## **DEPARTMENT OF PUBLIC WORKS**

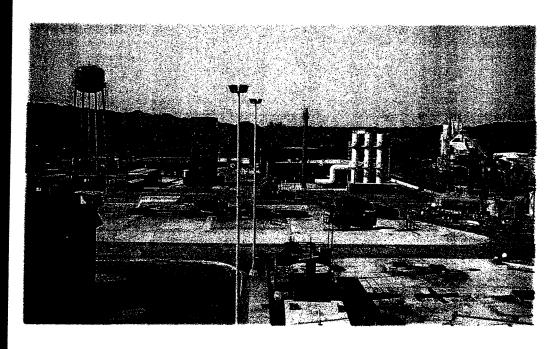
## **Nassau County**

Long Island, New York

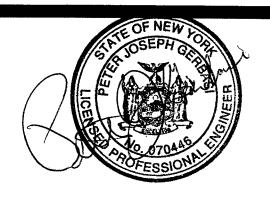


## ENGINEER'S CONSTRUCTION CERTIFICATION REPORT

**MARCH 2005** 



PETER GERBASI, P.E. COMMISSIONER



## Fireman's Training Center Groundwater Remediation Facility Engineer's Certification Report May 2004

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## **SECTION 1**

## INTRODUCTION

## 1.1 Purpose

The following Engineer's Construction Certification Report (ECCR) has been prepared for the Fireman's Training Center Site (FTC), Bethpage, New York in accordance with the New York State Department of Environmental Conservation (NYSDEC) requirements. The ECCR provides a summary of the site's remedial construction work, including lists of construction contractors, variances, change orders and a summary of the remediation facility's testing and startup.

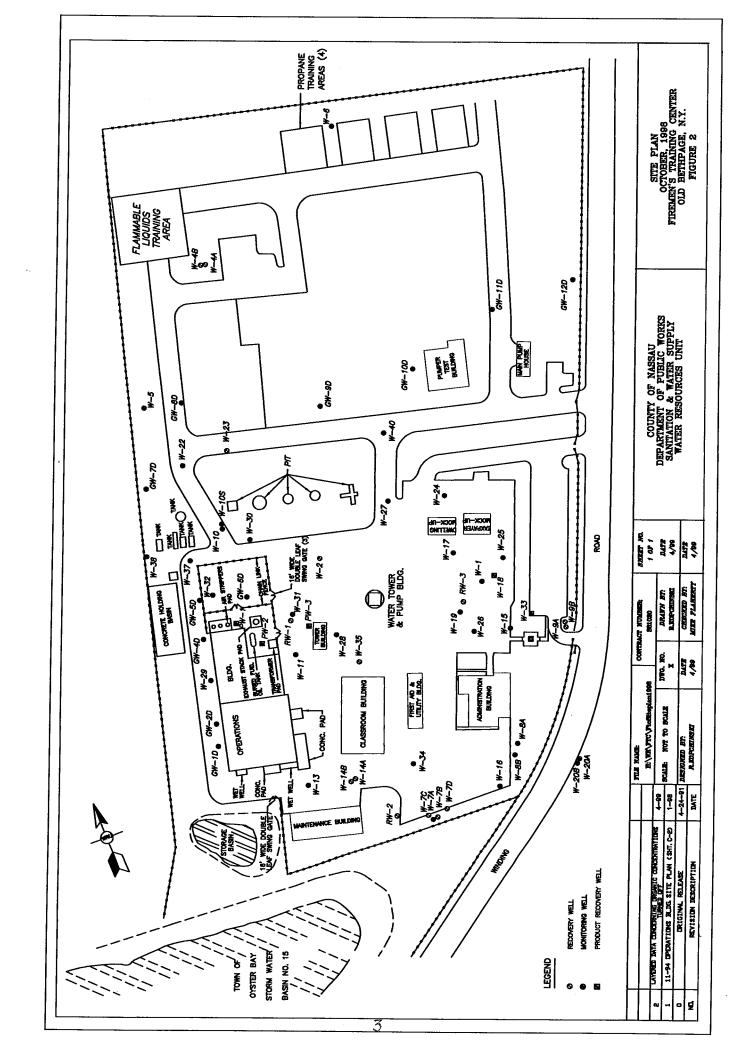
## 1.2 Site Description and History

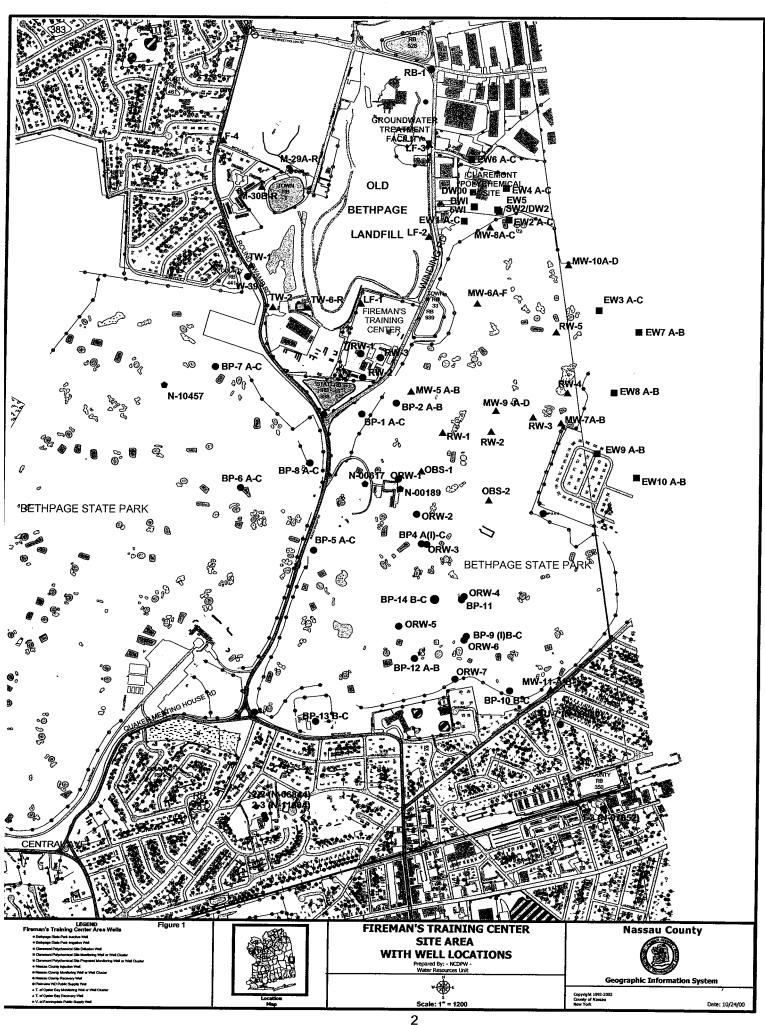
The FTC is located on a 12-acre site on Winding Road near Round Swamp Road in Old Bethpage, New York. It is bordered on the north and west by the former Old Bethpage Landfill, and on the south and east by Bethpage State Park (Figure 1). The site has been used since 1960 to conduct advanced fire fighting training for volunteer firemen, and continues today to serve these activities. Training exercises occur in open burn areas and in mock-up buildings located across the site (Figure 2).

Between 1970 and 1980, waste solvents, in addition to fuel oil and gasoline, were accepted at the site for use in training exercises. This practice was discontinued in 1980 and, since then, training exercises have been performed using only fuel oil and gasoline to ignite wooden pallets and straw.

The site contamination occurred primarily in the open burn areas, where fuel was poured directly onto the ground, and in the mock-up fields. In the mock-up buildings, unburned fuel and solvents were washed out of the buildings into drywells after each training session. These unlined drywells inadvertently served as conduits, carrying contamination down to the groundwater and contaminating the soils beneath the site.

In 1984, site improvements were made by the Nassau County Department of Public Works (NCDPW) to cap the burn areas and seal the drainage system leading to the drywells. A new drainage system was installed, including an oil/water separator to treat training site runoff. The discharge of the oil/water separator is connected to the sanitary sewer system.





## 1.2 Site Description and History (Cont.)

Based on NCDPW investigations conducted at the site, the New York State Department of Environmental Conservation (NYSDEC) added the FTC site to the State's Registry of Inactive Hazardous Waste Disposal Sites in December 1987, and upgraded the site to Class 2 level, one that poses a significant threat to the public or the environment, in March 1988. An Order of Consent was signed by the County in February 1989, requiring a Remedial Investigation/Feasibility Study (RI/FS) to be performed. The RI/FS was completed in 1992.

A record of decision (ROD) that described the remedial program for the site was subsequently approved by the NYSDEC in February 1993. The ROD called for an asphalt/concrete cap with institutional controls for shallow soils, pumping and treating on-site groundwater using three extraction wells, and pumping and treating off-site groundwater using seven extraction wells.

Camp Dresser & McKee (CDM) was the project's design consultant. CDM completed the design in October 1994. The project's construction plans and specifications went out to bid in November 1994. The November 1994 bids subsequently were rejected, due to issues concerning the contractors' responsibilities for one (1) year following the facility's startup. Revisions were made to the project's plans and specifications, limiting the contractors' role to just the facility's startup. The revised plans and specifications were re-bid in March 1995 and the construction contracts were awarded in February 1996.

## **SECTION 2**

## **Summary of Remedial Construction Work**

#### 2.1 SUMMARY OF REMEDIAL CONSTRUCTION WORK

The work generally consists of the construction of groundwater extraction, treatment, and recharge facilities at and around the Nassau County Fireman's Training Center.

The work was performed under four prime contracts:

- General Construction, Contract No. S81021G, Silverite Construction Co., Inc., Hicksville, N.Y.
- 2. <u>Heating Ventilation and Air Conditioning</u>, Contract No. S81021H, J.K.B. Contracting Inc., Hicksville, N.Y.
- 3. Plumbing, Contract No. S81021P, James McCullagh Co. Inc., Plainview, N.Y.
- 4. Electrical, Contract No. S81021E, Welsbach Electric Corp. L.I., Plainview, N.Y.

The following is a general summary of the construction work associated with the FTC Groundwater Treatment Facility:

- 1. Construction of groundwater extraction wells in Bethpage State Park (offsite) and at the Fireman's Training Center (onsite).
- 2. Construction of product recovery wells onsite.
- 3. Construction of the groundwater treatment facility. The elements of the treatment system train consist of: oil/water separation, metals precipitation, fluidized bed biological treatment, sand filtration, and air stripping of the groundwater. The treatment facility also includes equipment for sludge thickening, sludge dewatering and chemical feed systems.
- 4. Construction of an effluent discharge recharge basin and injection wells.
- 5. All site work, including site preparation, excavation, backfill, grading and site restoration.
- 6. Pumps, valves, piping and miscellaneous equipment.
- 7. Buildings, structures and facilities necessary for the complete and proper finish of the contract.

#### **2.2 GENERAL REQUIREMENTS**

### 2.2.1 On-Site Inspection

The construction phase of the project was originally managed under a construction management agreement between Lockwood, Kessler & Bartlett, Inc., Syosset, N.Y. (LKB) and Nassau County. LKB was selected based upon their experience in the engineering design, construction management, and operation of a similar remediation facility at the Town of Oyster Bay's Old Bethpage Landfill, immediately adjacent to the FTC site. LKB also had on-staff, Chemical, Mechanical, Environmental and Electrical Engineers, and survey crews, which were assigned to the project, and provided services as needed. County engineers, operators and inspectors performed the shakedown and startup of the remediation facility. The following is a summary of the project's construction management:

## Resident Engineer and Inspection Services:

- Review each bid and evaluate for completeness and accuracy.
- Prepare a health and safety plan for on-site employees.
- Ensure compliance with OSHA requirements.
- Coordinate with existing Fireman's Training Center Operations personnel.
- Coordinate with Bethpage State Park personnel.
- Perform required QA/QC material testing.
- Maintain quantities of work performed and ensure compliance with the terms of the contract.
- Prepare daily inspector reports.
- Provide a Hydro-geologist to monitor the installation of all wells.
- Prepare and review change orders.
- Schedule periodic job progress and coordination meetings.
- Settle all conflicts among various trades, conflicts with scheduling and resolving physical coordination conflicts.
- Review all applications for progress payments.

#### Submittal Review:

- Review and approve the contractor's bid breakdowns.
- Review and approve shop drawings, manufacturers technical data, and all other submittals.
- Review manufacturers' certifications.
- Review design calculations.
- Review all layout and installation drawings.
- Review progress drawings.
- Review operation and maintenance manuals.
- Review proposed deviations and substitutions.

#### Design Services:

- Review/evaluate proposed or required design changes, additions or deletions to the work.
- Perform the required engineering and design calculations.
- Prepare revised specifications and/or drawings.
- Prepare cost estimates for changes, additions or deletions.
- Witness testing as required.

#### Construction Schedule:

- Review proposed construction schedule.
- Provide a baseline schedule.
- Procurement schedule.
- Prepare schedule updates.
- Prepare a monthly cost requisition book.
- Prepare monthly progress reports and CPM updates.

#### 2.2.2 Record Drawings:

Each prime contractor was required to maintain a daily record of work installed and modifications or changes made. The contractor was required to periodically submit progress drawings during the duration of the project showing the work completed and changes made. After all work was completed, one set of paper prints of the record drawings was submitted for review and acceptance. After acceptance, the Contractors submitted the mylar reproducibles and one set of paper prints.

### 2.2.3 Construction Photographs:

The General Contractor engaged the services of an experienced photographer to take job photographs. Preliminary photographs of the site prior to commencement of work were taken as directed by the engineer.

Thereafter, photographs were taken periodically as work progressed during the construction phase of the project. These photographs indicated the view, and general description of what the photograph represents. All photographs are on file with the NCDPW – Environmental Construction Unit and are available upon request.

#### 2.2.4 Subcontractors:

#### General Contractor:

James McCullagh Co. Inc.

LaFramboise Well Drilling Inc. Well drilling

Radon Construction Corp. Pre-engineered building

Jacobson & Company Inc.

