



Department of Energy
West Valley Demonstration Project
10282 Rock Springs Road
West Valley, NY 14171-9799

August 22, 2016

Mr. Jeffrey D. Bradford
President & General Manager
CH2M HILL BWXT West Valley, LLC
West Valley Demonstration Project
10282 Rock Springs Road
West Valley, NY 14171-9799

ATTENTION: J. D. Rendall, Regulatory Strategy & Chief Engineer, AC-EA

SUBJECT: Environmental Checklist WVDP-2016-03, "Construction and Operation of a New Potable Water Treatment System"

REFERENCE: Letter WD:2016:0369 (368696), J. D. Bradford to R. W. Reffner, "Contract No. DE-EM0001529, Section J-3, Item 105, NEPA Documentation, Transmittal of Environmental Checklist WVDP-2016-03, Construction and Operation of a New Potable Water Treatment System," dated August 4, 2016

Dear Mr. Bradford:

I have reviewed the subject Environmental Checklist and agree that the actions described therein are categorically excluded per Title 10, Code of Federal Regulations (CFR) Part 1021, as amended, Subpart D, Appendix B, B1.15, "Support Buildings" and B1.26 "Small Water Treatment Facilities," as detailed in the attachment to the Environmental Checklist. Enclosed is a signed Environmental Checklist form to that effect.

The contents of this correspondence are not intended to impact or modify contract scope and/or cost. If you have any questions, please contact me on Extension 4007.

Sincerely,

Martin P. Krentz
National Environmental Policy Act Compliance Officer
West Valley Demonstration Project

Enclosure: Signed Environmental Checklist

cc: C. A. Biedermann, CHBWV, AC-EA, w/enc.
D. P. Klenk, CHBWV, WV-10PLEX, w/enc.
C. M. Bohan, DOE-WVDP, AC-DOE, w/enc.
M. P. Krentz, DOE-WVDP, AC-DOE, w/enc.
M. N. Maloney, DOE-WVDP, AC-DOE, w/enc.
B. M. Frank, NYSERDA, AC-NYS, w/enc.

MPK:368792 - 451.4



**Department of Energy
West Valley Demonstration Project (DOE-WVDP)**

ENVIRONMENTAL CHECKLIST

Project/Activity Title: Construction and Operation of a New Potable Water Treatment System	NEPA ID Number: WVDP-2016-03 Rev. #: 0 Date: July 28, 2016
Contractor Project Manager: John D. Rendall	Phone Number: 716-942-4602
Contractor NEPA Coordinator: Charles A. Biedermann	Phone Number: 716-942-4333
DOE-WVDP NEPA Document Manager: Martin P. Krentz	Phone Number: 716-942-4007

A. BRIEF PROJECT/ACTIVITY DESCRIPTION: Attach a detailed description or statement of work.

B. SOURCES OF IMPACT: Would the action involve, generate, or result in changes to any of the following:

	YES	NO		YES	NO
1. Air Emissions	X		12. Water Use/Diversion	X	
2. Liquid Effluents	X		13. Water Treatment	X	
3. Solid Waste	X		14. Water Course Modification		X
4. Radioactive Waste/Soil		X	15. Radiation/Toxic Chemical Exposures	X	
5. Hazardous Waste		X	16. Pesticide/Herbicide Use		X
6. Mixed Waste		X	17. High Energy Source/Explosives		X
7. Chemical Storage/Use	X		18. Transportation	X	
8. Petroleum Storage/Use	X		19. Noise Level	X	
9. Asbestos		X	20. Workforce Adjustment		X
10. Utilities	X		21. Other		X
11. Clearing or Excavation	X				

In an attachment, qualify and explain each question that you have specifically answered "YES."

C. CATEGORY EVALUATION CRITERIA: Would the proposed action:

	YES	NO
1. Take place in an area of previous or ongoing disturbance?	X	
2. Create hazardous, radioactive, or mixed waste for which no disposal is available?		X
3. Impact a RCRA-regulated unit or facility?		X
4. Force a low income or ethnic minority population to shoulder a disproportionate share of the negative environmental impacts of pollution or environmental hazards because of a lack of political or economic strength?		X
5. Involve air emissions and be located in an air pollutant non-attainment or maintenance area for any criteria pollutants?		X
6. Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including DOE and/or Executive Orders?		X
7. Disturb hazardous substances, pollutants, or contaminants that pre-exist in the environment such that there would be uncontrolled or unpermitted releases?		X
8. Require siting, construction, or major expansion of a waste storage, disposal recovery, or treatment facilities, but may include such categorically-excluded facilities?		X
9. Adversely affect environmentally sensitive resources including, but not limited to: structures of archeological, historic or architectural significance, threatened or endangered species or their habitat; floodplains or wetlands; wildlife refuges, agricultural lands or vital water resources (e.g., sole-source aquifers)?		X
10. Involve extraordinary circumstances?		X
11. Be "connected" to other actions with potentially significant impacts, related to other proposed actions with cumulatively significant impacts, and precluded by 40 CFR § 1506.1 or 10 CFR § 1021.211?		X


In an attachment, qualify and explain each question that you have specifically answered "YES."

**Department of Energy
West Valley Demonstration Project (DOE-WVDP)
ENVIRONMENTAL CHECKLIST**


D. RECOMMENDATION AND DETERMINATION:

DOE-WVDP Director's Recommendation: I find and recommend that this proposed action meets the criteria specified in 10 CFR Part 1021, Subpart D, and/or DOE Policy and Guidance for the following:

- Categorical Exclusions (Appendix B, Class of Action B1.15, Support Buildings and B1.26, Small Water Treatment Facilities)
- Actions Within the Scope of Existing NEPA Documentation NEPA Document ID Number _____
- Ongoing Operations (Standard Operating Procedure OH-6.1.01, Rev. 1, Section 5.2)

Signature:  Date 08-22-2016
Director, Department of Energy
West Valley Demonstration Project (DOE-WVDP)

DOE-WVDP NEPA Compliance Officer's Determination: Based on my review of the attached information concerning this proposed action, as the WVDP NEPA Compliance Officer (DOE Order 451.1B, Section 5.d.), I have determined that the proposed action fits within the specified class of actions, that the other regulatory requirements identified in Section C are met, and that this proposed action proceed without further NEPA review.

Signature:  Date 8/17/2016
DOE-WVDP NEPA Compliance Officer,
West Valley Demonstration Project

OR

- Environmental Assessments (Appendix C, Class of Action _____; or Action not listed in Subpart D)
- Environmental Impact Statements (Appendix D, Class of Action _____)
- Interim Actions (40 CFR Part 1506.1 and 10 CFR Part 1021.211)
- Integrated Documentation for CERCLA/RCRA Actions
- Variances (Emergency Action, 40 CFR Part 1506.11 and 10 CFR Part 1021.34)

DOE-WVDP NEPA Compliance Officer's Concurrence: I concur with the recommendation that this proposed action fits within the specified class of actions.

