access but limited knowledge of facility gained through use of Internet or locally available public information. Will use firearms including automatic weapons, small quantities of explosives. Their goal is to damage assets of the facility to impede delivery of water for an extended period of time or to take-over control of the utility for ransom purpose. Will use firearms and explosives to accomplish their goal. Will harm utility employees and their families if necessary. Will have extensive transportation capability and will use military strategies in attack process. High level threat.

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### **Force Versus Stealth:**

When dealing with “extremist” groups, and Domestic Terrorists, it is important to realize that the threat scenario may be initiated in a “stealth” manner or through direct “force” or may also be a combination of both. Common tactics employed by such groups include diversionary tactics of staging an event in one area to draw attention away from the group’s real purpose which is most likely a stealth approach on another target.

None of the examples indicated above are looking to be caught in a criminal act and would prefer to avoid any form of confrontation where employees or visitors are harmed in any way. The one exception would be in the case of Domestic Terrorists where if confronted or placed in an adversarial situation, such individuals will not hesitate to “fight” their way out of such a situation with whatever casualties might be incurred. As a result, and based on selected (DBT) for Facility, the probable scenarios can be summarized as follows:

### **LIKELY SCENARIOS OUTSIDER ADVERSARY:** **(Please see attached Adversary Strategy Matrix)**

- Vandal:**
- \* Interfere with external controls
  - \* Perform minor mischief in form of graffiti, trashing of signage or minor damage to outside equipment, etc.
  - \* Destroy or damage lighting fixtures
  - \* Create confusion with respect to triggering alarms that are unable to be properly assessed as vandal or more serious intrusion
  - \* Create “Hoax” situation

- Criminal:**
- \* Interfere with external controls
  - \* Deliberately destroy lighting fixtures
  - \* Steal equipment or supplies
  - \* Assault employees or visitors
  - \* Interfere with operation of Facility
  - \* Destroy key data
  - \* Initiate Life-Threatening situations
  - \* Create “Hoax” situation

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### **Extremist/ Fanatic**

- \*Interfere with external and internal controls
- \*Cause damage to pipes and valves
- \*Cause damage to electrical or electronic equipment
- \* Deliberately destroy light fixtures and other basic elements of Facility
- \* Attempt to destroy basic elements of Facility Infrastructure
- \* Threaten employees and visitors to Facility
- \* Assault employees and visitors to Facility
- \* Interfere with operations and services of Facility
- \*Create “Hoax” situations
- \* Destroy key data
- \* Initiate Life-Threatening situations
- \* Seek to contaminate “Clear” water supplies
- \* Inadvertently or deliberately create serious loss of services and Facility Mission

### **Domestic Terrorist**

- \*Interfere with external and internal controls
- \*Cause damage to pipes and valves
- \*Cause damage to electrical or electronic equipment
- \* Deliberately destroy light fixtures and other basic elements of Facility
- \* Cause substantial damage to major Infrastructure
- \* Attempt to sever operations and services of Facility on long-term basis
- \*Destroy any and all data found within Facility
- \* Cause wherever possible, contamination of Clear Water Supply
- \* Use weapons and non-sophisticated explosives in the pursuit of optimum damage and destruction
- \* Create “Hoax” situations
- \* Initiate possible “Hostage” situation if confronted by Law Enforcement personnel
- \* Very likely initiate life-threatening situations if confronted

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## **CLIENT REFERENCE #XXXX** **ADVERSARY SCENARIOS AND PATHWAYS**

### **LIKELY SCENARIOS OUTSIDER ADVERSARY:**

#### **SPECIFIC CONCERNS FOR #XXXX**

- 1. Facility Prioritization No. 1 – Water Treatment Plant**
- 2. 36 inch Main Finished Water Pipe going to XXXX and XXXX Pump Stations**

#### **CRITICAL ASSETS – Water Treatment Plant**

- 1. Raw Water Conduit**
- 2. Raw Water Pump Station**
- 3. Power Supply System including Pole Feed, new First Energy Switchgear Units**
- 4. Central High Service Pumps**
- 5. Chlorine Facility**
- 6. Conduit on Roof of Settled Basins**
- 7. Effluent Conduit**