Drywall, acoustic ceiling and wall panels

Mechanical

MDS Environmental Services, Inc. Environmental testing

Donaldson Acoustics Co., Inc.

Drywall and acoustic panels

Baybrent Tile Corp. Ceramic tile

Amendola's Fence Co. Chain-line fence

PMC Rebar, Inc.

Reinforcing steel

Falco Construction Corp.

Steel sheeting

United Iron Inc. Miscellaneous metals

Eldor Contraction Corp. Instrumentation and controls

McKeon Rolling Door Co., Inc. Roll-up doors

Penn Equipment & Tool Corp.

Miscellaneous equipment and tools

D.A.G. Floors, Inc.

Resilient flooring

Industrial/Construction Services Inc. Aluminum louvers

Dalma Painting Corp.

Painting

Darling Landscaping, Inc.

Landscaping

Diamond Storefronts, Inc. Aluminum doors, windows and glazing

Truck Services, Inc. Monorail System

Stonhard, Inc. Seamless flooring

## General Contractor (Cont.)

Materials Testing Lab, Inc.

Carlo Lizza & Sons Paving Inc.

C K Steel

Independent Metal System Inc.

Hampton CF Corp.

Griffin Remediation Services

Island Inst. Systems & Controls, Inc.

RGM Liquid Waste Removal Corp.

Sign Designers of NY, Inc.

HVAC:

Aqua X Conservation Inc.

Pyramid Sheetmetal

Remi Insulation

South Shore Electric

**Code Inspections** 

Bain Industries, Inc.

Cascade Water Service

1<sup>st</sup> Purity Inc.

Electrical:

Premise Electrical Services

Ronsco Electric, Inc.

Testing

Asphalt paving

Steel erection

Erection of metal wall panels

Cured-in-place liner

Install vertical drains

Conduit for fluid beds

Removal of sediment/sludge

Signs

Install fuel oil tank

Sheetmetal/Ductwork

Insulation

Electrical work

Air balancing and testing

Boiler start-up and fuel oil tank testing

Water treatment

Water treatment

Miscellaneous electrical work

Electrical work

## **SECTION 3**

## **Description of Variances and Change Orders**

## 3.1 GENERAL CONTRACTOR - VARIANCES AND CHANGE ORDERS

## CONTRACT NO. S81021G CONTRACTOR - SILVERITE CONSTRUCTION COMPANY

<u>CO#1</u>	Provide Necessary treatment of the development water		
	associated with off site recovery wells in Bethpage State		
	Park.	\$60,328.00	
<u>CO#2</u>	Revise test boring in recharge basin, including deeper		
	borings, split spoon sampling & percolation tests.	\$26,798.00	
<u>CO#3</u>	Install three additional on-site product recovery wells.	\$161,828.00	
<u>CO#4</u>	Change size of bearing bars for pipe trench grating.	\$ 8,486.00	
<u>CO#5</u>	Modify lower platform of the air stripper towers.	\$13,523.00	
<u>CO#6</u>	(a) Replace three inch water supply piping servicing the		
	Tower Building.		
	(b) Provide Shut-off valve on new water main		
	that supplies water to the new Groundwater		
	Treatment Facility Building.	\$ 5,269.00	
<u>CO#7</u>	Modify the acid wash system.	\$89,927.00	
<u>CO#8</u>	(a) Install gate on the fence for the recharge basin		
	(b) Supply sleeves in the valve & injection well vaults		
	in the Recharge Basin.	\$ 1,956.00	
<u>CO#9</u>	Install a house trap pit for the operations building.	\$ 1,505.00	
<u>CO#</u> 10	Remove excess material & silt from the bottom of the		
	recharge basin.	\$30,474.00	
<u>CO#</u> 11	Raise off-site Recovery Well #4 & install a vertical drain.	\$ 6,188.00	

<u>CO</u> :	Remove a concrete chamber under a metal building and a	
	concrete obstruction on Winding Road.	\$ 6,717.00
<u>CO</u> #	Perform additional well development of injection wells.	\$33,240.00
<u>CO</u> #	Provide a cargo storage box.	\$ 3,300.00
<u>CO</u> #	(a) Provide additional Durrock panels & doors for the mini-cabinet heaters	
	(b) Steel reinforcing for expansion joints between the slab	
	on grade and the arch over the wet wells.	\$ 3,138.00
<u>CO#</u>	Provide hand railings for the steps at the recharge basin	
	bulkhead wall	\$ 4,726.00
<u>CO#</u>	Change stairs adjacent to the sludge thickener tank from	
	fixed construction to removable bolted construction.	\$ 7,405.00
<u>CO#</u>	Install submersible cable at three on-site wells.	\$ 4,077.00
<u>CO#</u>	(a) Provide isolation valves on chemical lines	
	(b) Provide bypass system between on site and off-site	
	piping trains.	\$ 4,855.00
<u>CO#2</u>	0 Modify sulfuric acid piping & move sulfuric acid	
	pump #5.	\$20,977.00
<u>CO#2</u>	1 Replace existing polymer suction piping with a three (3")	
	header pipe from the polymer bulk storage tanks & provide	
	three (1") vertical takeoffs from the header to each of the	
	polymer blending units.	\$ 4,877.00
<u>CO#2</u> :	2 Provide a seal water system for the air stripper	
	cleaning/recycle pump.	\$ 2,327.00
<u>CO#2</u> ;	Modify the Injection Wells for the piezometers & probes.	\$ 6,628.00
<u>CO#24</u>	Provide three schedule 80 PVC check valves on the suction	
	piping at the cleaning recycle pump in the Operations	
	Building.	\$ 1,862.00

<ul> <li>CO#26 (a) Provide three pressure relief valves on the air scour system</li> <li>(b) Four air vacuum relief valves on the flocculation tanks &amp; clarifiers.</li> <li>CO#27 (a) Provide bypass the on-site influent flow past the metal precipitation system directly to the fluidized bed,</li> <li>(b) Bypass the off-site influent flow past the</li> </ul>	\$11,891.00
<ul> <li>(b) Four air vacuum relief valves on the flocculation tanks &amp; clarifiers.</li> <li>CO#27 (a) Provide bypass the on-site influent flow past the metal precipitation system directly to the fluidized bed,</li> </ul>	\$11,891.00
CO#27 (a) Provide bypass the on-site influent flow past the metal precipitation system directly to the fluidized bed,	\$11,891.00
precipitation system directly to the fluidized bed,	
,	
(b) Bypass the off-site influent flow past the	
1	
metal precipitation system to the intermediate wet well.	
(c) Redirect the on-site flow through the off-site metal	
precipitation train & rapid mix tank to the clarifier sump.	
(d) Modify both on-site & off-site rapid mix weirs.	
(e) Provide two M-8 222/SNBP/TF/VT/VT with air exhaust	
mufflers and a Wilden surge dampener model	
NO-D2-SAP-TF-TF).	\$48,366.00
CO#28 Credit for unused portion of the contract bid items as follows:	
A) Disposal of Contaminated Excavation. (S	(\$225,000.00)
B) Incremental Cost for Work in Protection Level "C".	(\$55,000.00)
C) Cost of Sulfuric Acid during Performance Testing.	(\$56,443.62)
D) Cost of Caustic during Performance Testing.	(\$67,725.49)
E) Cost of Polymer during Performance Testing.	(\$30,950.89)
F) Cost for Nutrient during Performance Testing.	(\$ 7,120.00)
G) Cost for Sludge Disposal during Performance Testing.	(\$18,000.00)
H) Cost for Waste Oil Disposal during Performance Testing.	(\$51,000.00)
I) Patching Soil Concrete Caps.	(\$10,000.00)
J) Lab. Testing & Checking Required by Tech. Specifications.	(\$ 5,495.00)
K) Temporary Heat & Ventilation after Construction Completion.	(\$50,000.00)
L) Minority Apprenticeship Training Program. (Painter).	(\$15,000.00)
<u>Total</u> (S	\$441,735.00)
CO#29 (a) Provide an air station in the maintenance shop and	
(b) Change the pistons on Caustic Pumps #3 & #4.	\$ 5,045.00

<u>CO#30</u>	(a)	Provide bypass piping to run on-site influent through the off-site	
		metal precipitation system while off-site influent is run through	
		the bypass to the intermediate wet well.	
	(b)	Insulation on this piping and previously installed piping train	
		bypass revisions.	\$12,004.00
<u>CO#31</u>	(a)	Provide modify filter sludge piping, relocate polymer blend	
		feed pump #3 & provide additional polymer.	
	(b)	Repair three of the on-site/off-site BW level switches &	
		purchase four new BW level switches.	\$ 9,261.00
<u>CO#32</u>	Pro	vide insulation on various piping systems.	\$34,476.00
CO#33	Relo	ocate the air stripper influent water flow FIT-251-1, FIT-251-2,	
		-251-3, and the on-site infuent flow FIT-220 presssure	
		smitters from the outside to the inside of the building.	\$ 6,872.00
		Q	,
<u>CO#34</u>	(a)	Remove & replace five Barish air diaphragm pump control	
		panels and	
	(b)	Substitute non-metallic hangers & support material for the	
		specified metallic materials in the chemical storage & pump	
	,	areas.	\$ 7,080.00
<u>CO#35</u>	Perfo	orm a supplementary acceptance test of the Netzsch Sludge	
	Filte	r Press.	<u>\$ 4,436.00</u>
		<u>Total</u>	\$210,428.00
3.2 ELEC	CTRIC	CAL CONTRACTOR - VARIANCES AND CHANGE ORDERS	<u> </u>
CONTRA	<b>ACT</b> 1	NO. S81021E	
		OR - WELSBACH ELECTRIC	
<u>CO#1</u>	(a) ]	Install temperature switch in the off-site & on-site well vaults.	
	(b) 1	Provide conduit & wire for the relocated eyewash station in	
	r	room #122.	
	(c) S	Supply disconnect switches for the control & effluent valves.	\$ 5,140.00
<u>CO#2</u>	Upgra	ade panel boards DP-1, DP-1A & DP-2A.	\$12,977.00

<u>CO#3</u>	Perform electrical revisions required in the valve and injection well		
	vaults.		\$15,495.00
<u>CO#4</u>	Revise lighting fixtures in the Operations Building	<b>5</b> .	\$22,012.00
<u>CO#5</u>	Modify the electrical service.		\$48,495.00
<u>CO#6</u>	Modify the lightning protection system on the Operation Bldg.		\$ 5,068.00
PENDING CO#7 Contract Settlement. (\$169,82			
		<u>Tota</u> l	(\$60,642.59)

## 3.3 PLUMBING CONTRACTOR - VARIANCES AND CHANGE ORDERS

## CONTRACT NO. S81021P CONTRACTOR - JAMES McCULLAGH, COMPANY, INC.

- CO#1 (a) Provide a new sanitary house trap along with the necessary

  Plumbing work for a sanitary waste line located on the East side of the operations Building.
  - (b) Provide two 2" ball valves, one 2.5" ball valve and one 2.5" check valve on the piping to the emergency water storage tanks.

\$ 2,000.00

## CO#2 Credits for the unused allowance items.

- (a) Incremental cost for work in Protection Level "C".
- (b) Laboratory Testing Required by Technical Specifications.

(\$12,700.00)

Total

(\$10,700.00)

## 3.4 HVAC CONTRACTOR - VARIANCES AND CHANGE ORDERS

## CONTRACT NO. S81021H J.K.B. CONTRACTING INC.

CO#1 (a) Modify ductwork.

(b) Modify boiler ignition system.

(c) Credit for incomplete punch-list work.

(\$20,949.00)

## 3.5 PROJECT'S VARIANCES AND CHANGE ORDERS ANALYSIS

The Nassau County DPW has instituted Contract Closeout Procedures (CCP) to determine whether there have been excessive impact costs due to errors and omissions on the part of the designer, and provides a basis for cost recovery, if warranted. The CCP is a two (2) step analysis, the first step being a generic analysis of the impact costs compared to generic limit or "threshold" expected for various project sixes in dollars; the second step, performed if the first step exceeds the generic threshold, is a more detailed Project Specific Analysis.

The FTC project size, the dollar value of all contracts, was \$18,157,160, which places it on the Generic Project Threshold Table between project sizes of 3,650,000 and 24,300,000. The generic threshold percentage for the FTC project would therefore be between 2.5 % and 3.0%. A copy of the Generic Project Threshold Table for the period January 2002 and January 2004 can be found in Appendix B. The FTC project's actual cost of all change orders as a percentage of the project's total awarded cost is 0.65%. This value is well below the 2.5% - 3.0% generic threshold Limit and, therefore, indicates a project that did not have excessive change orders. As such, step 2, a Project Specific Analysis is not warranted.

	Original Contract Amount	Total Change Orders	CO % of Contract
General Contract			
	\$15,250,000.00	\$210,000.00	1.38%
HVAC Contract			
	\$595,000.00	(\$20,949.00)	N/A*
Plumbing Contract			
	\$324,670.00	(\$10,700.00)	N/A*
Electrical Contract			
	\$1,988,000.00	(\$61,392.90)	N/A*
TOTAL			
	\$18,157,670.00	\$117,386.10	0.65%

<sup>\*</sup> Total amount of Change Orders resulted in no increase to the cost of the prime contractor's original awarded contract cost.

## **SECTION 4**

## System Testing and Startup

## 4.1 DESCRIPTION OF GROUNDWATER TREATMENT SYSTEM

The Fireman's Training Center Groundwater Remediation Facility (FTCGRF) was constructed to extract groundwater from three (3) onsite and seven (7) offsite recovery wells, treat the water to meet the State's required standards, and discharge the treated water to a County recharge basin and/or three groundwater injection wells. The treatment plant was constructed for a maximum combined influent flow of 2.6 million gallons per day (mgd) or 1800 gallons per minute (gpm). The offsite recovery well network provides a maximum influent flow of 1500 gpm. The onsite recovery well network provides a maximum influent flow of 300 gpm.