Signature: _____ Date _____
DOE-WVDP NEPA Compliance Officer,
West Valley Demonstration Project

DOE-WVDP Manager's Determination: Based on my review of the attached information concerning this proposed action, as the Director of the West Valley Demonstration Project (DOE Order 451.1B, Section 5.a.), I have determined that the level of documentation recommended for the proposed action is appropriate.

Signature: _____ Date _____
Director, Department of Energy
West Valley Demonstration Project (DOE-WVDP)

CONSTRUCTION AND OPERATION OF A NEW POTABLE WATER TREATMENT SYSTEM

SECTION A. BRIEF PROJECT/ACTIVITY DESCRIPTION

BACKGROUND

From 1966 to 1972, Nuclear Fuel Services, Inc. (NFS) operated a nuclear fuel reprocessing plant at the Western New York Nuclear Service Center (WNYNSC) near West Valley, New York (Figure 1). The plant reclaimed uranium and plutonium from spent nuclear fuel. After operating the fuel reprocessing facility for six years, NFS halted operations to make modifications to increase the plant's reprocessing capacity, reduce worker doses, and reduce radioactive effluents. During this period, new regulatory requirements were issued related to earthquake and tornado protection, and waste management requirements. NFS concluded that it would not be economically viable to continue the reprocessing operation at West Valley. In 1976, NFS informed New York State that it was withdrawing from the reprocessing business and intended to turn the West Valley facility and the two disposal areas over to New York State.

At that time, the reprocessing facility contained 750 spent fuel assemblies that had not been reprocessed, 600,000 gallons of liquid High Level Radioactive Waste (HLW) stored in two steel tanks, the highly contaminated Main Plant Process Building, and almost three million cubic feet of radioactive waste buried in the two disposal areas.

In 1980, Congress passed the West Valley Demonstration Project (WVDP) Act (Public Law 96-368), which directed the U. S. Department of Energy (DOE) to do the following: (1) solidify the HLW at the WNYNSC in a form suitable for transportation and disposal; (2) develop containers for the HLW that are suitable for permanent disposal; (3) transport the solidified HLW, in accordance with applicable provisions of law, to an appropriate Federal repository for permanent disposal; (4) in accordance with applicable licensing requirements, dispose of low-level radioactive waste (LLW) and transuranic (TRU) waste produced as a result of solidifying the HLW; and (5) decontaminate and decommission: (a) the tanks and other facilities of the WNYNSC in which the HLW solidified under the Project is stored; (b) the facilities used in the solidification of the waste; and (c) any material and hardware used in connection with the Project, in accordance with requirements that the U.S. Nuclear Regulatory Commission (NRC) prescribes.

In 1982, a Final Environmental Impact Statement (EIS) (DOE/EIS-0081) and associated Record of Decision (ROD) were issued for the actions that DOE proposed to satisfy the first two requirements of the WVDP Act. During the initial phase of work performed under EIS-0081, which was completed in September 2002, the HLW was immobilized in borosilicate glass through vitrification. The canisters of immobilized HLW are stored on-site in the High Level Waste Interim Storage Facility (the former Chemical Process Cell) and are being relocated to the HLW Canister Interim Storage System for temporary storage until DOE authorizes their removal. In 1993 and 1998, the DOE prepared Supplement Analyses (DOE-EIS-025 and WVDP-321, respectively) of the 1982 Final EIS to re-examine on-going HLW solidification activities as well as other refinements to the actions originally evaluated in the EIS. As a result of both analyses, DOE concluded that no environmentally relevant or substantial changes in Project scope had occurred, that no new circumstances or relevant information existed, and that the environmental analyses performed for the 1982 EIS were still valid.

After solidification of liquid and sludge was completed in September 2002, the WVDP shifted its attention and resources to the remaining requirements of the WVDP Act, waste disposal and facility decontamination and decommissioning. To facilitate these activities, in 2006, DOE prepared the Environmental Assessment for the Decontamination, Demolition, and Removal of Certain Facilities at the West Valley Demonstration Project. A Finding of No Significant Impact for these actions was subsequently made. Additionally, two EISs were prepared to review alternatives for completion of these requirements; WVDP Waste Management EIS (DOE/EIS-0337-F) completed in 2003 and ROD issued in 2005 and the Decommissioning and/or Long-Term Stewardship EIS (DOE/EIS-0226) completed in 2010 and ROD issued in 2010.

The “Preferred Alternative” to be implemented as a result of the Decommissioning and/or Long-Term Stewardship final EIS (DOE/EIS-0226) employs a two phased approach to decommissioning the site. The first Phase (Phase 1) involves the decommissioning of most site facilities, including demolition of the Main Plant Process Building and Vitrification Facility and for the DOE to undertake studies to reduce uncertainties associated with decommissioning the remaining facilities. The second phase (Phase 2) completes the decommissioning and/or long term management decision making for the site. Phase 2 decisionmaking will be evaluated under a supplemental EIS. On August 1, 2016, DOE issued the Final Request for Proposals for the West Valley Demonstration Project Supplemental Environmental Impact Statement Support Service.

Among the facilities scheduled for decommissioning and demolition under Phase 1 is the Utility Room and Utility Room Extension. The Utility Room at the WVDP houses the current treatment system for the existing potable and industrial water supply and serves as the main hub for supplying potable water to the water distribution system. The system draws water from a bulk water storage tank located near the Utility Room. Raw water to fill this tank is supplied by two (2) wells that were installed in 2014. The raw water treatment system involves an iron filter to remove the excess iron and chlorination for disinfection and is periodically pumped to a holding tank. As previously stated, along with other support buildings at the WVDP, the Utility Room and Utility Room Extension including the water treatment and distribution hub are identified for demolition under Phase 1 decommissioning at the WVDP.

A.1 Purpose and Need

Although DOE/EIS-0226 evaluates the environmental impacts for the demolition of the Utility Room and Utility Room Extension, the EIS does not provide for construction and operation of a new water treatment system to supply potable water during completion of the Phase 1 decommissioning actions. The purpose of this environmental review is to evaluate the construction and operation of a new potable water treatment system and associated support building that meets the New York State Department of Health Title 10 of the New York Codes Rules and Regulations (NYCRR) Part 5 requirements for a nontransient, noncommunity small water treatment system. A nontransient noncommunity water system is defined as a public water system that is not a community water system but is a subset of a noncommunity water system that regularly serves at least 25 of the same people, four hours or more per day, for four or more days per week, for 26 or more weeks per year.

A.2 Objectives

The objective is to evaluate the environmental aspects associated with the construction and operation of a new potable water treatment system, including the installation of new disinfection and iron sequestration equipment and construction of a support building to house the treatment and distribution hub. To supply water for the WVDP, two new potable water wells were installed in 2014. By obtaining water from these two production wells reduces or eliminates the need for source water from the existing reservoir and dam system. The well water source also reduces the treatment that was previously required for the surface water source.