#### **CRITICAL ASSETS – Xxxxx Xxxxxx Xxxxx**

- 1. Main 36” Pipe at XXX Pump Stations**

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## **CLIENT REFERENCE # XXXX** **ADVERSARY SCENARIOS AND PATHWAYS**

### **LIKELY SCENARIOS OUTSIDER ADVERSARY:**

#### **SPECIFIC CONCERNS FOR # XXXX**

##### **Serious Damage to System:**

- 1. Access WTP and as shown in Adversarial Pathways, infiltrate to where the Raw Water Conduit runs under the Flocculation Building for approximately 120 feet, and with three particular concerns related to the two Raw Water Pipes and the Manhole Cover. Where the Raw Water is under substantial pressure at these points, and by means of technical knowledge, and/or electrical skills or by the use of explosives or other form of force, cause a release that would flood lower levels of Water Treatment Facility and thereby cause loss of Raw Water to WTP Facility. Also likely to result in significant damage to various Pump units, and loss of all electrical and electronic equipment in area. In the event of the use of explosives, it is also likely that there would be additional damage to Main Infrastructure, Electrical Connections, and where exposed to a Natural Gas Pipeline, there would almost certainly be a substantial Fire situation within the Facility.**

**Please note that at present time there are no security measures that would detect such entry to Facility.**

- 2. Access Raw Water Pump Station and by means of technical knowledge, mechanical and/or electrical skills or by the use of explosives, cause serious damage to, or destroy pump equipment preventing flow of Raw Water to the WTP Facility and thereby disrupting provision of water services to all customers from that location.**
- 3. Access WTP, cross to First Energy Power Units and adjacent Manhole Cover providing access to electrical feeds, and by means of technical knowledge, mechanical and/or electrical skills or by the use of explosives, cause serious damage to, or destroy such equipment. It is also likely that any perpetrator would also use a truck or similar vehicle of suitable weight and velocity to knock down power feed at the two utility poles outside the perimeter of the WTP, thereby taking away power to the WTP and halting the flow of Raw and Finished Water for an indefinite period.**

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## **CLIENT REFERENCE # XXXX** **ADVERSARY SCENARIOS AND PATHWAYS**

### **LIKELY SCENARIOS OUTSIDER ADVERSARY:**

#### **SPECIFIC CONCERNS FOR # XXXX**

##### **Serious Damage to System:**

- 4. Access WTP perimeter, and then cross to building housing High Service Pumps and by means of technical knowledge, mechanical and/or electrical skills or by the use of explosives, cause serious damage to, or destroy such equipment, thereby stopping the flow of Water to the Utility and all customers.**
- 5. Access perimeter of WTP and cross to Chlorine Gas Building and by means of technical knowledge, mechanical and/or electrical skills or by the use of explosives, cause a serious release of chlorine gas into the immediate area or alternatively, break-in to WTP and steal available Chlorine Gas Cylinders and remove to another location where the release of chlorine gas will have greater impact with respect to loss of life and economic consequences as well as fueling psychological fear into the community.**
- 6. Access WTP perimeter, cross to roof of Settling Basins and access Settled Conduit and by means of technical knowledge, mechanical and/or electrical skills or by the use of explosives, cause serious damage to, or destroy such equipment, thereby stopping the flow of Water to the Utility and all customers.**
- 7. Access WTP perimeter, cross to Filter Effluent Pipe Manhole adjacent to Clearwells 5 & 6, and by means of technical knowledge, mechanical and/or electrical skills or by the use of explosives, cause serious damage to, or destroy such equipment, thereby stopping the flow of Water to the Utility and all customers.**
- 8. Access 36" Main Pipeline at XXXX & 2 Pump Stations either at entrance into perimeter of buildings or at any point in an open field between XXX 1&2 and railway bridge/underpass, and by means of simple excavation and/or use of explosives cause serious breach in pipeline, rendering loss of Main Finished Water supply to Xxxxxx Xxxxx residents.**

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## **CLIENT REFERENCE # XXXX** **ADVERSARY SCENARIOS AND PATHWAYS**

### **Design Basis Threat – Insider:**

The Design Basis Threat (DBT) chosen for the Insider Adversary Level was that of a Disgruntled Employee making a statement that can be defined in the following manner:

### **Example Definitions:**

1. A single employee with authorized access, possessing knowledge of the water system, using hand and power tools readily available (will not bring their own tools), but also having access to the chemicals available in the water utility facilities. A single employee with knowledge of the security system where applicable and not looking to be caught.

The employee's goal is to make a statement against individual management or against the Utility as a whole, for whatever reason. Normally, it would not be their intention to cause major damage to equipment or services but if frustrated in that pursuit, or sufficiently upset, the individual may become unpredictable in their actions.

This person is unlikely to have significant weapons and very unlikely to have any form of Explosive material but may have access to inflammable items.