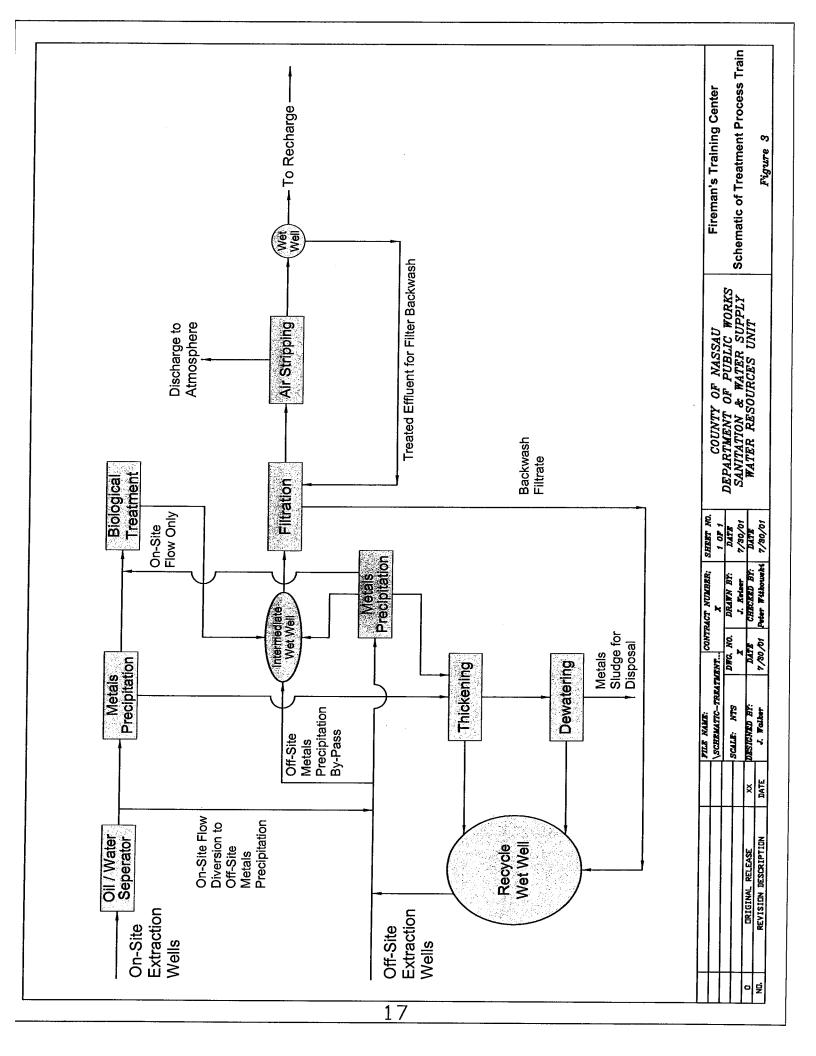
In accordance with the State's Record of Decision (ROD), the treatment process consists primarily of air stripping the groundwater. Oil/water separation, metals removal and sand filtration prior to the air strippers to optimize the stripping process and to enable the eventual recharge of the treated effluent back to the groundwater system. Biological destruction of certain organic compounds had been proven by a past pilot study to be more efficient than air stripping, thus a biologic fluidized bed unit was installed on the onsite treatment train. The entire treatment process system is presented in schematic form in Figure 3.

## 4.2 ON-SITE TREATMENT SYSTEM TESTING AND STARTUP

In order to simulate an on-site flow of 300 gpm, a temporary bypass was installed. Piping was dis-assembled on the influent side of the oil/water separator and the Venturi flowmeter along with the instrumentation tubing was reinstalled and situated as to allow proper function of simulated flow rates through the temporary bypass pump and piping.

Upon completion of the above, simulated flow rates of 100, 200 and 300 gpm's were tested. During the tests all floats and modulation float valves were assessed. Upon the on-site Engineer's request, float elevations were modified, as needed. Any fine-tuning of modulating valves #V-226-2 and V-237-2 was also done.

All rotating devices such as augers and mixers were run during this procedure for a total of 8 hours each. Variable speeds for mixers were demonstrated for a one-day period.



The Fluidized Bed - GAC system was run and monitored by an onsite factory representative. All required readings for the system's pumps, gauges and oxygen generation equipment were recorded. The on-site influent pumps and fluidized bed pumps were all yellow-tagged in accordance with their respective pump curves.

#### 4.3 OFF-SITE TREATMENT SYSTEMS TESTING AND STARTUP

The off-site treatment system is similar to the on-site system with the exception of the fluidized bed system. In order to simulate an off-site treatment system flow, all tanks, vessels along with the recycle, intermediate, effluent and clear wells were filled with water to normal operating levels.

The following flow sequence took place. The recycle well submersible pumps #1 and 2 were on at the same time. Water was pumped to the off-site influent piping, through the metals precipitation system then discharged into the intermediate wet well. At that time all rotating devices (augers/mixers) were operated at their various expected speeds. Three of the four intermediate vertical turbine pumps were pumped at approximately 2,040 gpm through two of the three dual media sand filters. Flow from the sand filters then proceeded via a common 12" header pipe to the system's three air stripping units. Following air stripping water was discharged into the clear wells beneath each stripping tower and then flowed by gravity to a common effluent wet well.

To begin testing, one (1) effluent pump pumped water from the effluent wet well at approximately 1,800 gpm; 480 gpm was diverted to the recycle wet well to compensate for lost water and the balance bypassed to the intermediate wet well to complete a closed loop. Throttling of valves was needed to maintain equal flow rates of various pumps.

At this time, any adjustments of floats, surge relief valves, modulating valves and instrumentation was done, as requested by the Field Engineer. After all field adjustments were made a backwash sequence of the dual media sand filters was completed. The entire offsite treatment train was operated as a complete system for 8 hours.

#### 4.4 ON-SITE/OFF-SITE SLUDGE SYSTEMS

Air operated diaphragm pumps are used for the removal, transfer and recirculation of on-site and off-site sludge. These pumps operate in a wide range of flows. However, the systems had to wait for the generation of a sufficient volume of sludge to be tested. The same was true for the filter press and the sludge thickener; their testing would be done once a sufficient volume of sludge was generated.

Due to the low generation of sludge at the FTC facility, it was determined that another source of iron sludge was needed to complete the testing and acceptance of the sludge treatment systems. The County was involved in another groundwater remediation, the Purex Site in Mitchel Field. The Purex Site was similar to the FTC Site in that both required treatment of volatile organics in the groundwater and both sites needed to address naturally existing iron, as a byproduct. Therefore, with State approval, on October 3, 2001, the County had transported 3,600 gallons of iron sludge from the Purex Site to the FTC facility. After several filter press runs, the FTC filter press performed as specified in the contract documents, and was accepted by the County. A more detailed description of these tests, along with approval letters can be found in Appendix D.

## **SECTION 5**

## **Construction Schedule Narrative**

The NCFTC project specified that the County would retain and pay for a Critical Path Method (CPM) consultant to assist the contractors in the preparation of a detailed working plan and schedule, and in subsequent updates. Lockwood, Kessler & Bartlett, Inc., (LKB) was the construction manager for the County on the NCFTC project. LKB utilized James R. Beach & Associates, Inc., as their sub-consultant to perform the construction scheduling services for the project.

The only specified milestone was the completion and testing of the treatment facility required to start treatment of existing groundwater contamination. The notice to proceed, original contract completion date and date of beneficial occupancy date were as follows:

Notice to Proceed April 1, 1996

Original Contract Completion Date April 1, 1998

Date of Beneficial Occupancy July 16, 1999

During the first months of the project, through the end of 1996, there were minimal delays associated with two identified critical paths, the trenching work in Bethpage State Park and the construction of the treatment building's slab.

The schedule updates during the first quarter of 1997 indicated a third critical path impacting the completion date. The delivery of the local control panels (LCP), installation of conduit, wire pulling and terminations started to impact the schedule. Delays associated with the trenching work in the park and the completion of the building panels also impacted the schedule. As of March 31, 1997 the projected completion date was June 17, 1998, 55 days behind schedule.

By the end of the 2<sup>nd</sup> quarter of 1997, the CPM report indicated the project was back on schedule due to the electrical prime contractor agreeing to reduce his schedule durations for wiring and termination activities that follow the LCP delivery. All major mechanical equipment had been delivered with the exception of the air stripper equipment and the vertical turbine pumps. The critical path at that time was the delivery of the LCP's.

The schedule slipped in the 3<sup>rd</sup> quarter of 1997, due to delays in installation of instrumentation and control (I&C) devices and LCP software development. The ability of the general contractor's instrumentation subcontractor (ANVIC) to complete the loop diagrams and development of software had become a major concern. As of September 30, 1997, the projected completion was June 3, 1998, 63 calendar days behind schedule.

The schedule continued to slip in the 4<sup>th</sup> quarter of 1997, due to delays in installation of field instruments & control (I&C) devices, loop diagrams/wiring diagrams and LCP software development. As of January 8, 1998, the projected completion date was August 3, 1998, 125 calendar days behind schedule.

The schedule continued to slip in the 1st quarter of 1998, due to delays in the completion of wiring diagrams, interconnection diagrams, installation of conduit, wiring, and terminations followed by startup and testing. As of March 31, 1998, the projected completion date was August 10, 1998, 132 calendar days behind schedule.

Lockwood, Kessler & Bartlett, Inc., (LKB), and their sub-consultant, James R. Beach & Associates, Inc., ceased all engineering services associated with the project as of May 8, 1998. Thereafter, the County's in-house scheduler updated the project schedule.

The project's critical path continued to be the completion of wire pulling and terminations required prior to startup testing, and the performance of the 30-day test. As of July 13, 1998, the projected completion date was October 22, 1998, 204 calendar days behind schedule.

During the 3<sup>rd</sup> quarter of 1998 the project's critical path was associated with coordination and completion of the yellow and blue tag testing of equipment and control instrumentation. Slippage of the schedule continued throughout this quarter. As of September 17, 1998, the projected completion date was December 1, 1998, 244 calendar days behind schedule.

Delays continued during the 4<sup>th</sup> quarter of 1998. The critical path was associated with the completion of blue tag testing and system start up testing. As of January 15, 1999 the projected completion date was March 29, 1999, which was 362 calendar days behind schedule.

During the 1<sup>st</sup> quarter of 1999 the contractors continued operational training of County personnel and submission of Operation and Maintenance (O&M) Manuals. Preliminary operation of the on-site and off-site treatment system had commenced. The Envirex fluidized bed was seeded the week of April 26, 1999, with the 30-day operational test to follow. An incomplete work list/punch list called the "open items list" was being utilized at this time to track the status of all incomplete work, shop drawing submittals, O&M manuals, As-built drawings training etc.

By June of 1999, all the components necessary to schedule the 30-day operational test were in place. The schedule indicated a completion date of July 13, 1999 as the completion date of the test. The actual completion date of the 30-day test was July 16, 1999. At the completion of the 30-day testing period the County accepted the building for beneficial use and began operating the treatment facility.

After the completion of the 30-day test, and the facility was being operated by County personnel, no further CPM updates were performed. Bi-monthly meetings continued to be held during the closeout period, wherein the open items list was updated, to track the status of all outstanding work until it was complete. The open item list tracked all submittals, as-built drawings and O&M's until they were approved. Additionally, it tracked change order processing, spare part transmittal, training and punch list work.

Certificates of completion were issued after all outstanding issues were resolved and the contract specified two (2) year maintenance and guarantee period was completed. The dates of completion were as follows:

Plumbing Prime - Certificate of Completion - accepted as of January 5, 2001. Electrical Prime - Certificate of Completion - accepted as of April 15, 2002. HVAC Prime - Certificate of Completion - accepted as of July 1, 2002. General Contractor - Certificate of Completion - accepted as of December 22, 2003. While a significant period of time elapsed between the Date of Beneficial Occupancy, July 16, 1999 and issuance of the final Certificate of Completion, December 22, 2003, the work was substantially complete. All major equipment items and building systems were installed and operational, only Punch List items and administrative issues remained. These items were addressed at a deliberate pace to ensure a satisfactory outcome. The County continued to operate the facility during this time period, therefore, the groundwater remediation was not impacted.

## APPENDIX A



## COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS

1194 Prospect Avenue Westbury, NY 11590-2723

March 30, 2005

New York State Department of Environmental Conservation Division of Environmental Remediation Bureau of Remedial Construction 625 Broadway Albany, NY 12233

Re: NCFTC - Site No. 1-30-042

Engineer's Construction Certification Report

As – Built Drawing Certification

#### Gentlemen:

This Department has supervised and inspected the construction of Fireman's Training Center Groundwater Remediation Facility in Old Bethpage, New York. All prime contractors were required by General Condition 36 (GC36) of each contract to submit Record Drawings As-Built, however, GC36 did not obligate the contractors to provide Professional Engineer certification of the Record Drawings.

The Record Drawings As-Built have been previously submitted as Appendix A to the Engineer's Construction Certification Report. Members of my staff have reviewed these drawings and found them to be a true an accurate record of the work as constructed

P.E. Stamp

If you have any questions, please contact Mr. Peter J. Witkowski at (516) 571-6970.