The proposed design is a new potable water treatment system at the site that will supply finished potable water to the site facilities and provide a supply of raw water to an existing storage tank for fire suppression purposes and site utility water (dust suppression, etc.). The new potable water treatment system will be located near to the two supply wells and remote from the Utility Room, thus supporting the demolition of the Utility Room. The proposed location of the support building that will house the potable water treatment system is an existing previously developed area located to the southwest of the main warehouse and just south of water Well #1 (Figure 2) and the proposed layout for the potable water treatment system is provided in Figure 3).

A.3 Type and Scope of Activities

The proposed potable water treatment system must be designed to meet New York State Department of Health standards as specified in 10 NYCRR Part 5, which specifically incorporates the Recommended

Standards for Water Works (published by the Great lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers). Other functional design requirements are as follow:

- 1) System must supply potable water.
- 2) System must supply multiple site water needs.
- 3) System shall be designed to meet requirements of 10 NYCRR Part 5, Non-transient, noncommunity small water system.
- 4) Treatment system shall be located to facilitate inspection, maintenance, repair, renovation, treatment, and testing as required.
- 5) System shall be designed to provide automatic fire loop makeup water in conjunction with meeting potable water demands.
- 6) Treatment system shall be supplied with backup power connections.
- 7) Treatment system shall be located to optimize use of existing underground piping distribution system.
- 8) System shall be protected from weather, animals, and insects.
- 9) Materials used in the design, construction, and repair of a public water system shall be lead-free, and piping system components shall be National Sanitation Foundation certified.
- 10) Disinfection system to include redundant components and auxiliary power.
- 11) System shall accommodate sampling of temperature, pH, and disinfectant concentration.
- 12) System shall have metering capability for flow rate and totalizer.
- 13) Design shall consider surge suppression and minimize water hammer.
- 14) System shall treat for iron using a sequestration technique.
- 15) Treatment system shall address the wastewater generated.
- 16) Treatment system shall have eyewash and safety shower.
- 17) System shall be designed to be housed in a 24' x 24' utility building with a nominal design life of ten years.
- 18) Provisions should be made for heating and freeze protection to protect the system during winter months.
- 19) Distribution system shall be designed to provide all of the existing areas with potable water without passing through the Utility Room.
- 20) System shall implement a common and simple control scheme.
- 21) System shall enable 24 hour 7 day operation.
- 22) Any automatic controls shall have manual override capability.
- 23) System shall provide for gauges on discharge of all pumps.
- 24) System shall be capable of producing 50 gallons per minute or 72,000 gpd and maintaining a nominal flow of 10 gallons per minute.
- 25) System shall have a minimum working pressure of 20 pounds per square inch (psi) at ground level at all points in distribution system and a normal working pressure minimum of 35 psi.

The well water supply is generally considered to be of good quality with somewhat elevated levels of iron (1.40 mg/L from Well #1 and 0.55 mg/L from Well #2). The elevated concentrations of iron oxides may result in visible rust stains and an unsightly product. The existing well water treatment system includes iron filtration and chlorine disinfection. The current iron filtration process has notable maintenance requirements and produces a waste stream from filter back washing that requires management and disposal.

The proposed new water distribution system will be supplied by two existing water withdrawal wells (Well #1 and Well #2) and will be located in close proximity to the wells. It will consist of two flow paths, one producing treated water for the potable water supply system and the second for sending raw water to the water storage tank (Tank 32-D1) for fire suppression and industrial/utility uses.

The new potable water treatment system will service approximately 250 personnel with approximately five service connections (Figure 2). Following metering, the water will be dosed with a polyphosphate/orthophosphate solution to sequester the metal ions (primarily iron) in the water that would otherwise be oxidized and precipitate when exposed to sodium hypochlorite during the remainder of the treatment

process. The phosphate agent will also sequester hardness and manganese in the water in addition to the targeted iron. The proposed sequestration agent also acts as a corrosion inhibitor. Since the proposed design would result in water usage within a seven to ten day period, the sequestering action will remain until the potable water has passed through the distribution system. This will significantly reduce or eliminate the aesthetic concerns (taste and staining) that the iron levels in the raw water present. Following the sequestration process, the water will flow to the sodium hypochlorite chemical feed disinfectant process. The chlorinated water then flows through a battery of four baffled contact tanks, operating in parallel, to achieve the required contact time. The water is then considered finished (treated) potable water. Prior to exiting the treatment building, the water flows through three hydro-pneumatic pressure tanks to provide for pressurized storage and to meet the intermittent small demands on the system. The total combined volume of the tanks is 555 gallons (three times 185 gallons per tank), exceeding the New York State's standard sizing requirement of ten times the nominal pumping rate (50 gallons per minute).

The second priority of the water system will be to provide a raw water supply to the existing storage tank 32D-1. This water is now proposed for exclusive use as a utility and fire water supply and the tank will no longer be connected to the potable water system following implementation of this proposed treatment and distribution system modification.

The proposed potable water treatment system will be housed in a new 24 foot by 24 foot modular construction pre-engineered metal building. The building will have a six inch slightly reinforced (welded mesh wire) concrete base with four foundation piers. The concrete floor will be fitted with two floor drains, one near the safety shower station and the other in the center of the room. A sump crock with sump pump will be installed in the floor near the sample sink. The floor drains and sample sink drain will be directed to this crock. The sump pump discharge line will run to a 300 gallon wastewater holding tank.

A.4 Schedule and Timing

Construction of the support building, potable water treatment and water distribution system is proposed to occur during the 2016 construction season. In the event that construction cannot be completed during 2016, the system would be constructed and implemented in the spring of 2017.

SECTION B. SOURCES OF IMPACT

- 1. Air Emissions** - There would be minor Carbon Monoxide (CO), Carbon Dioxide (CO₂) and particulate air emissions generated from the construction equipment used to construct the foundation, support building, and installation of the treatment system equipment. This equipment includes trucks, excavators, front-end loaders, and other typical construction equipment. These emissions would occur intermittently over a ten-hour day. Fugitive dust could be generated. Such dust would be controlled as necessary to minimize impact. Volatile organic emissions could be generated during refueling and hydraulic fluid replacement of the equipment. Such emissions will be minimal and will not require any controls under state and federal Clean Air Act regulations. Radiological air emissions are not anticipated from the construction activity as it would occur in a non-impacted area of the WVDP. Any potential radiological emissions, if encountered would be monitored by Radiological Controls personnel and evaluated for compliance with National Emission Standards for Hazardous Air Pollutants, Emissions of Radionuclides Other Than Radon from Department of Energy Facilities.
- 2. Liquid Effluents** – Liquid effluents from construction are not anticipated. Should any liquid effluents be generated, they would be managed in accordance with applicable Clean Water Act regulations; the WVDP State Pollutant Discharge Elimination System Permit (SPDES), SPDES#: NY0000973; and WVDP site procedures. Liquid effluents from operation of the proposed Potable Water Treatment System consist of wastewater from sampling activities required by the Cattaraugus County Health Department and site procedures, the safety shower/eye wash station, and potential leaks in the potable water treatment system. This wastewater will be collected in the sump located in the support building, transferred to the 300 gallon holding tank, and periodically emptied and hauled off site to a permitted sanitary sewage treatment plant in the same manner as other domestic wastewater streams produced at the WVDP. It should be noted that installation of an iron sequestration system will eliminate the waste stream currently being generated from backwash of the existing iron filtration system. The proposed

activity is consistent with the DOE goals for sustainability by water use efficiency, waste reduction, and conservation of natural resources.