### **LIKELY SCENARIOS INSIDER ADVERSARY:** **(Please see attached Adversary Strategy Matrix)**

- General:**
- \* Interfere with electronic controls
  - \* Perform minor mischief in form of graffiti, trashing of signage or minor damage to internal/outside equipment, etc.
  - \* Destroy or damage interior/exterior fixtures
  - \* Set minor fires
  - \* Interfere with mechanical controls
  - \* Deliberately destroy data
  - \* Damage equipment or supplies
  - \* Interfere with operation of Facility in minor ways
  - \* Attempt to disrupt water services for limited period
  - \* Initiate "Hoax" situation

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## **CLIENT REFERENCE # XXXX** **ADVERSARY SCENARIOS AND PATHWAYS**

**Design Basis Threat – Insider:**

### **LIKELY SCENARIOS INSIDER ADVERSARY:** **(Please see attached Adversary Strategy Matrix)**

- General:**
- \* Cause damage to pipes and valves
  - \* Cause damage to electrical or electronic equipment
  - \* Deliberately destroy light fixtures and other basic elements of Facility
  - \* Cause possible substantial damage to major Infrastructure
  - \* Attempt to sever operations and services of Facility on short to medium term basis
  - \* Destroy any and all data found within Facility
  - \* Cause wherever possible, contamination of Clear Water Supply

### **SPECIFIC CONCERNS FOR # XXXX - INSIDER**

1. **Facility Prioritization No. 1 – Water Treatment Plant**
2. **36 inch Main Finished Water Pipe going to XXXX and XXXX Pump Stations**

### **CRITICAL ASSETS – Water Treatment Plant**

1. **Raw Water Conduit**
2. **Raw Water Pump Station**
3. **Power Supply System including Pole Feed, new First Energy Switchgear Units**
4. **Central High Service Pumps**
5. **Chlorine Facility**
6. **Conduit on Roof of Settled Basins**
7. **Effluent Conduit**

### **CRITICAL ASSETS – Upper Lorain County**

1. **Main 36” Pipe at XXX Pump Stations**

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**Design Basis Threat – Insider:**

**LIKELY SCENARIOS INSIDER ADVERSARY:**  
**(Please see attached Adversary Strategy Matrix)**

**Serious Damage to System:**

**It is possible that given certain emotional circumstances with the insider adversary selection, the individual could create the following scenarios:**

- 1. Access WTP Intake Building and as shown in Adversarial Pathways, infiltrate Pipe Gallery and cause Raw Water under substantial pressure to release and flood lower levels of Intake Structure and thereby cause loss of Raw Water to WTP and general public, significant damage to various Pump units, and loss of all electrical and electronic equipment in area.**

**Please note that at present time there are no security measures that would detect such entry into the Intake Building.**

- 2. It is unlikely that a single insider would be able to cause damage to the approximate 120 feet of Raw Water Conduit running in the Flocculation Building.**
- 3. Access electrical system within Plant and substantial damage to electrical power system that will create loss of power for a temporary period and require expensive repairs or replacement.**
- 4. Access Central High Service Pump area and using technical knowledge and inside knowledge of system, cause damage to one or more of such pump units, thereby creating loss of service to WTP Facility.**
- 5. Access Chlorine Facility and using technical and inside knowledge, create minor leak of chlorine gas or otherwise render area unable to be used for a temporary period and closing down WTP operation.**
- 6. Access Conduit on roof of Settled Basins and cause temporary shut down of such conduit affecting WTP operation for temporary period.**

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## **CLIENT REFERENCE # XXXX** **ADVERSARY SCENARIOS AND PATHWAYS**

**Design Basis Threat – Insider:**

**LIKELY SCENARIOS INSIDER ADVERSARY:**  
**(Please see attached Adversary Strategy Matrix)**

**Serious Damage to System:**

- 7. Access WTP perimeter, cross to Filter Effluent Pipe Manhole adjacent to Clearwells X & X, and by means of technical knowledge, mechanical and/or electrical skills or by the use of explosives, cause serious damage to, or destroy such equipment, thereby stopping the flow of Water to the Utility and all customers.**
- 8. It is unlikely that a single insider would be able to cause damage to the 36” Main Pipeline running to XXX 1&2 Pump Stations.**
- 9. Introduce contaminant such as oil, concentrated dye, or other form of chemical Contamination into Finished Water requiring temporary shutdown of Facility operations and requiring costly and time-consuming clean-up.**
- 10. Set fire to part of Administration Building that would result in temporary closure of that area and possible loss of large amounts of general and operational data.**
- 11. Set fire to other parts of the WTP Complex that would result in temporary closure of such areas and leading to costly repair.**