Very traly yours,

Commissioner of Public Works

PJG:PJW:cs

c: Joseph L. Davenport, Deputy Commissioner

Kenneth G. Arnold Joseph N. Walker

Ed Visone, Environmental Construction

## PLEASE SEE ATTACHED RECORD DRAWINGS

## APPENDIX B

# GENERAL CONTRACTOR CHANGE ORDERS

CALITAL CONTRACT CHANGE CADER COUNTY OF NASSAU, NY S&WS/ DMP DATE OF ADVISEMENT FUND TRANSACTION CODE DEPARTMENT CONTRACT NUMBER C.A.P **CNTM** PW 81 221G VENDOR IDENTIFICATION: SILVERITE CONSTRUCTION 11-2098433 UNE PROJECT IO: COST CHANGE ORDER # DESCRIPTION: AREA Fireman's Training Center PROJECT ØØØ Groundwater Treatment Facility 8.1. ORIGINAL BID AMOUNT PREVIOUS REVISIONS: THIS REVISION: REVISED AMOUNT: \$15,250,000.00 Ø.ØØ  $\bigcirc \cdot \bigcirc \cdot$ +\$60,328.00 \$15,310,328.00 NATURE OF CHANGE: Additional labor and material to provide the neccessary treatment of the development water associated with the offsite recovery wells in Bethpage State Park. \$60,328.00 Cost this Revision G-2 W. CONTRACTOR: GRANT NUMBER: SEE ATTACHMENTS (MApplicable) BY: 8102160 4-14-97 COMPTROLLER'S CERTIFICATION: **CERTIFICATE OF** TITLE: DATE ACCEPTANCE RECOMMENDED I hereby certify that an unencumbered INTO NUMIS COMMISSIONER D DATE FORM APPROVED: certify that this document

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1 8,1 0,2	GROUP		irtundwater Treat Ereman's Train	m <mark>ent Faci</mark> g <del>Center</del>	lities
\$15,250,00 Q.00	+\$412,999.00	CIRCLE	\$33,240.00		\$15,696,239.00
NATURE OF CHANGE:			0001210.00		
MAY 1   ESIIverile Construction	998 (2)	and mater	ial to perform a jection Wells.	dditional	
File Dip. Accting Prit Mot Por Plaid AS, FC, BG Adirekt		besse 1	الإلي و Levision ((((((((((((((((((((((((((((((((((((		G 11
(1)		<del></del>		GRANT NUN	
CONTRACTOR: CALVER	TIPE CELICIP		SEE ATTACHMENTS	(I Application)	iden.
VICE PERSIDICA	27 4-14-40°		S/O2   OMPTROLLER'S CER	TIFICATION	OERTIFICATE OF
TITLE:	DATE		I hereby certify that an unencu		ACCEPTANCE
Son Track	4/17 KA	1	Dananes sufficient to curver this		INTO NUMIS
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COUNTYATTORNEY	DATE	18	COUNTY COMPT	ROLLER	Ldelimen
In cent (	3_ 5/1/91		Total 4 /2/20		Nation 7 1GW
OUNTY EXECUTIVE	DATE	1	Dete:		- 1 to 1 / Ta-

NUMS 551 & -

CO-880, 8/91 REV. 10/94

THE CONTRACTOR

	JONIK	ACT CHANG TORL	VEK . S&	WS/DMP
DATE OF ADVISEMBLY Q P C A P TRANSACTION COO		NITAA	DEPARTMENT	CONTRACT NUMBER
VENOOR NUME:		NTM	PW	81021
SILVERITE CONSTRUCTION C			11-2098433	
LINE PROJECT ID: COST OBJ	CHANGE ORDER #	DESCRIPTION:	11=2030433	
1 8 1 0 2 1 4 000	14	Fireman's Trainin	a Center	
ORIGINAL BID AMOUNT PREVIOUS REVISIONS:	LWAK AP	THIS REVISION:	<del></del>	ISED AHOUNT:
\$15,250,000.00 +\$446,239.00	O - G	<u>.                                    </u>	- 1	5,699,539.00
NATURE OF CHANGE:		Ψ,,ορρ.μρ		. · · · ·
Additional labor	and mat	erial to provide a c	cargo	
storage box at Fi Water Treatment F	ireman's	Training Center Gro	ound	
waser it eacherte i	aciiii	•		
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	(\$3,3	BØØ.ØØ )		
		this Revision		
				G-18
CONTRACTOR:			RANT NUMBER:	
CONTRACTOR: SILVERITE CONSTR.		SEE ATTACHMENTS	tobicapie)	
BY: Frank Chiodo		810216 6	<del>'</del>	05071510175
TITLE: DATE		COMPTRÖLLER'S CERTIF	-ICATION:	CERTIFICATE OF
RECOMMENDED: W		I hereby certify that an unencumbe	//	ACCEPTANCE
J28/98		belance sufficient to cover this co		INTO NUMIS
COMMISSIONER DEVI DATE		present in the appropriation to be	Charlest.	1
EOKM APPROYED:		Name:	an	l sedify that this document was accepted into
COUNTY ATTORNEY				NUMIS
APPROVED: //OC/		COUNTY COMPTROI	LLER	de dolimeno
Tobut ( Wa Glicker	- 1	This: 6 /4 /48		Name:
COUNTY EXECUTIVE DATE		Date: ////		4/8/98
1UMIS 551 a			· · · · · · · · · · · · · · · · · · ·	COAM AND REV 10/5

DATE OF ADVICEMENT AT FUNC TRANSACTION COOSE			WS / DMP
CAP TIC.	CNTM	PW	8 1 0 2 1 0
SILVERITE CONSTRUCTION +	VENDOR IDENTIFICATION:	11-2098433	
UNE # PROJECT ID: COST OBJ CHAN AREA PROJECT GROUP ORDES	GE DESCRIPTION		
1 8 1 0 2 1 4 ØØØ 15	ì	ning Center	
	MAK APPRO THIS REVISION:		ED AMOUNT;
	\$3,138.00		5,7Ø2,677.ØØ
NATURE OF CHANGE:			•
Additional labor and	material for the follow	ing extra	
work at Fireman's Tra			
1. Provide additiona mini-cabinet heat	l Durrock panels and do	ors for the	
2. Steel reinforcing	for the expansion join	ts batwaan	
the slab on grade	and the arch over the	wet wells.	
·			
(\$:	3,138.00		
	Coa this Kerlsion		
			G-16,G-20
CONTRACTOR:		RANT NUMBER:	
BY: Frank (hisele	810216	<u> </u>	
TITLE: VIC. PPEC 6/8/92	COMPTROLLER'S CERTIF	CATION:	CERTIFICATE OF
RECOMMENDED:	I hereby certify that an unencumbe	rod	ACCEPTANCE
Jat Stang 6/16/98	belance spfficient to cover this cor		INTO NUMIS
COMMISSIONER, DPW DATE ORMADPROVED:	present in the appropriation to be		
all I What to be	Name:	10	certify that this document was accepted into NUMS.
COUNTY ATTORNEY DATE	COUNTY COMPTROL	LER	L'holimus
UPROVED:	Title:		X-SHUNGE Name:
OUNTY EXECUTIVE 7/11/51	1/6/58		7/3/98
DATE	Dole: / 7	I.	

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S&WS/ DMP

CO-680, 8/91 REV. 1 Q/S

COUNTY OF NASSA	U, NY ,	ITALOU	MILM	OF OHANS ON	S&	:WS/ DMP
DATE OF ADVISENENT	7 d (7 l l	ANSACTION COOE	$C_{\mathbf{N}}$	 ITM	DVV	8 1 0 2 1
VENOOR NUME:	M. C. A.P.			R IDENTIFICATION:	<u>J PW</u>	المستوري
1	ILVERITE CONSTRI	JCTION	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	VF _	11-2098433	
LINE PROJECT IO	COST	· · · · · · · · · · · · · · · · · · ·	NGE C	ESCRIPTION:		
1 8 1 8 1	0 2· 1 4	ØØØ 10	i	Fireman's Trainin	g Center	
ORIGINAL BID AMOUNT	PREVIOUS REVISION	\$:	MAK APPRO	THIS REVISION:	RE	NSED AMOUNT:
\$15,250,000	+\$452,677	7.00	0.0	\$4,726.00	\$1	5,7Ø7,4Ø3.ØØ
NATURE OF CHA	NGE:					•
·	for the wall fo	steps at e r the Firem t Facility	ach en an's T Projec	erial to provide had of the recharge braining Facility Grant.	basin bulkh	gs nead
CONTRACTOR:  BY:  VIC.  TITLE:  RECOMMENDED:  COMMISSIONER, DE  FORMAPPROVED:  COUNTY ATTORNEY  APPROVED:  COUNTY EXECUTIVE  MUMIS 551 a	Petri 1	DATE DATE		SEE ATTACHMENTS  8 1 0 2 1 G-C  COMPTROLLER'S CERT  I hereby certify that an unencumb belance sufficient to cover this o  present in the appropriation of b  Rame:  COUNTY COMPTRO  Title:  7 23 3 6  Date:	Pontract to	G-19  CERTIFICATE O ACCEPTANCE INTO NUMIS  Loerlify that this docur was accepted into NUMES.  Name:  Date:  CO-650, 801 REV. ]

- COUNTY OF NASSAU, HY UN TIA	L CUNTRACT CHANGE	DER S&WS/DMP SCN
OLT 21 98 C.A.P. TRUSSICTION	CNTM	PW 8 1 0 2 1 G
SILVERITE CONSTRUCT	VENDOR IDENTIFICATION: TION VF	11-2098433
UNE PROJECT D. COST OBJ	CHANGE DESCRIPTION:	
ORIGINAL BID AMOUNT PREVIOUS REVISIONS:		aining Center
\$15,250,000.00 +\$457,403.0	THIS REVISION:  50 \$7,405.00	REVISED AMOUNT: \$15,714,808.00
NATURE OF CHANGE:		
adjacent to the	r and material to chang sludge thickener tank removable bolted const	from fixed
<b>9</b>		G-5
CONTRACTOR: SILVEPITE CONSTR. CO	LUC SEE ATTACHMENTS	GRANT NUMBER: (X Applicable)
BY: Frank Chroso VIC. PRES - 2/13/90 TITLE:	COMPTROLLER'S CEI	RTIFICATION: CERTIFICATE OF
(RECOMPLENDED: 1)	I hereby certify that an unenc	numbered ACCEPTANCE
COMMISSIONER OPW CM	balance sufficient to cover the proportion of the appropriation	
FORM SPROVED: The Transfer of	pedwef /10	certify that this document was accepted into
COUNTY ATTORNEY DATE	Name: / / COUNTY COMPT	ROLLER L. Apluser
APPROVED:  OUNTY EXECUTIVE  APPROVED:  OUNTY EXECUTIVE	THIS: 8/6/9/	Name: 8/4/38
UMIS 561 a	Date:	Date:

COMPANIES  SILVERITE CONSTRUCTION  USE PROJECT O. COST ON ON ON ONE OF ONCOME OF ONCOME OF ONCOME ON ON ONCOME ON ON	- Lawre	1 OF 1173370, 111	<del></del>	-		11111	ACT CHANGE	ZUEN	S&1	WS / DMP
SILVERITE CONSTRUCTION  UNE   PROJECT   ORDER   ORDER   ORDER   ORDER   ORDER	\$ 8	1.4.9.8	/ 1		WASACTION		NTM	T	DEPARTMENT	CONTRACT MUMBER 8 1 0 2 1 G
Additional labor and material to install submersible cable at three on-site wells.  Additional labor and material to install submersible cable at three on-site wells.  Additional labor and material to install submersible cable at three on-site wells.  St. 977.08  St. 977.08  SEE ATTACHMENTS GRANT NUMBER:  W.C. V. S. C. V. S.		SILVER	ITE CO	NSTRU	CTION	ΦV		11-	2098433	
Additional labor and material to install submersible cable at three on-site wells.  Additional labor and material to install submersible cable at three on-site wells.  Additional labor and material to install submersible cable at three on-site wells.  St. 4,877.88  St. 718,885.88  Additional labor and material to install submersible cable at three on-site wells.  CONTRACTOR: SILVERITE CENSTS  YE FOLLOW ST. 100  COMPTROLLER THEOLOGY BY SEE ATTACHMENTS  STRANT NUMBER: TARGETS  THE OAKE  LOCAL TRES  DATE  COMPTROLLER  Name:  COUNTY COMPTROLLER  This:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  This:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  This:  COUNTY COMPTROLLER  This:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  This:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Date  COUNTY COMPTROLLER  Date  COUNTY COMPTROLLER  Date	1	AREA PROJ		GROUP		ORDER #				
\$15,259,000.00 +\$464,808.00 \$34,077.00 \$15,718,885.00 \$Additional labor and material to install submersible cable at three on-site wells.  Additional labor and material to install submersible cable at three on-site wells.  \$4,077.00 \$34,077.0	ORIGINAL				1			ining Co	enter	
Additional labor and material to install submersible cable at three on-site wells.  S4,977.00  S4,977.00  S4,977.00  S4,977.00  S4,977.00  Corrective Revision  Corrective Revision  SEE ATTACHMENTS  GRANT NUMBER  RAPPHAN  TO DATE  COMPTROLLER SETHICATION:  COUNTY COMPTROLLER  Name:  COUNTY COMPTROLLER  Titis:  COUNTY COMPTROLLER  Date  COUNTY COMPTROLLER  Dat	j		ı			CIAC	61 d77 dd		í	
Cable at three on-site wells.  \$4,077.00  \$4,077.00  \$500 dis Revision   Security   Secu	NATUR	RE OF CHANGE:	·		<del></del>	10.1	9 -		\$13	5,/18,885.00
CONTRACTOR: SIL VEIZITE CENSTE  Y: FRUITE  COMPTROLLER'S CERTIFICATION:  CERTIFICATE OF  COMPTROLLER'S CERTIFICATION:  CERTIFICATE OF  COMPTROLLER'S CERTIFICATION:  Liberally certify that an unencumbered of the control is control is control is certify that this document was societed into NUMS.  COMPTROLLER'S CERTIFICATION:  CERTIFICATE OF  ACCEPTANCE  Into NUMIS  DIATE  COUNTY COMPTROLLER  Title:  COUNTY COMPTROLLER  Title:  COUNTY COMPTROLLER  Title:  COUNTY COMPTROLLER  Date:  COUNTY COMPTROLLER  DAT			Add cab	lition ole at	al labo	or and ma	terial to install wells.	submer	sible	-
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ECOMMENDED:    Commended   Com	BY: 1/2	VIC PIZZO	<u> </u>	'acc	0 12/00		810216	<b>.</b>		CERTISIA
balance sufficient to cover this control is  INTO NUMIS  INTO NUMI	TILE:		<i>A</i>		DATE				TION:	
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DATE Date:	PROVED	ryl Petr	:	<u> </u>	15/97		Title:	HOLLER	_	A. Arliniar Name:
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VENDOR	_	RITE C	ONSTRU	JCTION	VĐ	1009 ЮЕНТІРІСАТОН. VF	11-2098433	
1	PROJECT ID:  AREA PROJECT ID:  8,1 0,2	иєст 2 <u>1</u>	COST GROUP	QQQ oen	CHANGE ORDER	DESCRIPTION: Fireman's Trainin	g Center	
	BID AMOUNT 250,000.00	ł	s revisions 468,88		MAKAP CIRCI	*		0 AMOUNT: 723,740.00

Additional labor and material to perform extra work at the Fireman's Training Facility Groundwater Treatment Facility Project as follows:

- 1) Provide isolation valves on all chemical lines at points of entry and discharge.
- 2) Provide a bypass system between the on-site &off-site piping trains.