- 3. Solid Waste** - Typical construction waste such as boxes, wood forms, paper, and other waste materials would be generated. This waste is transported to a certified recycler or a properly permitted solid waste landfill for disposal. Soils and environmental media will be generated as a result of construction activities. Environmental media (soils) will be managed in accordance with the WVDP policy for Management of Environmental Media, WV-939 and the DOE-WVDP policy for Management of Environmental Media - Phase I Decommissioning of the West Valley Demonstration Project, QP-450-01. Solid waste generation is not expected as a result of the operation of the proposed water treatment and distribution system.

An active program to minimize waste generation is in place at the WVDP. The waste minimization program includes both source reduction and recycling. Waste Minimization and Pollution Prevention Opportunities are also an integral part of the work review process. Waste minimization and pollution prevention opportunities are continually under consideration for identifying opportunities associated with construction and routine operation activities.

- 7. Chemical Storage/Use** – Small amounts of chemicals may be used during construction of the potable water treatment system and support building. During operations of the system, a polyphosphate/orthophosphate sequestration product and sodium hypochlorite will be used. Carus 8100 is the proposed sequestration agent. This product is designed and manufactured specifically for use with potable water systems. In neat (undiluted) concentration it can cause corrosion of metal piping. However, the product will be dosed into the treatment system at a much more dilute concentration and will not be detrimental to metal piping. A neat concentration of Carus 8100 can also chemically react if it were to come into contact with a strong oxidizing agent such as a neat concentration (12.5%) of sodium hypochlorite. Therefore, the proposed location of the phosphate storage/injection and sodium hypochlorite storage/injection systems are at opposite ends of the support building. The phosphate sequestration agent is relatively benign. However, in neat concentrations, it may cause irritation or discomfort to sensitive personnel. Appropriate personal protective equipment will be worn by all personnel managing this product. The sodium hypochlorite disinfectant is a strong oxidizer. Solutions burn the skin and cause eye damage, especially when used in concentrated forms. However, as recognized by the National Fire Prevention Association, only solutions containing more than 40% sodium hypochlorite by weight are considered hazardous oxidizers. Solutions less than 40% are classified as a moderate oxidizing hazard. Only 12.5% neat solutions of sodium hypochlorite will be used in the potable water treatment system. Appropriate personal protective equipment will be worn by all personnel managing this product. In addition, the sodium hypochlorite day tank and an additional carboy will be stored on a containment pallet. Storage and chemical feed dosing equipment will be contained within a small fiberglass enclosure ventilated to the outside with positive pressure ventilation piping. When dosed into the water supply at the recommended concentrations, these two products do not present a risk of causing a harmful chemical reaction. Consistent with the WVDP Environmental Management System, the dosing system will require minimal maintenance, lack a discrete waste stream such as a backwash requirement, and has a minimal overall cost.

All chemicals bought on site at the WVDP are reviewed and must be approved per EAD-103, Regulatory Strategy Purchase Requisition Review Procedure.

- 8. Petroleum Storage/Use** - Petroleum products to support WVDP site construction activities (i.e., gasoline or diesel-powered equipment) are stored in on-site storage tanks. These tanks are monitored and inspected in accordance with WVDP procedures. Subcontractors are required to have an approved petroleum product management plan. All petroleum storage and use will be done in a manner that will minimize environmental impacts. Steps taken will include a documented leak inspection program, spill kits will be readily available in the event of a spill or release, spills or releases of petroleum products shall be immediately reported by the person discovering the spill to CHBWV Plant Systems Operations who will notify Environmental Regulatory Strategy. All cleanup materials will be collected and properly disposed of by Waste Operations. Timely regulatory and DOE notifications will be made in accordance with WVDP policies and procedures (WV-915 and WVDP-340) and New York State agreement reporting criteria.

- 10. Utilities** – The water treatment plant is proposed to have electrical service run from an existing panel at the water supply well site over to the new support building. This existing panel has a backup power

service, which is run from the existing power generator at the Utility Room. During decommissioning of the Utility Room this generator will be taken out of service. A new backup power system will be developed and connected to the panel at the water supply well site, maintaining on demand backup power to the water treatment system. Climate control will be needed during colder seasons inside the support building. Consistent with the Environmental Management System and DOE sustainability goals, it is proposed to maintain heat in the support structure building at 50° F, which will help to minimize heating energy requirements. Additionally, groundwater from the water supply wells is anticipated to be between 50 and 55° F year round. A combination of groundwater temperature and supplemental heat from the proposed heater will maintain an internal temperature of 50° F during the winter months.

11. **Clearing and Excavation** – The support building and new piping configurations will all occur in previously disturbed areas of the WVDP. No land clearing will be required. Ground disturbance and excavations will be minimal to provide for the foundation of the support building and installation of new piping for the distribution system.
12. **Water Use/Diversion** – Water will be provided by the existing groundwater wells. No water diversion will occur.
13. **Water Treatment** – The proposed new potable water treatment system will replace the existing water treatment system located in the Utility Room. The iron sequestration process will eliminate a wastewater stream that is currently generated from backwash of the iron filtration process.
15. **Radiation/Toxic Chemical Exposure** – No toxic chemical exposure will occur from construction of the new support building or the treatment system or for modifications to the distribution piping. There is a slight potential for skin irritation to sensitive personnel from exposure to neat solutions of the phosphate sequestering agent used in the proposed water treatment process. The sodium hypochlorite solution needed for the potable water treatment system is toxic and has the potential to form toxic gases. These solutions will be maintained in separate locations to avoid any potential for mixing that could result in chemical reactions. The sodium hypochlorite day tank and an additional carboy will be stored on a containment pallet. Sodium hypochlorite storage and chemical feed dosing equipment will be contained within a small fiberglass enclosure ventilated to the outside with positive pressure ventilation piping. Appropriate personal protective equipment will be worn by all personnel managing either of these products. When dosed into the water supply at the recommended concentrations, these two products do not present a risk of causing a harmful chemical reaction.

As work will occur in an area with no history of radiological contamination, exposure to radiation is not expected. However, should radiological contamination be encountered during excavation activities for construction of the support building, Radiation Control personnel will evaluate the contamination, isolate and remove the contaminated environmental media, and issue a Radiation Work Permit that will limit the potential for exposure and require appropriate personal protective equipment and worker training.