\$4,855.00 Cost this Revision

		i	G-24,25
	CONTRACTOR:  LEVERITE COUSTR. CO  BY: Fronk (hands	SEE ATTACHMENTS GRANT NUMBER:	
	TITLE: PRES 9/8/98	8/02/6- W COMPTROLLER'S CERTIFICATION:	CERTIFICATE OF
	RECOMMENDED	I hereby certify that an unencumbered	ACCEPTANCE
$\sim$	COMMISSIONER, DPW 7/4/98	belance sufficient to cover this contract is  present in the appropriation to by the need.	INTO NUMIS
A	EDEMAPPROVED:  A What Mulle Water 9/20198	Meddeffast Name:	I certify that this document was accepted into NUMS.
Bepy	COUNTY ATTORNEY	COUNTY COMPTROLLER	L. Soliner
• •	COUNTY EXECUTIVE DATE	Title: 9/28/97 Date:	Name:  9/25798  Date:
	NUMIS 551 a	1	CO-000 A/OLDEV 10/C

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or Le of vonsement 98	C A P	VASACTION COOK		NTM	2	PW1ment	8 CONTRACT HUMBER
VENOOR HAME:			VÐV	OOR IDENTIFICATION:			L.L.L.L.L
SILVER	ITE CONSTRU	CTION		VF	11-20	00/133	
UNE PROJECT ID.	COST		CHANGE	DESCRIPTION:	11-20	98433	
AREA PROJECT		<b>,</b> ,	ORDER #				
1 81 0 2		ØØØ	20	Fireman's Tra	ining Ce	nter	
ORIGINAL BID AMOUNT	PREVIOUS REVISIONS:		WAK APP				
\$15,250,000.00	_+\$473,74ø	αα	CHCLE			9	D AMOUNT:
NATURE OF CHANGE:	- <del>+ + + + + + + + + + + + + + + + + + +</del>	. ψψ	0-16	\$2Ø,977.ØØ		\$15,	744,717.ØØ
	Piping and	move siri	szø,s	rial to modify the cid pump number Ground Treatment	five st	4 L -	cions
CONTRACTOR							
CONTRACTOR:  BY:  TITLE:  RECOMMENDED  COUNTY ATTORNEY  COUNTY EXECUTIVE	CANOR	12/98 12/98 16/9/	5 7	SEE ATTACHMENTS  8 1021 (-4 0MPTROLLER'S CER I hereby certify that an unencu- balance sufficient to cover the prepent in the appropriation to Name:  COUNTY COMPTE	mbored  contract to  thanged.	N:	G-22  CERTIFICATE OF  ACCEPTANCE  INTO NUMIS  Titly that this document was excepted into NUMIS.  NUMIS.  JUNIORES

Ca. Visore

CAPITAL CONTRACT CHANGE ORDER	S&WS/dmp
VENDOR NAME:  TRANSACTION CODE  CNTM  DEPARTME  P\A	ENT CONTRACT AUTOS
SILVERITE CONSTRUCTION VENDOR IDENTIFICATION. 11-2098433	
AREA O PROJECT GROUP OBJ CHANGE ORDER DESCRIPTION:  ORIGINAL BIO AMOUNT PREVIOUS REVISIONS  OBJ CHANGE ORDER DESCRIPTION:  Fireman's Training Center	
\$15,250,000.00 +\$494,717.00 CIRCLE THIS REVISION:	REVISED AMOUNT:
NATURE OF CHANGE: 54,877.00	\$15,749,594.00
Additional labor and material to replace the existing polymer suction piping with a solution of the polymer bulk storage tanks, and provide three one (1) inches takeoffs from the header to each of the polymer blending units.	three inch h vertical
	-
Cost this Revision	
CONTRACTOR:	G-29
BY: SEE ATTACHMENTS GRANT NUMBER:	
TITLE:  COMPTROLLER'S CERTIFICATION:  THE CONTINUE OF THE COMPTROLLER'S CERTIFICATION:  THE CONTINUE OF THE COMPTROLLER'S CERTIFICATION:	CERTIFICATE OF
I hereby certify that an unencumbered  balance sufficient to cover this pointract lay  possent of the appropriation to be changed.	ACCEPTANCE INTO NUMIS
MATORNES 12/3/98 Name:	I certify that this document was accepted into NUMIS.
PPROVED:  COUNTY COMPTROLLER  Title:  OUNTY EXECUTIVE  DATE  COUNTY COMPTROLLER  Title:  / 4 6/87	A. Advanz
DATE Date:	Date: CO-680, 8/91; REV. 10/94

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COUNTY OF NASSAU, NY			CT CHANGE O	RDER	S	&WS/dmp
DATE OF ADVISEMENT 2 98 VENDOR NAME:	CAP	CN	TM		WIMENT W	CONTRACT NUMBER 8 1 0 2 1 G
SILVER	ITE CONSTRUCTION	VENDOR	IDENTIFICATION: VF	11-2098433		
LINE # PROJECTIO:  AREA 0 PROJECTION	ØØØ	CHANGE ORDER # 22	ESCRIPTION: Fireman's Trainin	g Center		
S15,250,000.00	PREVIOUS REVISIONS: +\$499,594.00	MARKAPPRO CIRCLE	THIS REVISION: \$2,327.00			751,921.00
NATURE OF CHANGE:						
						,
Addi pum <sub>l</sub>	itional labor and material to p in the Fireman's Training	provide a se Center Grou	al water system for th ndwater Treatment Fa	e air stripper acility Opera	cleaning	g/recycle ilding
				, ,		6.
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						_
		\$2,327.0	0			
		Cost this	Revision			
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W)						G-26
CONTRACTOR:  SILVISK  BY: 7 Out	SITE CONISTE CO		SEE ATTACHMENTS	GRANT NU (ff Applicable)	MBER:	
7. 22.27	S 11/19/98	P <u>C</u> (	OMPTROLLER'S CER		<u>v:</u>	CERTIFICATE OF
RECOMMENDED: 1100	1 ha		I hereby pertify that an unence balance sufficient to coyer to	//_//		ACCEPTANCE INTO NUMIS
COMMISSIONER, DPW	17/2/18 W DATE		present in the appropriation	to be Changed		
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PPROVED:	DATE		COUNTY COMPT	ROLLER	c	Lelineno Name:
OUNTY EXECUTIVE	thi 12/21/98		1 / 1 / 5 F			)2118198
AIS 551 a						CO-680, 8/91; REV. 10/94

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COUNTY OF NASSAU, NY CAPITAL CONTRACT CHANGE ORDER S&WS/dmp							
DATE OF ADVISEMENT 98 VENDOR NAME:	FUND TRANS	SACTION CODE	CNTM		PV		8 1 0 2 1 G
SILVER	ITE CONSTRUC		VENDOR IDENTIFIE	VF 11	-2098433	_	
LINE # PROJECT IO:  AREA 0 PROJ ORIGINAL BID AMOUNT		OBJ CHANGE ORDER (		man's Training	Center		
\$15,250,000.00	PREVIOUS REVISIONS: +\$501,921.00		CIRCLE	evision: 5,628.00			D AMOUNT: 758,549.00
NATURE OF CHANGE:				- · · · · · · · · · · · · · · · · · · ·			
Addi prob	tional labor and mes associated with	naterial to modi the Fireman's	fy the Injection Fraining Cent	on Wells for the per Groundwater	piezometers a Treatment Fa	nd cility	Project.
	.÷.						
							~
			5,628.00 Cost this Revision				
P							G-27
CONTRACTOR: SILUEA BY: FRANK	170 CON	ISTR.	SEE A	TTACHMENTS	GRANT NUME (*Applicable)	BER:	
VIC. PR	OES ///	24/95 TE 4/95	COMPTE		TIFICATION:		CERTIFICATE OF ACCEPTANCE
RECOMMENDED SOMMISSIONER OFW	12/	12 /18		certify that an unencur sufficient to cover this in the appropriation to	contraot is		INTO NUMIS
ORWEITEROVED:	Tal fu	10/11/9	Name:	ever p	eole	$-\!$	certify that this document was accepted into NUMIS.
PPROVED:	DA .	TÉ /	Title:	DUNTY COMPTR	OLLER	d	X. dolunero Name:
COUNTY EXECUTIVE	n' 14	1498 TE	Date:	14/11			12/18/198 Date:
			/	/			CO-680, 8/91; REV. 10/94

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	TRACT CHANGE ORDE	ER s	&WS/dmp
ATE OF ADVISEMENT FUND CAP TRANSACTION CODE VENDOR NAME:	CNTM	DEPARTMENT PW	8 1 0 2 1 G
SILVERITE CONSTRUCTION	VENDOR IDENTIFICATION: VF 11-209	8433	
INE # PROJECT IO: COST OBJ CHANG ORDER  AREA 0 PROJECT 4 ØØØ 24  IGNAL BID AMOUNT PREVIOUS REVISIONS:	Fireman's Training Cent	er	
\$15,250,000.00 +\$508,549.00	THIS REVISION:  \$1,862.00	E E	60,411.00
ATURE OF CHANGE:		<b>_</b>	
Additional labor and material to proving at the cleaning recycle pump in	ide three schedule 80 PVC check van the Fireman's Traning Center Ope	alves on the suc erations Buildir	etion ng.
			-
\$	1,862.00  Cost this Revision		
(A)			G-3 <b>2</b>
SILVERITE CONSTR	SEE ATTACHMENTS GRA	NT NUMBER:	
ITLE: AND WATE 198	COMPTROLLER'S CERTIFIC		CERTIFICATE OF ACCEPTANCE
OMMISSIONER OPER DATE	I hereby certify that an unencumbered befance sufficient to cover this contra present in the appropriation to be Ch	ict is	, INTO NUMIS
DRM APPROVED:	pedeuch ker		pertify that this document was accepted into NUMIS.
DUNTY ATTORNEY DATE	COUNTY COMPTROLLE	ν-	L. dolinero
OUNTY EXEGUTIVE 1/21/98  DUNTY EXEGUTIVE DATE!	12/2/98 Date: 12/98		12118198 Sale:
IS 551 a	/ /	L	CO-680, 8/91; REV. 10/94

CAPITAL CONTRACT CHANGE ORDER S&WS/dmp COUNTY OF NASSAU, NY DEPARTMENT C A P DATE OF ADVISEMENT TRANSACTION CODE **DA** VENDOR IDENTIFICATION: 11-2098433 VF SILVERITE CONSTRUCTION PROJECT ID: CHANGE ORDER # COST GROUP LINE # DESCRIPTION: PROJECT 4 Fireman's Training Center 25 ØØØ ORIGINAL BID AMOUNT PREVIOUS REVISIONS: THIS REVISION: REVISED AMOUNT: MARK APPRO CIRCLE \$15,250,000.00 +\$510,411.00 \$2,321.00 \$15,762,732.00 0 NATURE OF CHANGE: Additional labor and material to modify the fork lift for the Fireman's Training Center Operations Building. \$2,321.00 Cost this Revision G-31 GRANT NUMBER: CONTRACTOR: ☐ SEE ATTACHMENTS BY: **CERTIFICATE OF** COMPTROLLER'S CERTIFICATION: TITLE: **ACCEPTANCE** I hereby certify that an unencumbered INTO NUMIS certify that this document was accepted into Name: COUNTY COMPTROLLER Title: APPROVED: Date: CO-680, 8/91; REV. 10/94

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CO-680, 8/91; REV. 10/9-

COUNTY OF NASSAU, NY		NTRA	CT CHANGE OF	RDER	S	&WS/dmp
DATE OF ADVISEMENT  L.Z. L.D. G.K.  VENDOR NAME:	FUND TRANSACTION CODE		NTM		₩ы	8 1 0 2 1 (
SILVER	ITE CONSTRUCTION	VENDO	VF 11	-2098433		
LINE # PROJECT IO:  AREA 0 PROJECT IO:  ORIGINAL BID AMOUNT	$\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	LANGE DER#	оеsсярном: Fireman's Training	Center		
\$15,250,000.00	PREVIOUS REVISIONS: +\$512,732.00	MARK APPROCINCLE	\$11.801.00			ED AMOUNT: 15,774,623.00
NATURE OF CHANGE:					<u> </u>	
l) Th	tional labor and material to pr ndwater Treatment Facility O ree pressure relief valves on t ur air vacuum relief valves on	perations the air sco	Building: our system.		g Cente	T -
	,	£11.00				
		\$11,89	is Revision			
(a)						G-28, 30
CONTRACTOR:  BY: 20 16	CONSTR GO INC			GRANTINUN (# Applicacie)	BER:	
TITLE: VIC. PRO	S 12/7/98	2	8/02/6 COMPTROLLER'S CER	TIFICATION		CERTIFICATE OF
RECOMMENDED	1.6	1	I hereby certify that an unencur	_		ACCEPTANCE INTO NUMIS
COMMISSIONER DPW	12/0/18 12/0/18		propent in the appropriation to			7
FORM APPROVED:	Walley 12/17/a		Name:	aut	4	certify that this documer was accepted into NUMIS.
COUNTY ATTORNEY	DATE		COUNTY COMPTR	OLLER		L. Solemeno
APPROVED:  COUNTY EXECUTIVE	1 1/21/58		Title: 12/1/57.			Name:   <u>                                    </u>

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CAPITAL CONTRACT CHAI COUNTY OF NASSAU, NY S&WS/dmp FUND C A P TRANSACTION CODE DEPARTMENT CNTM PWVENDOR NAME VENDOR IDENTIFICATION: 11-2098433 SILVERITE CONSTRUCTION VF PROJECTIO: LINE # COST CHANGE ORDER# DESCRIPTION: PROJECT 27 Fireman's Training Center Groundwater Treatment Facility ØØØ PREVIOUS REVISIONS: THIS REVISION: MARK APPRO REVISED AMOUNT: \$15,250,000.00 \$48,366.00 +\$524,623.00 \$15,822,989.00 0+ NATURE OF CHANGE: Additional labor and material to provide the following: 1. Bypass the onsite influent flow past the metal precipitation system directly to the fludized bed. 2. Bypass the offsite influent flow past the metal precipitation system to the intermediate wet well. 3. Redirect the onsite influent flow through the offsite metal preceipitation train and rapid mix tank to the clairifier sump. 4. Modify both the onsite and offsite rapid mix tank weirs and install adjustable weirs. 5. Provide two M-8 Wilden diaphragm pumps, model No. M-8 222/SNPB/TF/VT/VT with air exhaust mufflers and a Wilden surge dampener, model No. D2-SAP-TF-TF. \$48,366.00 Cost this Revision G-36 GRANT NUMBER: Construction Co., Inc. SEE ATTACHMENTS 81021 **CERTIFICATE OF** 2.11.00 COMPTROLLER'S CERTIFICATION: DATE **ACCEPTANCE** I hereby certify that an unencumbered INTO NUMIS balance sufficient to cover this contract is certify that this document accepted into NUMIS. COUNTY COMPTROLLER Name: Title: EXECUTIVE DATE CO-680, 6/91; REV. 10/94

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CAPITAL CONTRACT CHANGE ORDER S&WS/dmp COUNTY OF NASSAU, NY TRANSACTION CODE DEPARTMENT DATE OF ADVISEMENT 8 1 0 2 1 G PWCNTM VENDOR NAME: VENDOR IDENTIFICATION: 11-2098433 SILVERITE CONSTRUCTION LINE # PROJECTIO CHANGE ORDER # DESCRIPTION: PROJECT 0 28 Fireman's Training Center Groundwater Treatment Facility 1 ØØØ RIGINAL BID AMOUN THIS REVISION: REVISED AMOUNT: MARK APPRO \$15,250,000.00 +\$ 572,989.00 (\$441,735.00)\$15,381,254.00 € NATURE OF CHANGE: A credit for the unused portion of the contract bid items as follows: SUMMARY OF CREDIT QUANTITIES ITEM CONTRACT COST NO. DESCRIPTION UNIT PRICE TO DATE **CREDITS** #08 Disposal of Contaminated Excavation \$225,000.00 \$0.00 (\$225,000.00) #09 Incremental Cost for Work in Protection Level "C" \$5,000.00 S0.00 (\$5,000.00)#10 Cost of Sulfuric Acid during Performance Testing \$12,000.00 \$5,556.38 (\$6,443.62)#11 Cost of Caustic during Performance Testing \$81,000.00 \$13,274.51 (\$67,725.49) #12 Cost of Polymer during Performance Testing \$37,000.00 \$6,049.11 (\$30,950.89) #13 Cost for Nutrient during Performance Testing \$8,000.00 \$880.00 (\$7,120.00) #14 Cost for Sludge Disposal during Performance Testing \$0.00 \$18,000.00 (\$18,000.00)#15 Cost for Waste Oil Disp. during Performance Testing \$1,000.00 \$0.00 (\$1,000.00)#17 Patching Soil Concrete Caps \$10,000.00 \$0.00 (\$10,000.00) #18 Lab. Testing & Checking Required by Tech. Spec. \$10,000.00 \$4,505.00 (\$5,495.00)#19 Temp. Heat & Ventilation after Const. Completion \$50,000.00 \$0.00 (\$50,000.00) #21 Minority Apprenticeship Training Program (Painter) \$15,000.00 S0.00 (\$15,000.00)(\$441,735.00) TOTAL (\$441,735.00) Cost this Revision G-37 GRANT NUMBER: CONTRACTOR: Construction Co., Inc. SEE ATTACHMENTS **CERTIFICATE OF** 2.11.00 COMPTROLLER'S CERTIFICATION: DATE **ACCEPTANCE** I hereby certify that an unencumbered RECOMMENDED: INTO NUMIS balance sufficient to come this contract certify that this documer accepted into 00 COUNTY COMPTROLLER Name: Title:

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CO-680, 8/91; REV. 10/9

Date:

## CAPITAL CONTRACT CHANGE ORDER **OUNTY OF NASSAU, NY** DATE OF ADVISEMENT TRANSACTION CODE DEPARTMENT CNTM PW VENDOR IDENTIFICATION: 11-2098433 SILVERITE CONSTRUCTION VF PROJECT ID: NE# COST CHANGE ORDER # DESCRIPTION: OPROJECT 4 29 Fireman's Training Center Groundwater Treatment Facility ØØØ SWAL BID AMOUNT PREVIOUS REVISIONS: THIS REVISION: MARK APPRO REVISED AMOUNT: \$15,250,000.00 +\$131,254.00 \$5,045.00 \$15,386,299.00 **6** ATURE OF CHANGE: Additional labor and material to provide the following: An air station in the maintenance shop. Change the pistons on caustic pumps No. 3 & 4. \$5,045.00 Cost this Revision <del>G-36</del> GRANT NUMBER: (# Applicable) ☐ SEE ATTACHMENTS CERTIFICATE OF COMPTROLLER'S CERTIFICATION: DATE **ACCEPTANCE** I hereby certify that an unencumbered ECOMMENDED: JNTO NUMIS certify that this document was accepted into NUMIS. COUNTY COMPTROLLER Name: Title: Date: Date:

CO-680, 8/91; REV. 10/94

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COUNTY OF NASSAU, NY

DATE OF ADVISEMENT

CAPITAL CONTRACT CHANGE ORDER

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CO-680, 8/91; REV. 10/94

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	CONSTRUCTION		VF	1-2098433		
LINE # PROJECT IO.  AREA OPROJECT I		DER#	scripnon: reman's Training Cente	er Groundwa	ter Trea	itment Facility
	is revisions: \$136,299.00	MARKAPPRO CIRCLE	THIS REVISION: \$12,004.00		REVISED \$15,	398,303.00
well. Addit	labor and material to proitation system while of ionally, this revision wibypass revisions.	tsite influer	it is run through the by	nace to the in	termedi	ata west
		\$12,004.0				
CONTRACTOR						0-38
CONTRACTOR: SILVERITE CO	wst. Co. Inc		SEE ATTACHMENTS	GRANT NUMB (# Applicable)	ER:	
V.P. & OPinstony	7.1.00 DATE	COL	MPTROLLER'S CERT	IFICATION:		CERTIFICATE OF
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	NTRACT CHANG_ ORDI	ER S&WS/dmp
OATE OF ADVISEMENT OF CUMOP TRANSACTION CODE	CNTM	DEPARTMENT 8 CONTRACT NUMBE
SILVERITE CONSTRUCTION	VENDOR IDENTIFICATION: 11-20	98433
1900 FCT 19	VF VF	
ABEA OPROJECT 1 4 CCCC 31	GE DESCRIPTION:	
	Fireman's Training Center G	roundwater Treatment Facility
\$15,250,000.00 PREVIOUS REVISIONS: +\$148,303.00	THIS REVISION: \$9,261.00	REVISED AMOUNT \$15,407,564.00
NATURE OF CHANGE:		
Additional labor and material to prov	vide the following	
	• ,	
<ol> <li>Modify the filter sludge piping, re polymer.</li> </ol>	clocate polymer blend feed pump No.	3,and provide additional
2 Pagair 2 afaha an situ (a Chia Pu		
2. Repair 3 of the on-site/off-site BV	V level switches and purchase 4 new	BW level switches.
		_
	\$9,261.00	
t	Cost this Revision	
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<i>3</i> )		<del>0-39</del>
<u>v)</u>		
CONTRACTOR: Sylvenite Coret Co Tuc	SEE ATTACHMENTS CHAR	NT NUMBER:
BY: ff	810216W	
ITLE: POPONATOR ST. 15.00 DATE	COMPTROLLER'S CERTIFICA	ATION: CERTIFICATE OF
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TOUTH EXECUTIVE DATE	9/10/27	9/11/∞
S 551 a	Date:	Date:
	/ /	CO-680, 8/91; REV. 10/94

CAPITAL CONTRACT CHANGE ORDER COUNTY OF NASSAU, NY S&WS/dmp DATE OF ADVISEMENT TRANSACTION CODE DEPARTMENT 8 CONTRACT NUMBER CNTM PW VENDOR IDENTIFICATION: 11-2098433 SILVERITE CONSTRUCTION LINE # PROJECT ID: COST CHANGE ORDER # DESCRIPTION: OPROJECT Fireman's Training Center Groundwater Treatment Facility 32 ØØØ ORIGINAL BID AMOUNT PREVIOUS REVISIONS: THIS REVISION: REVISED AMOUNT: \$15,250,000.00 +\$157,564.00 \$34,476.00 \$15,442,040.00 NATURE OF CHANGE: Additional labor and material to provide insulation on various piping systems in the Operations Building. \$34,476.00 Cost this Revision <del>0-40</del>, SILVERITE CONST CO INC GRANT NUMBER: ☐ SEE ATTACHMENTS 9.6-00 **CERTIFICATE OF** TITLE: DATE **ACCEPTANCE** RECOMMENDED: INTO NUMIS 9-12-00 certify that this document **GOUNTY ATTORNEY** COUNTY COMPTROLLER Name: Title: Y EXECUTIVE COUN DATE Deto: NUMIS 551 a CO-580, 8/91; REV. 10/94

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-- 1100 4444016161 CAPITAL CONTRACT CHANGE ORDER S&WS/dmp COUNTY OF NASSAU, NY DATE OF ADVISEMENT TRANSACTION CODE DEPARTMENT CNTM PWVENCOR NAME: VENDOR IDENTIFICATION. 11-2098433 SILVERITE CONSTRUCTION PROJECTIO LINE # COST CHANGE ORDER # DESCRIPTION: OPROJECT ABEA Fireman's Training Center Groundwater Treatment Facility 33 ØØØ ORIGINAL BID AMOUNT PREVIOUS REVISIONS: THIS REVISION MARK APPRO CIRCLE REVISED AMOUNT: \$15,250,000.00 +\$192,040.00 \$6,872.00 \$15,448,912.00 **(3)**+ NATURE OF CHANGE: Additional labor and material to relocate the air stripper influent water flow FIT-251-1, FIT-251-2, FIT-251-3, and the on-site influent flow FIT-220 pressure transmitters from the outside to the inside of the building. \$6,872.00 Cost this Revision <del>0-41</del> GRANT NUMBER. (# Applicable) ☐ SEE ATTACHMENTS CERTIFICATE OF COMPTROLLER'S CERTIFIC ATION: 11.4.00 DATE 1021 **ACCEPTANCE** I hereby certify that an unencumbered RECOMMENDED: balance sufficient to cover this contract is INTO NUMIS present in the appropriation to be Opinged. certify that this document was accepted into NUMIS. Name: COUNTY ATTORNEY COUNTY COMPTROLLER Tille: Name cocci COUNTY EXECUTIVE DATE Date:

CO-680, 8/91; REV. 10/94

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CAPITAL CONTRACT CHANGE ORDER COUNTY OF NASSAU, NY DATE OF ADVISEMENT TRANSACTION CODE DEPARTMENT CNTM PWVENDOR IDENTIFICATION 11-2098433 SILVERITE CONSTRUCTION VF PROJECT ID CHANGE ORDER# COST 081 DESCRIPTION: GROUP OPROJECT 34 Fireman's Training Center Groundwater Treatment Facility ØØØ ORIGINAL BID AMOUNT PREVIOUS REVISIONS MARK APPRO CIRCLE REVISED AMOUNT \$15,250,000.00 +\$198,912.00 \$7,080.00 \$15,455,992.00 NATURE OF CHANGE: Additional labor and material to perform the following: I. Remove and replace five (5) Barish air diaphragm pump control panels. 2. Substitute non-metallic hangers and support material for the specified Metallic materials in the chemical storage and pump areas. \$7,080.00 Cost this Revision GRANT NUMBER: CONTRACTOR: ☐ SEE ATTACHMENTS CERTIFICATE OF TITLE ACCEPTANCE I hereby certify that an unencumbered RECOMMENDED INTO NUMIS Aufficient to cover this contract is certify that this document FORM APPROVED: was accepted into Name: COUNTY ATTORNE COUNTY COMPTROLLER Name: APPROVED: Title: EXECUTIVE Date: Date:

CAPITAL CONTRACT CHANGE ORDER LOUDITY OF NASSAU. NY OEPARTMENT 8 CONTRACT NUMBER DATE OF ADVISEMENT TRANSACTION CODE CNTM PW VENDOR IDENTIFICATION: 11-2098433 SILVERITE CONSTRUCTION PROJECT ID: COST GROUP CHANGE ORDER # DESCRIPTION: LINE # OPROJECT Fireman's Training Center Groundwater Treatment Facility 35 ØØØ ORIGINAL BID AMOUNT PREVIOUS REVISIONS: THIS REVISION: REVISED AMOUNT: MARK APPRO CIRCLE \$4,436.00 \$15,460,428.00 \$15,250,000.00 +\$205,992.00 NATURE OF CHANGE: Additional labor and material to perform a supplementary acceptance test of the Netzsch Sludge Filter Press. : \$4,436.00 Cost this Revision 0-43GRANT NUMBER: CONTRACTOR: SILVERITE CONST Co INC ☐ SEE ATTACHMENTS 102160 **CERTIFICATE OF** COMPTROLLER'S CERTIFICATION: 3.26.02 DATE **ACCEPTANCE** THLE I hereby certify that an unencumbered INTO NUMIS balance sufficient to cover this contract is appropriation to be Changed. certify that this document was accepted into NUMIS. FORM APPROVED: Name: EOMALA GOVE COUNTY COMPTROLLER Name: Title: APPROVED: APR 2 3 2002 Date: YEXECUTIVE CO-680, 8/91; REV. 10/94 NUMIS 551 a

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## ELECTRICAL CONTRACTOR CHANGE ORDERS

	COUNTY OF NASSAU, NY	L CORTINOT OTHER	S&WS / DMP
	OLT OLG GIL CLAIP	CNTM F.T.C. Zile	PW 8, 1,0,2,1
	WELSBACH ELECTRIC	УЕНООЯ IDENTIFICATION: VF 11-7	2354251
	UNE PROJECT D. COST GROUP  AREA PROJECT GROUP  1 8 1 0 2 1 4 000	CHUNCE DESCRIPTION:  1 Fireman's Training (	Center
	\$1,988,000.00 0.00	WAK APPRO THIS REVISION:	REVISED AMOUNT:
ł	\$1,988,000.00	○ - <b>③ ·</b> \$5,14Ø.ØØ	\$1,993,140.00
		oor and material to perform the fol the Fireman's Training Center Grou lity:	
	1. Install ten	perature switch in the offsite & o	onsite well vaults.
	2. Provide cor number 122.	duit & wire for the relocated eyew	ash staion in room

- 3. Supply disconnect switches for the control & effluent valves.