18. **Transportation** – Transportation would include delivery of building materials to the WVDP. All shipments will comply with state and federal Department of Transportation regulations and requirements. Material shipments will not have significant impacts to public roads and transportation systems.
19. **Noise Levels** - Increased noise levels near construction activity would be limited to the normal ten-hour work day. The noise levels would be of short duration and probably would not exceed 85 dB. personal protective equipment (hearing protection) will be required per Occupational Safety and Health Administration requirements and DOE Orders during activities expected to generate elevated noise levels. Excessive noise levels are not anticipated for operation of the potable water treatment system.

SECTION C. CATEGORY EVALUATION CRITERIA:

1. Take place in an area of previous or on-going disturbance? Yes.

Construction and operation of the new water treatment system shall be solely within an area of previous or ongoing disturbance at the WVDP.

SECTION D. RECOMMENDATION AND DETERMINATION:

Categorical Exclusions (CX) are recommended for the proposed construction and operation of a new potable water treatment and distribution system. The construction of the potable water treatment system support building described in this environmental checklist falls within the class of actions described in Title 10, Code of Federal Regulations (CFR) Part 1021, as Amended, Subpart D, Appendix B, B1.15; Support Buildings and construction and operation of a potable water treatment system to replace the existing system described in this environmental checklist falls within the class of actions described in B1.26; Small Water Treatment Facilities.

REFERENCES

CH2M HILL and BWXT West Valley, "Spill/Release Evaluation, Management, and Reporting Program," WVDP-340, Rev. 6 (or latest revision), April 3, 2014

_____, "Spill/Release Notification and Reporting," WV-915, Rev. 11 (or latest revision), August 28, 2014

_____, "Management of Environmental Media," WV-939, Rev. 5 (or latest revision), May 11, 2015

_____, "Regulatory Strategy Purchase Requisition Review Procedure," EAD-103, Rev. 12 (or latest revision), December 17, 2015

Great Lakes - Upper Mississippi River Board, "Recommended Standards for Water Works, Policies for the Review and Approval of Plans and Specifications for Public Water Supplies," 2012 Edition

U. S. Congress, "National Environmental Policy Act," 42 U.S.C. §4321 *et seq.*, 1970 as amended

_____, "Clean Air Act," 42 U.S.C. §7401 *et seq.*, 1970 as amended

_____, "Clean Water Act," 33 U.S.C. §1251 *et seq.*, 1972 as amended

_____, "Public Law 96-368 West Valley Demonstration Project Act (S.2443)", dated October 1, 1980

New York State Department of Environmental Conservation, "Modified West Valley Demonstration Project State Pollutant Discharge Elimination System Permit DEC#9-0422-00005/00006 SPDES#: NY0000973," Effective Date July 1, 2011

_____, New York Codes, Rules and Regulations, Title 10 Part 5, Drinking Water Supplies, November, 9, 2011

U.S. Department of Energy, "Final Environmental Impact Statement: Long-Term Management of Liquid High-Level Radioactive Wastes Stored at the Western New York Nuclear Services Center, West Valley," DOE/EIS-0081, June 1982

_____, "National Environmental Policy Act Implementing Procedures," April 28, 1992, as amended

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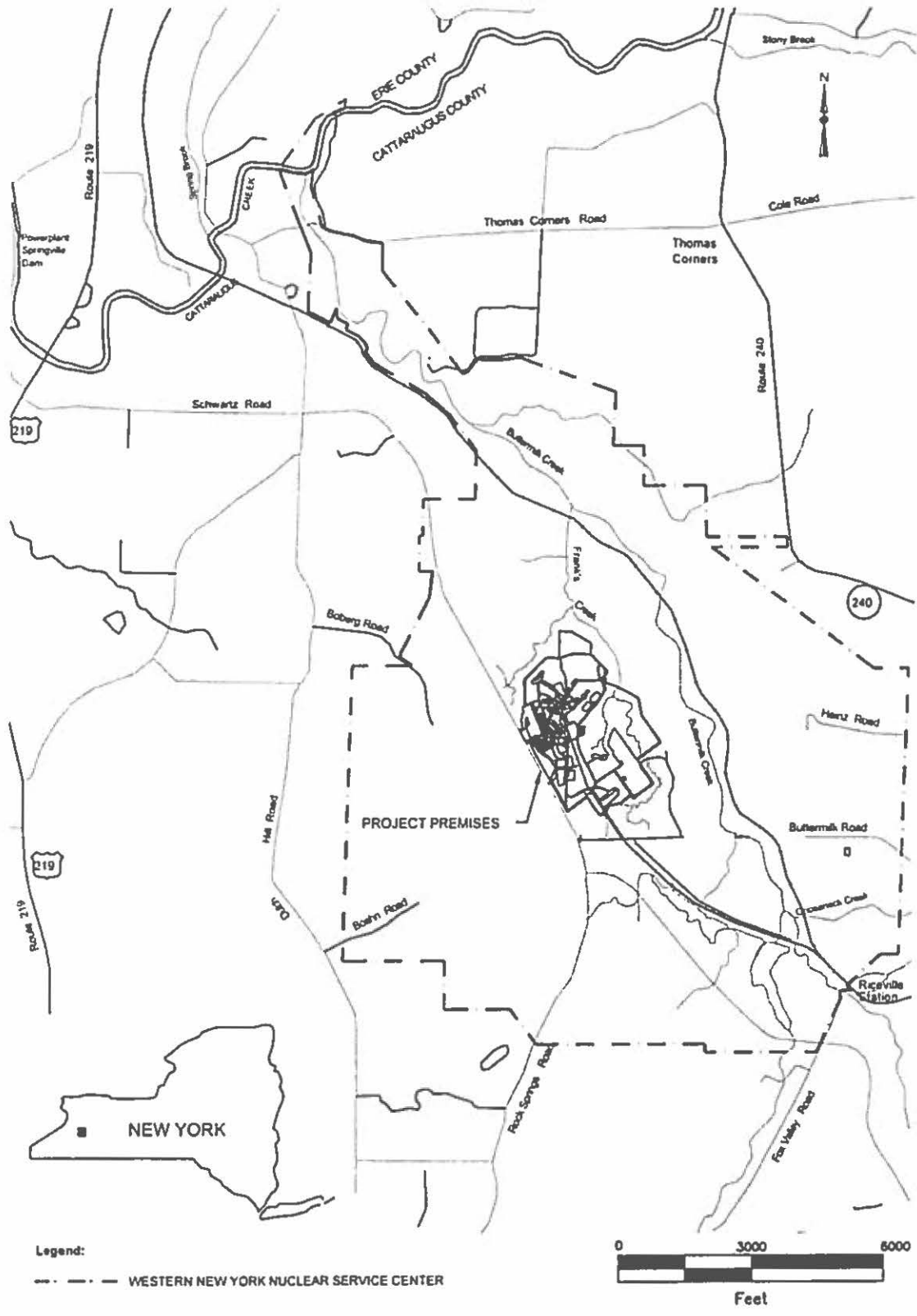
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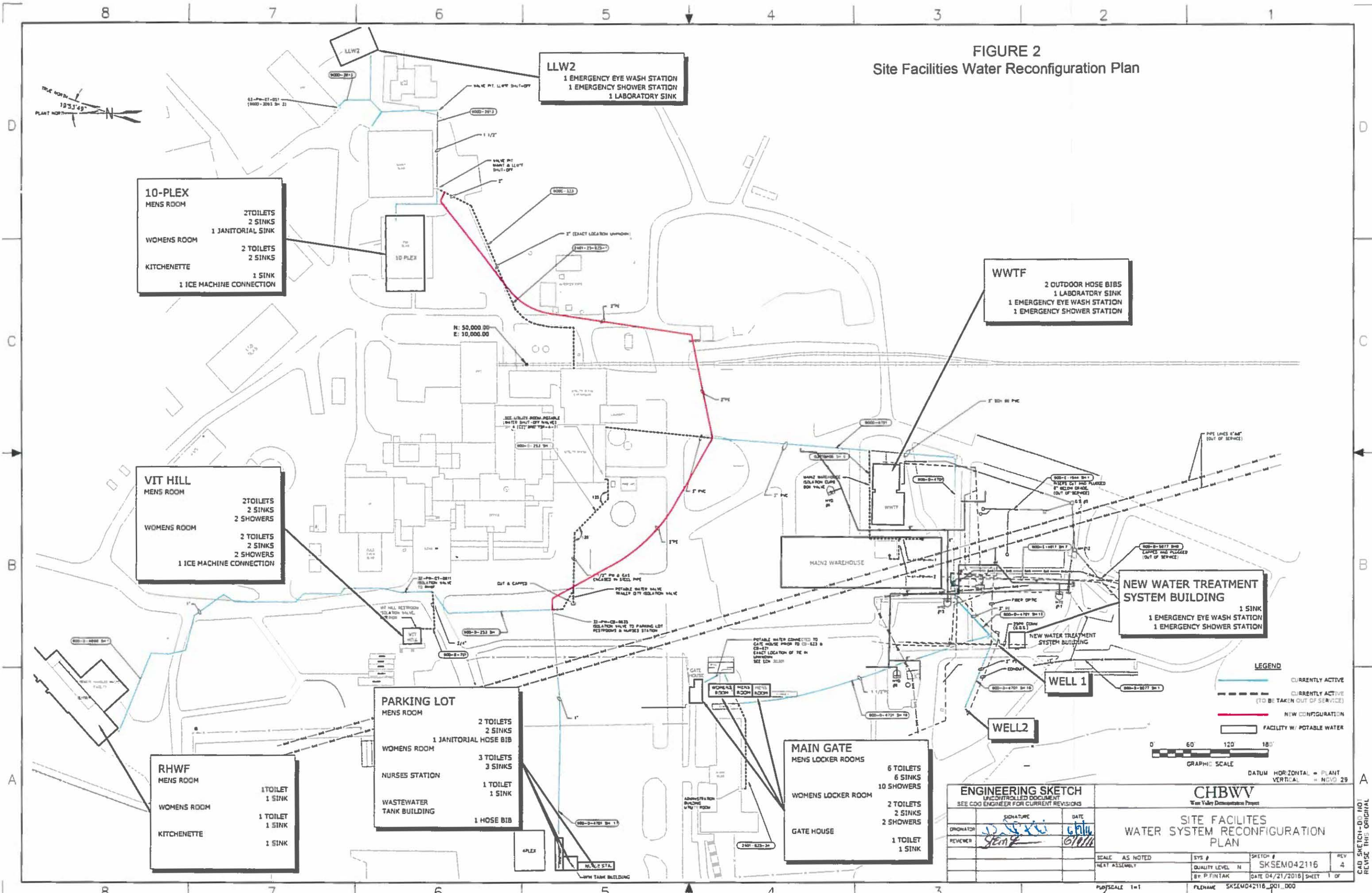
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FIGURE 1
Location of the Western New York Nuclear Service Center and
West Valley Demonstration Project