\$5,140.00 Cod this Kerlsion

E7,8 & 11 CONTRACTOR: GRANT NUMBER: SEE ATTACHMENTS (Y Applicable) 6-24-ap **CERTIFICATE OF** COMPTROLLER'S CERTIFICATION: TITLE: DATE ACCEPTANCE RECOMMENDED I hereby certify that an unencumbered INTO NUMIS stance sufficient to cover this contract is prosent in the appropriation COMMISTIONER, DE certify that this docume was accepted into NUMS COUNTY ATTORNEY DATÉ COUNTY COMPTROLLER Name: COUNTY EXECUTIVE NUMIS SSI.a. CO-660, 6/91 REV. 1 ()

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	LINE PROJECT ID.		COST	oen	CHANGE ORDER #	DESCRIPTION:	<u>VI</u>	-2334251	
	1 8 1	PROJECT 0 2 1	4	ØØØ	2	Firema	n's Trainir	a Center	
	ORIGINAL BID AMOUNT	I	DUS REVISION		unk w	PRO THIS REVISION:			ISED AMOUNT:
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					\$12,	977.ØØ this Revision			E-6
	CONTRACTOR:			<del></del>		SEE ATTACK		ANT NUMBER:	
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COUNTY OF NASSAU, NY

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COUNTY OF MASSAO, NY	·					5&W	S/ DMP
DATE OF ADVISEMENT	FUNO TE	RANSACTION COOE		NTM	<sup>∞</sup> AT PV		CONTRACT NUMBER 8 1 0 2 1 E
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LINE PROJECT ID.  AREA PROJECT  8 1 0 2	$\begin{bmatrix} 1 & 4 \\ - & \end{bmatrix}$	ØØØ	HUNGE HOER #	ספאראוייטא: Fireman's Trai	ining Cent	er	
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CONTRACTOR:			Tr	SEE ATTACHMENTS	GRANT NUM	BER:	
00-200-178 M. D		7-17-99	, <del>                                    </del>	SEE ATTACHMENTS  & SIØZIE  COMPTROLLER'S CEF	(Y Applicable)		CERTIFICATE OF
TITLE:		DATE					ACCEPTANCE
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COMMISSIONER DPW ()	<del> 4</del>	DATE	1	present in the appropriation	////		
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COUNTY ATTORNEY	7	DATE		COUNTY COMPT	ROLLER		L. Solimero
APPROVED: Luyl Pit	n'	8/11/9	8	Title: 8/6/97		ľ	Name: 8/4/98
COUNTY EXECUTIVE		DATE L	ı	Dete: /			Date.

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CO-680, 8/91; REV. 10/94

COUNTY OF NASSAU, NY	CAPITAL CO	NTRACT CHANGE URD	ER s	S&WS/dmp
DATE OF ADVISEMENT 98	P C A P TRANSACTION CODE	CNTM	DEPARTMENT PW	CONTRACT NUMBER
VENOOR NAME: WELSB	BACH ELECTRIC	VENDOR IDENTIFICATION: VF 11-2:	354251	
LINE # PROJECT IO:  AREA 0 PROJECT IO:	COST OBJ CHW	NGE DESCRIPTION: D. 1 T.	ining Center	
\$1,988,000.00	PREVIOUS REVISIONS: +\$33,612.00	MARK APPRO THIS REVISION: CIRCLE \$22,012.00	li i	ed amount: 043,624.00
NATURE OF CHANGE:				
Add Cent	litional labor and material to rev ter Operations Building.	vise some of the lighting fixtures in t	the Fireman's T	raining
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		\$22,012.00		
	L	Cost this Revision		
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CONTRACTOR:		SEE ATTACHMENTS GI	RANT NUMBER:	
BY: Was was	<del></del>	8/02/60		CERTIFICATE OF
TITLE:	DATE 10-98		EICATION:	ACCEPTANCE
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COMMISSIONER, DPW	11/17/18 Out DATE	propont in the appropriation to be	///	
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COUNTY ATTORNEY	DATE 4 / 193/18	COUNTY ÇOMPTROL	LER	L. Lolinero
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GE R F CHACLE O - Q	DESCRIPTION: Fireman's Ti THUS REVISION: \$48,495.00		nter REVISED	
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	belance sufficient to cove present to the appropriate Name:	r this portunit is		CERTIFICATE OF  ACCEPTANCE INTO NUMIS  Certify that this document was accepted into NUMIS.  Lalaman.  Name.  1213138  Date:
		SID21 E COMPTROLLER'S Company of the second	SEE ATTACHMENTS  GRANT NU  (Tapplicable)  8 / 02 / E  COMPTROLLER'S CERTIFICATIO  I hereby certify that an unencumbered  balance sufficient to cover the pointract is  present to the appropriator to the changed.  Name:  COUNTY COMPTROLLER  Title:	SEE ATTACHMENTS  GRANT NUMBER:  (TApplicable)  SOLICE  COMPTROLLER'S CERTIFICATION:  I hereby certify that an unencumbered  belance sufficient to cover the contract is  present in the appropriatography to be oftenood.  Name:  COUNTY COMPTROLLER  Title:  1 9 9 9

CAPITAL CONTRACT CHANGE ORDER S&WS/dmp							
DATE OF ADVISEMENT C	TRANSACTION CODE	CN	TM	DEPARTMENT PW	CONTRACT NUMBER		
VENDOR NAME: WELSBACH EI	LECTRIC	VENDOR I	DENTIFICATION: VF 11-	-2354251			
LINE # PROJECT IO:  AREA 0 PROJECT 1	GROUP	CHANGE DES		raining Center			
	6 REVISIONS: 04,119.00	MARK APPRO CIRCLE	THIS REVISION: \$5,068.00°.		1SED AMOUNT: / 2,097,187.00		
NATURE OF CHANGE:				<u>_</u>			
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\$5,068.00  Cost this Revision							
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CONTRACTOR:			SEE ATTACHMENTS	GRANT NUMBER (# Applicable)			
Cen Manager	NATE DATE	<u>cc</u>	DMPTROLLER'S CERT	TFICATION;	CERTIFICATE OF		
RESOMMENDED: MAL	- John		I hereby certify that an unencum		ACCEPTANCE INTO NUMIS		
COMMISSIONER, DEW			present in the appropriation to	be Chaptied,	I certify that this document		
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APPROVED:	1/7/99 DATE		Title:		Name:		
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UNIYAJ	TORNEY				DATE		<sup>ارب</sup> [	DER Y COUNTY COMPTROLLER						

COUNTY EXECUTIVE

# PLUMBING CONTRACTOR CHANGE ORDERS

L. V.SCRS CARITAL CONTRACT CHANGE CADER COUNTY OF NASSAU, NY S&WS / DMP DATE OF ADVISEMENT TICHNSACTION CODE **FUNO** DEPARTMENT CONTRACT HUMBER C, A, P 8.1.0.2.1.P PW VENDOR NAME: VENDOR IDENTIFICATION: JAMES MCCULLAGH, CO., INC. 11-1798851 LINES PROJECT ID: COST GROUP CBJ CHANGE ORDER# DESCRIPTION AREA PROJECT ØØØ 8.1. 4 Firemen's Training Center ORIGINAL BID AMOUNT PREVIOUS REVISIONS: THIS REVISION: MARK APPRO CIRCLE REVISED AMOUNT: \$324,670.00  $\emptyset$ . $\emptyset$ \$2,000.00 \$326,67Ø.ØØ 0.0 NATURE OF CHANGE: Additional labor and material to do the following extra work at Firemen's Training Center: 1. Provide a new sanitary house trap along with the necessary plumbing work, for sanitary waste line located on the east side of the Operations Building, in accordance with the plumbing code. 2. Provide two (2) 2" ball valves, one (1)  $2\frac{1}{2}$ " ball valve and one (1)  $2\frac{1}{2}$  check valve on the piping to the emergency water storage tanks. \$2,000.00 Cost this Revision P-1 CONTRACTOR: GRANT NUMBER: McCullagn Co. SEE ATTACHMENTS (X Applicable) 810217 世 **CERTIFICATE OF** 2/14/98 COMPTROLLER'S CERTIFICATION: TITLE: PLUSCET MANAGE DATE **ACCEPTANCE** I hereby certify that an unencumbered RECOMMENDED: balance sufficient to cover this contract is INTO NUMIS present in the appropriation to be Changed COMMISSIONER DPW Δνuσ certify that this document FORMAPPROVED: Name: COUNTY ATTORNEY COUNTY COMPTROLI FR DATE APPROVED: Title: COUNTY EXECUTIVE Daté:

E. Visone

	<b>~</b>			CAI	•			•	T CHANGE O	PUE	CI	,	8666672	•
	OF NASS		FUN		ANSACTION				T CHANGE O	NDL	OEPART		&WS/dmp	
D. 6	الله و	1.00	Z) _Č <sup>™</sup> Z	P		~~C	CI	1	ГМ		PV	V	8 CONTRACT NUMBER	
VENDOR		JAMES	MCCU	ЛLLAGI	н, со., п	NC.	VENOX	) RC	DENTIFICATION: VF	11-17	98851			
LINE#	PROJECT II	OPROJE	Ž 1	COST GROUP 4	ØØØ oen	CHANG ORDER 2	3E		скирпом: Fireman's Training C	enter (	Groundwa	ater Ti	reatment Facility	
ł	,670.00		i	2,000.00			MARK APPRICIECLE	_	THIS REVISION: (\$12,700.00)				ED AMOUNT: / 13,970.00	
NATUR	E OF CH	ANGE:				<u>L`</u>	<u>. 1</u>							-
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							(\$12, <sup>*</sup>		).00) Revision					
<b>(b)</b>													P-26	
CONTRA	CTOR:	1cCULL	AGH "C						SEE ATTACHMENTS	GR (M)	APPLEADIG)	BER:		_
BY: JUHN W.	MENDED:	, II, VI	DE PRES	ipies 5	6/13/00 DATE			CC	OMPTROLLER'S CE  I hereby certify that an uner  balance sufficient to cover	ncumber	N .	:	CERTIFICATE OF ACCEPTANCE INTO NUMIS	
COMMISS FORM APP	PROVED ATTORNE	PW C	Ĵω		DATE 29/00 DATE			/ /	COUNTY COMP	Z PUR	POSES LER		I certify that this document was accepted into NUMISO	nt 
COUNTY	EXECUTIV	Jn	z	_ 11	DATE	y ,			Title: 7/18/0-	1			Name:	- -

# HVAC CONTRACTOR CHANGE ORDERS

+.T.C. VIII CTPW026685 CAPITAL CONTRACT CHANGE ORDER S&WS/dmp COUNTY OF NASSAU, NY DATE OF ADVISEMENT TRANSACTION CODE DEPARTMENT CONTRACT NUMBER LØI CNTM ΡW VENCOR NAME: VENDOR IDENTIFICATION: 11-2575963 J K B CONTRACTING INC. VF PROJECT ID: LINE# COST CHANGE ORDER # DESCRIPTION: ()PROJECT Fireman's Training Center Groundwater Treatment Facility ØØØ PREVIOUS REVISIONS: THIS REVISION: MARK APPRO CIRCLE REVISED AMOUNT: \$595,000.00\_ +\$0.00 (\$20,949.00) \$615,948.00 NATURE OF CHANGE: Various Modifications: 1. Modify electric room and process area duct work 2. Modify boiler ignition system 3. Incomplete punch-list item credit (\$20,949.00) Cost this Revision CONTRACTOR: GRANT NUMBER: ☐ SEE ATTACHMENTS **CERTIFICATE OF** rolect COMPTROLLER'S CERTIFICATION: 7/1/ 02 **ACCEPTANCE** INTO NUMIS

COUNTY COMPTROLLER

Date:

AT PORNEY

certify that this document was accepted into

Name

## APPENDIX C



January 15, 2004

#### CERTIFICATE OF COMPLETION

**CONTRACTOR** 

Silverite Construction Company, Inc. C.S. 1818 Old County Road West Hicksville, NY 11801

Contract No. S81021-G

#### PROJECT DESCRIPTION/LOCATION

Fireman's Training Center Groundwater Treatment Facility

THIS IS TO CERTIFY THAT THE WORK PERFORMED UNDER THIS CONTRACT HAS BEEN INSPECTED AND FOUND ACCEPTABLE AS OF \_\_\_\_\_\_ December 22, 2003\_\_\_\_ .

RECOMMENDED FOR APPROVAL:

Richard A. Webber, P.E. Sanitary Engineer IV

Joseph L. Davenport, P.E.

Acting Div. Head of San. & Water Supply

APPROVED AND ACCEPTED:

Peter J. Gerbasi, F.E.

Commissioner of Public Works

JLD:EFV

c: Clerk of Legislature

Comptroller

Division of San. & W.S.

Accounts Unit

Contracts File-Legalities

Bureau of Real Estate & Insurance



April 22, 2004

#### CERTIFICATE OF COMPLETION

CONTRACTOR

Welsbach Electric Corp., L.I. 300 Newtown Rd. Plainview, NY 11803

Contract No. S81021-E

#### PROJECT DESCRIPTION/LOCATION

Fireman's Training Center Groundwater Treatment Facility

THIS IS TO CERTIFY THAT THE WORK PERFORMED UNDER THIS CONTRACT HAS BEEN INSPECTED AND FOUND ACCEPTABLE AS OF April 15, 2002\_\_\_\_.

RECOMMENDED FOR APPROVAL:

Richard A. Webber, P.E.

Sanitary Engineer IV

Joséph L. Davenport, P.E.

Acting Div. Head of San. & Water Supply

APPROVED AND ACCEPTED:

Peter Gerbasi P.E.

Commissioner of Public Works

JLD:EFV

c: Clerk of Legislature

Comptroller

Division of San. & W.S.

Accounts Unit

Contracts File-Legalities

Bureau of Real Estate & Insurance



February 6, 2001

#### **CONTRACTOR**

James McCullah Co., Inc. 75 East Bethpage Road Plainview, NY 11803-4201 Att: Mr. John W. Clukies, II, P.E.

#### CERTIFICATE OF COMPLETION

CONTRACT NO. S81021P

#### PROJECT DESCRIPTION/LOCATION

Fireman's Training Center, Groundwater Treatment Facility-Plumbing

THIS IS TO CERTIFY THAT THE WORK PERFORMED UNDER THIS CONTRACT HAS BEEN INSPECTED AND FOUND ACCEPTABLE AS OF January 5, 2001.

RECOMMENDED FOR APPROVAL:

Joseph L. Davenport Sanitary Engineer IV

Acting Division Head of Sanitation & Water Supply

JGP:EFV

c: Clerk of Legislature County Comptroller Division of S & WS Accounts Unit Land Acquisition

Bureau of Real Estate & Insurance

Bonding Company: Liberty Mutual Insurance Company

Att: Mr. Paul Krous

APPROVED AND ACCEPTED:

Commissioner of Public Works



August 19, 2002

#### CERTIFICATE OF COMPLETION

CONTRACTOR

JKB Contracting Inc. 55 North Broadway Hicksville, New York 11801

Contract No. S81021-H

PROVED AND ACCEPTED:

#### PROJECT DESCRIPTION/LOCATION

Fireman's Training Center Groundwater Treatment Facility

THIS IS TO CERTIFY THAT THE WORK PERFORMED UNDER THIS CONTRACT HAS BEEN INSPECTED AND FOUND ACCEPTABLE AS OF \_\_\_\_\_\_\_\_.

RECOMMENDED FOR APPROVAL:

Edward F. Visone

Asst. Supt. of Sanitary Construction

Joseph L. Davenport, P.E.

Acting Div. Head of San. & Water Supply

Commissioner of Public Works

Peter J. Gerbasi, P.E.

ЛLD:EFV:ep

c: Clerk of Legislature
Comptroller
Division of San. & W.S.
Accounts Unit
Land Acquisition
Contracts File-Legalities
Bureau of Real Estate & Insurance

Bonding Co. - Monitor Surety Managers Inc.

### APPENDIX D



#### COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS MINEOLA, NEW YORK 11501-4822

# N.C.F.T.C. GROUNDWATER REMEDIATION FACILITY SLUDGE FILTER PRESS ACCEPTANCE TEST RESULTS OCTOBER 3, 2001

In an effort to confirm that the Netzsch Filter Press provided by the General Contractor could provide the performance specified by Section 11360 of the contract, a test of the press, using sludge from a different source, was scheduled for October 3, 2001.

Permission was previously obtained from Mr. Carl Hoffman, of the NYSDEC, to use sludge from the Purex Groundwater Remediation for this test. This source was chosen because the facility generates a similar metals sludge, the quantity required was available, and the proximity of the facility.

The sludge was transported to the FTC remediation facility by RGM. Approximately 3,600 gallons of sludge was delivered. This proved to be enough sludge to perform two (2) presses. A hose from the tanker was connected to the sludge handling equipment allowing the sludge transfer pumps to draw the sludge directly from the tanker.

Netzsch was represented by Mr. Tom Madland and Mr. Mark Mikula. After Mr. Mikula returned all control parameters to factory presets the first press was initiated by NCDPW personnel. The sludge was not conditioned in any manner and no polymer was added. Mr. Madland and Mr. Mikula monitored the filter press continuously throughout the entire press. The press was completed without incident. The resultant filter cake was dry and solid. The cake dropped off the plates as they were separated by the filter press. Only minor cleanup would have been required to secure the press. Samples of both the feed sludge and the sludge cake were taken. The percent solids were:

Feed sludge

6.2%

Sludge cake

37.5%

A second press was performed with the remaining sludge from Purex. The press proceeded without incident through the first three cycles. As the press neared the end of the last cycle the

sludge press feed pump increased speed and eventually shut down because of low pressure. Mr. Madland and Mr. Mikula determined that the press was near enough to the end of the last cycle to proceed with opening the press in manual mode. A malfunction of a relay prevented the manual core blow and opening of the press. Mr. Madland made a minor adjustment of the relay, witnessed by Mr. William Tropiano, Plant Maintenance Mechanic II, that allowed the automatic plate shifter to open the filter pack. The first cake was wet and sloppy. This was attributed to feed sludge that was not purged from the core because the core blow was not completed due to the malfunction. The remaining plates were opened exposing filter cake that was dry and solid. The cake dropped off the plates as they were separated by the filter press.

The percent solids were:

Feed sludge 8.9% Sludge cake 43.3%

A subsequent inspection of the sludge press feed pump and in-line static mixer revealed debris clogging the static mixer and feed pump intake line. The debris consisted of plastics, bits of cloth and pop tops from beverage cans. The pump overspeed and low pressure shutdown were the result of the clogged sludge intake line. The processes that generate the metals sludge at both facilities are closed systems therefor the source of the debris had to be the vac truck used for the sludge transfer. A method for the removal of the debris is being devised by plant operations personnel.

In conclusion, the filter press performed as specified in the contract documents. The sludge cake produced, exceeded 35% solids as required.

Nassau County Department of F		ELAP ID# 10862	
Cedar Creek Special Projects	Laboratory	Laboratory Analysis Report	
Wantagh NY 11793		Date Prepared: 10/30/2001	Page 1 of 1

The following analytical results have been obtained for the indicated sample that was submitted to this laboratory:

Location Code:

FTCSP22

Sample Description:

FTC-SP-22A

Collection Date:

10/03/01

Collection Time:

10:30

Submittal Date:

10/04/01

Submittal Time:

Sampler:

09:24 TD

#### Comments:

Sample ID#: AA13745 Analyte Units Result **MDL** Method % Total Solids % 6.2 0.1 SM 18(2540B)

If you have any questions concerning this report contact: Erick Kurz

Vincent Alonge (516) 571-7353

	Nassau County Department of Public Works		
	Cedar Creek Special Projects Laboratory	Laboratory Analysis Report	
l	Wantagh NY 11793	Date Prepared: 10/30/2001	Page 1 of 1

The following analytical results have been obtained for the indicated sample that was submitted to this laboratory:

Location Code:

FTCSP23

Sample Description:

FTC-SP-23

Collection Date:

10/03/01

Collection Time:

10:30

Submittal Date:

10/04/01

Submittal Time:

09:24

Sampler:

TD

#### Comments:

17.1.

<u> Pilyrate</u>					
Sample ID#:		AA13746			
Analyte	Units	Result	MDL	Method	
Total Suspended Solids	mg/l	1.0	1.0	SM 17 2540D	

Nassau County Department of Public Works		
Cedar Creek Special Projects Laboratory	Laboratory Analysis Report	
Wantagh NY 11793	Date Prepared: 10/10/2001	Page 1 of 1

To: MICHAEL FLAHERTY

WATER RESOURCES UNIT

HICKSVILLE, NY

The following analytical results have been obtained for the indicated sample that was submitted to this laboratory:

Location Code:

FTCSP30

Sample Description:

FTC-30 SLUDGE CAKE

Collection Date:

10/03/01

Collection Time:

12:00

Submittal Date:

10/04/01

Submittal Time:

09:24

Sampler:

TD

#### Comments:

Sample ID#:			AA13747	
Analyte	Units	Result	MDL	Method
% Total Solids	%	37.5	0.1	SM 18(2540B)

Nassau County Department of Public Works		
Cedar Creek Special Projects Laboratory	Laboratory Analysis Report	
Wantagh NY 11793	Date Prepared: 10/30/2001	Page I of I

The following analytical results have been obtained for the indicated sample that was submitted to this laboratory:

Location Code:

FTCSP22

Sample Description:

FTC-SP-22A

Collection Date:

10/03/01

Collection Time:

12:45

Submittal Date:

10/04/01

Submittal Time:

09:24

Sampler:

TD

#### Comments:

Raw sludg	e fro	m Pur	ex	
Sample ID#:			AA13748	3
Analyte	Units	Result	MDL	Method
% Total Solids	%	8.9	0.1	SM 18(2540B)

Nassau County Department of Public Works		
Cedar Creek Special Projects Laboratory	Laboratory Analysis Report	
Wantagh NY 11793	Date Prepared: 10/30/2001	Page 1 of 1

The following analytical results have been obtained for the indicated sample that was submitted to this laboratory:

Location Code:

FTCSP23

Sample Description:

FTC-SP-23

Collection Date:

10/03/01

Collection Time:

12:45

Submittal Date:

10/04/01

Submittal Time:

09:24

Sampler:

TD

#### Comments:

Filtrate				
Sample ID#:			AA13749	9
Analyte	Units	Result	MDL	Method
Total Suspended Solids	mg/l	BDL	1.0	SM 17 2540D

Nassau County Department of Public Works		
Cedar Creek Special Projects Laboratory	Laboratory Analysis Report	
Wantagh NY 11793	Date Prepared: 10/10/2001	Page 1 of 1

The following analytical results have been obtained for the indicated sample that was submitted to this laboratory:

Location Code:

FTCSP30

Sample Description:

FTC-30 SLUDGE CAKE

Collection Date:

10/03/01

Collection Time:

14:15

Submittal Date:

10/04/01

Submittal Time:

09:24

Sampler:

TD

#### Comments:

Sample ID#:

Analyte
W Total Solids

AA13750

Method
Mothod
If you have any questions concerning this report contact: Erick Kurz

Vincent Alonge (516) 571-7353

THOMAS S. GULOTTA COUNTY EXECUTIVE



JOSEPH G. PECORA, P.E. COMMISSIONER

#### COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS MINEOLA, NEW YORK 11501-4822

September 21, 2001

New York State Department of Environmental Conservation Division of Environmental Remediation Bureau of Hazardous Site Control 625 Broadway Albany, NY 12233

Attn: Carl Hoffman, P.E.

Environmental Engineer II

Re: Filter Press Test

Nassau County Firemen's Training Center, Site #1-30-042

Dear Mr. Hoffman:

As we discussed several months ago, the County has yet to accept the plate and frame filter press at the Fireman's Training Center site due to its inability to produce a consistent dry cake, as per the unit's specifications. The contractor has had the manufacturer out to the site several times to make adjustments, and has sent samples of our iron sludge to the manufacturer's laboratory for testing. Both the manufacturer and the contractor now contend that the problem with the filter press in not meeting the dry cake specification is a site water chemistry issue, not mechanical, and being so, the County should accept the filter press. However, the County is still not convinced that the problem is not mechanical.

As you know, the Purex site in Mitchel Field also uses a plate and frame filter press to dewater their iron sludge, and has had no problems for the past ten years in producing a consistent dry cake. In order to settle the FTC's filter press performance issue, it has been suggested that a sufficient quantity of Purex site sludge be transported to the FTC site for dewatering. If a satisfactory dry cake can be produced with the Purex sludge, the County will accept the FTC filter press.

Before making the arrangements to transport the approximately 2,000 gallons of Purex site sludge to the FTC site, the County is seeking your concurrence with the proposed test and, if you concur, is requesting your approval to move sludge between the two sites.

If you have any questions concerning the above request, please contact me at (516) 571-6970.

Very truly yours,

Peter J. Witkowski

Director of Hazardous Waste Services

PJW:JNW

c: Joseph L. Davenport, Acting Division Head of Sanitation and Water Supply Frank A. Scicchitano, Director of Environmental Construction Frank Amilicia, Assistant Superintendent of Sewage Treatment Plants

### New York State Department of Environmental Conservation

Division of Environmental Remediation Bureau of Hazardous Site Control, 11th Floor

625 Broadway, Albany, New York 12233-7014 Phone: (518) 402-9564 • FAX: (518) 402-9022

Website: www.dec.state.ny.us



October 16, 2001

Peter J. Wikowski
Director of Hazardous Waste Services
County of Nassau
Department of Public Works
Mineola, New York 11501-4822

Dear Mr. Witkowski:

Re: Plate and Frame Filter Press Test (site code #130042)

I am responding to your letter of September 21, 2001, regarding the County not having accepted the plate and frame filter press at the Massau County Fireman's Training Center (FTC) due to a question of the units performance. The manufacturer and contractor have asserted that the problem is related to the nature of the sludge, and not their press. The solution that you have proposed is to run a test batch of iron sludge, which is known to de-water well from the Purex - Mitchell Field site on the FTC press. If that sludge performs well on the press, the County will accept the press.

Knowing that sludge de-watering characteristics can vary widely from past municipal wastewater treatment experience, I agree that your proposed pilot test of 2,000 gallons is a conclusive way to determine whether the problem is related to the press or the sludge.

My understanding is that the iron sludge is non-hazardous, and I concur with your request to perform the test provided that you document that the Purex iron sludge is not a hazardous material prior to transporting it.

I am anxious to learn the results of you pilot test, and in the meantime, if you have any questions, please feel free to contact me at (518) 402-9564.

Sincerely,

Carl Hoffman P.E.

Environmental Engineer 2

Western Investigation Section

Bureau of Hazardous Site Control