Attachment
Environmental WVDP-2016-03
Construction and Operation of a New Potable Water Treatment System

FIGURE 2
Site Facilities Water Reconfiguration Plan



10-PLEX
MENS ROOM
2 TOILETS
2 SINKS
1 JANITORIAL SINK
WOMENS ROOM
2 TOILETS
2 SINKS
KITCHENETTE
1 SINK
1 ICE MACHINE CONNECTION

VIT HILL
MENS ROOM
2 TOILETS
2 SINKS
2 SHOWERS
WOMENS ROOM
2 TOILETS
2 SINKS
2 SHOWERS
1 ICE MACHINE CONNECTION

RHWF
MENS ROOM
1 TOILET
1 SINK
WOMENS ROOM
1 TOILET
1 SINK
KITCHENETTE
1 SINK

PARKING LOT
MENS ROOM
2 TOILETS
2 SINKS
1 JANITORIAL HOSE BIB
WOMENS ROOM
3 TOILETS
3 SINKS
NURSES STATION
1 TOILET
1 SINK
WASTEWATER TANK BUILDING
1 HOSE BIB

MAIN GATE
MENS LOCKER ROOMS
6 TOILETS
6 SINKS
10 SHOWERS
WOMENS LOCKER ROOM
2 TOILETS
2 SINKS
2 SHOWERS
GATE HOUSE
1 TOILET
1 SINK

LLW2
1 EMERGENCY EYE WASH STATION
1 EMERGENCY SHOWER STATION
1 LABORATORY SINK

WWTF
2 OUTDOOR HOSE BIBS
1 LABORATORY SINK
1 EMERGENCY EYE WASH STATION
1 EMERGENCY SHOWER STATION

NEW WATER TREATMENT SYSTEM BUILDING
1 SINK
1 EMERGENCY EYE WASH STATION
1 EMERGENCY SHOWER STATION

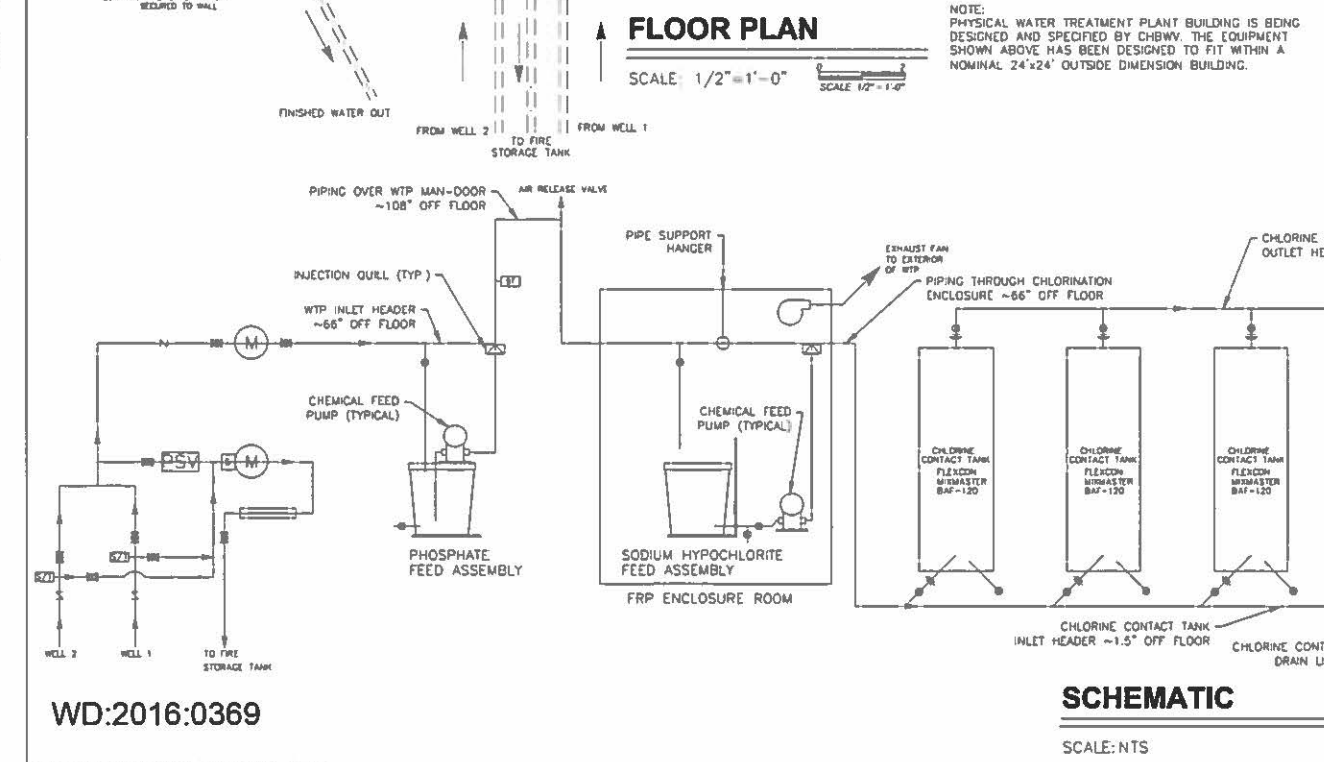
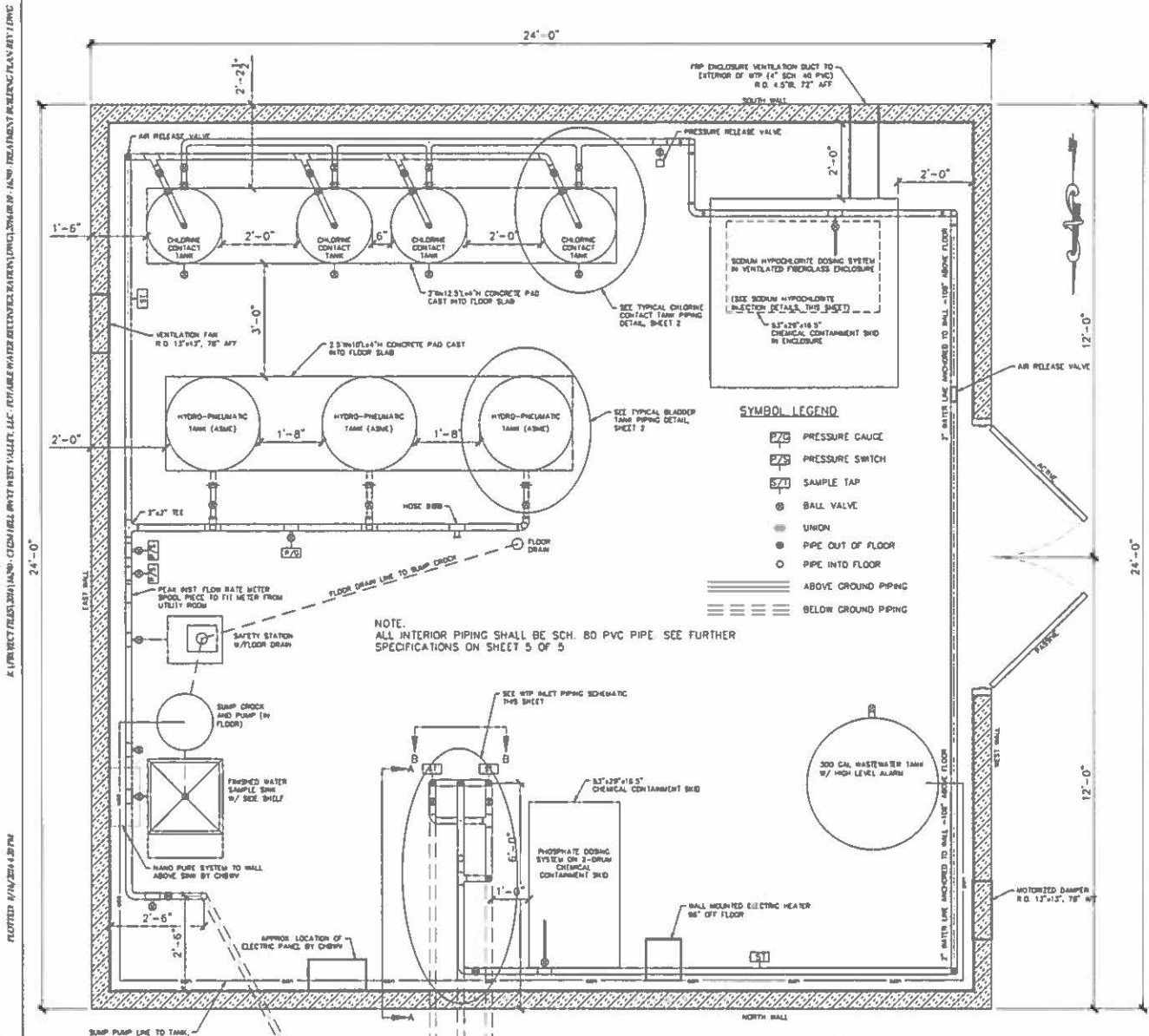
LEGEND
— CURRENTLY ACTIVE
- - - CURRENTLY ACTIVE (TO BE TAKEN OUT OF SERVICE)
— NEW CONFIGURATION
□ FACILITY W/ POTABLE WATER

DATUM HORIZONTAL = PLANT
VERTICAL = MVD 29

0' 60' 120' 180'
GRAPHIC SCALE

ENGINEERING SKETCH UNCONTROLLED DOCUMENT SEE COO ENGINEER FOR CURRENT REVISIONS		CHBWV West Valley Demonstration Project	
ORIGINATOR	SIGNATURE	DATE	SITE FACILITIES WATER SYSTEM RECONFIGURATION PLAN
REVIEWER	SIGNATURE	DATE	
SCALE AS NOTED	SYS #	SKETCH #	REV
NEXT ASSEMBLY	QUALITY LEVEL N	BY P.FINTAK	4
PLATESCALE 1=1	DATE 04/21/2018	FILENAME SKSEM042116_001.DWG	

CAD SKETCH-DO NOT REVERSE THIS ORIGINAL

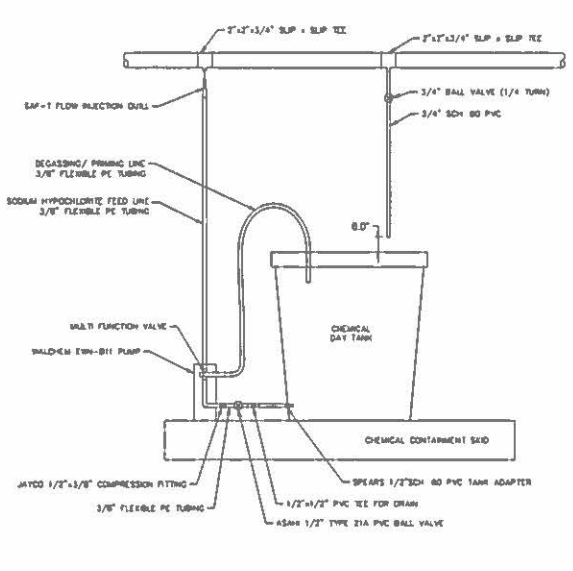


WD:2016:0369

SCHEMATIC

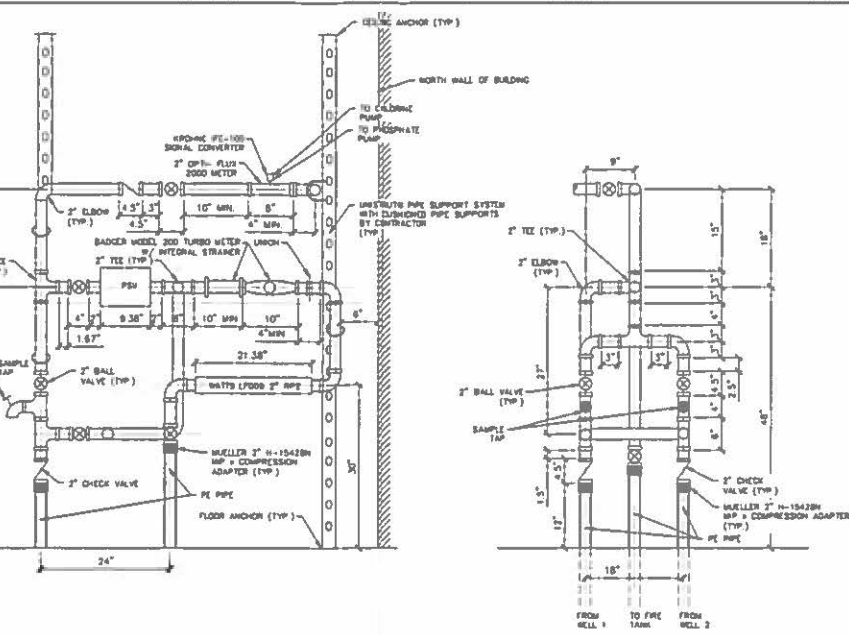
SCALE: NTS

FIGURE 3
Potable Water Reconfiguration Project



SODIUM HYPOCHLORITE INJECTION ELEVATION DETAIL

NTS

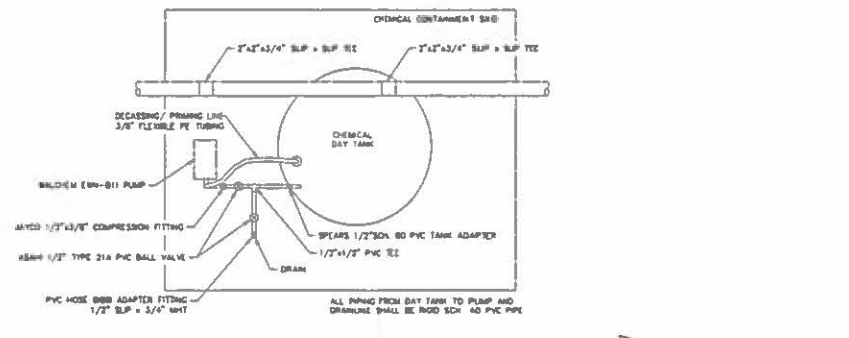


WTP INLET PIPING SIDE VIEW A-A

NTS

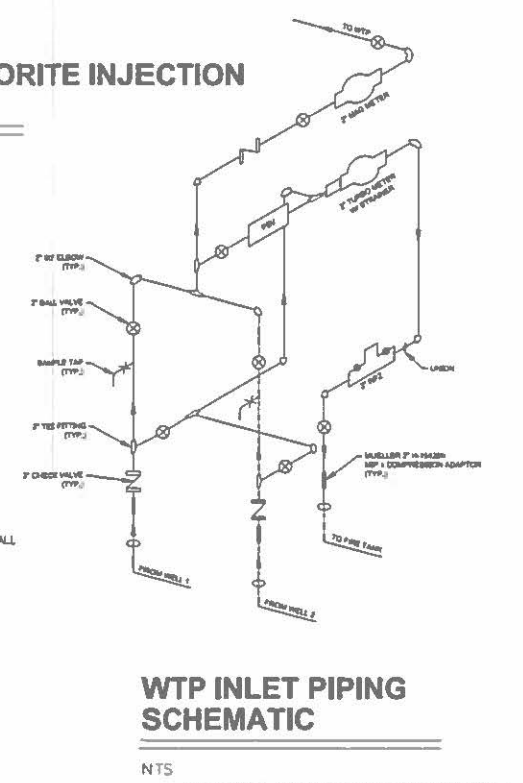
WTP INLET PIPING FRONT VIEW B-B

NTS



SODIUM HYPOCHLORITE INJECTION PLAN DETAIL

NTS



WTP INLET PIPING SCHEMATIC

NTS

DATE	
BY	
REVISION	
NO.	
<p>MDA Consulting Engineers, PLLC P.O. BOX 46 THREE BRISTOL LANE ELLICOTTVILLE, NY 14751 Phone (716) 466-4400 Fax (716) 466-4403</p>	
<p>DOCUMENT STATUS</p> <p>DATE: 08/15/2016</p> <p><input type="checkbox"/> NOT FOR CONSTRUCTION</p> <p><input type="checkbox"/> PROGRESS SET</p> <p><input type="checkbox"/> PRELIMINARY</p> <p><input checked="" type="checkbox"/> FINAL</p> <p>REVISED BY: MDA CONSULTING ENGINEERS, PLLC</p>	
<p>POTABLE WATER RECONFIGURATION PROJECT CH-004033 CH2M HILL BAYVIEW VALLEY, LLC 10082 ROCK SPRINGS ROAD WEST VALLEY, NEW YORK 14177-8789</p>	
<p>FLOOR PLAN</p>	
DATE	08/15/2016
SCALE	AS SHOWN
PROJECT NAME	WVDP - WTP
AW NO.	16290
DRAWING NO.	WTP-01
DRAWN BY	AJK/HMS
CHECKED BY	JAA
SHEET NO.	2