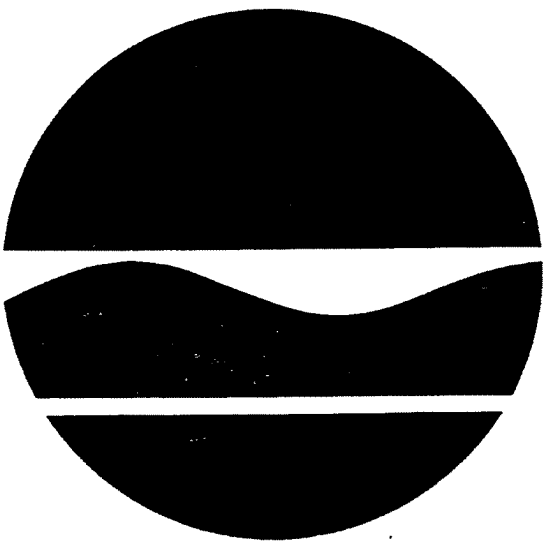
NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

REMEDIATION SUMMARY REPORT

SOIL EXCAVATION AND SITE RESTORATION PROJECT

(Monolith Removal)

VAN DER HORST PLANT NO. 1 SITE
CITY OF OLEAN, CATTARAUGUS COUNTY
CONTRACT NO. D003962
SITE NO. 9-05-008



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DIVISION OF ENVIRONMENTAL REMEDIATION
New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL *Commissioner*

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NYSDEC Site No. 905008

CONTRACT NO. D003962

CITY OF OLEAN, CATTARAUGUS COUNTY

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EXECUTIVE SUMMARY

The New York State Department of Environmental Conservation (NYSDEC) , Region 9 Office provided construction inspection and engineering services during the performance of "The Remediation of the Van der Horst Plant #1 Site", dated November 1999, Project (NYSDEC Site No. 9-05-008), Olean, New York. NYSDEC-R9 construction services included full-time inspection and monitoring of remedial activities and engineering services to ensure conformance with contract documents. Remedial work commenced on April 23, 1999. Substantial Completion of the Plant#1 Project was accomplished by October 8, 1999. Remediation was performed by Ciminelli Services Corporation (CSC) of Tonawanda, New York. CSC was selected through competitive bidding and was provided Notice of Intent to Award on February 2, 1999. CSC submitted the lowest of 16 bids with a bid price of $2,017,739.00 (see Table 2). The engineer's estimate for the work, that was prepared by IT Corporation, was $ 2,420,550.00. Notice to Proceed, which provided authorization to proceed with the project, was provided to CSC on April 12, 1999.

The Scope of Work for this Contract addressed the following major work items for the site:

- Excavation of non-hazardous soil above the groundwater table (found at approximately 18 feet deep) and properly stage on site.
- Excavation of hazardous cementitious monolithic mass soil from the groundwater table to approximately 42 feet deep and transport and dispose of in a permitted off-site landfill.
- Prepare for the disposal of materials from (15) drums located in the building used during the

RI. These drums contained soil, contaminated groundwater, decon water and used health & safety apparels. Soils were to be consolidated with the cementitious monolithic mass soil and disposed off site. Aqueous wastes from the drums would be treated on site. Health and safety apparels would be disposed of off site with the Contractor's own health & safety apparel waste.

- Size, procure and install a groundwater recovery and treatment system to process at least three excavation pit volumes, estimated to be approximately 3 million gallons total, and discharge to the (POTW).
- Backfill with the staged fill and additional granular fill below the water table followed by common fill above the water table and then topsoil and revegetation.
- Final restoration of the site and other work areas.
- Properly decommission/abandon two wells and reinstall three monitoring wells as shown on the drawings.

The remediation activities completed at the Van der Horst Plant #1 site under this project included the excavation and off-site disposal of hazardous soil from the plant site. Specifically, the contract required the removal of a highly chromium contaminated mass of soil located 18 feet below grade in the area of the facility's former plating tanks. Previous studies had shown that this mass consisted of a localized area of cementitious sand and gravel having a chromium concentration of approximately 425 mg/kg to 34,000 mg/kg. A total of 9,732.11 tons of hazardous soil were excavated and disposed from the plant site. Hazardous waste was disposed of at the Max Environmental Technologies Inc. facility in Pittsburgh, Pennsylvania and the Chemical Waste

Management (CWM) facility in Lewiston, New York. The project also included the removal and treatment of 3,057,000 gallons of contaminated groundwater once excavation activities had been completed. The groundwater was treated on site through the use of traditional ion media exchange technology. Discharge from the treatment units were to the City of Olean sanitary sewer system and were required to obtain stringent effluent limitations. Groundwater treatment was provided by Mobile Process Technologies of Memphis, Tennessee. A total of 1,343.98 pounds of chromium was removed from the groundwater during the groundwater treatment phase of the project. During treatment, the concentration of total chromium within the excavation was reduced from 124 mg/l to 14.7 mg/l.

There was only one change order issued for the project. Change Order No. 1 (final) was issued on December 15, 1999. This change order was necessary to adjust final unit price quantities to their actual values and extend the time to substantial completion. This change was also necessary to acknowledge several design variances that were addressed during the course of the project with the issuance of Proposed Change Orders (18 individual items). The major cost items associated with these changes were affiliated with the removal of additional quantities of hazardous contaminated soil which increased the quantity of excavation and disposal costs for the project. Credit was provided for a lesser quantity of non-hazardous soil removed from the site. The implementation of the Resident Relocation Program (due to the generation of petroleum odors during excavation activities) and the increase in air monitoring provisions on the site also revised the scope of work of the project and led to an increase in project costs. The contract time was also extended to allow the additional work to be accomplished and account for the delay in the completion of the work by

the Contractor.

The change order increased the amount of the Contract by a net amount of $89,386.02 to a total contract amount of $2,107,125.02. This cost increase represents a 4.2% increase in the total project cost.

The estimated and actual quantities for the remediation bid items are shown on Table 2. The estimated unit quantities for remedial operations at the Van der Horst Plant #1 Site were exceeded for six (6) bid items due to additional amounts of contaminated soil encountered at the plant site that required excavation and the related increase in the quantity of clean backfill that was provided. Four (4) bid items were lower than the contract amount due to design changes implemented during the work. No bid items varied by more than 15% or $30,000. The Contractor also provided a credit for Department staff incurred overtime during the routine operation of the project. The Contractor also provided a credit for Department staff incurred costs to account for the 37 day time extension granted the Contractor at no expense to the Department. Eight Proposed Change Orders were issued to address eighteen (18) changes to the contract. The major items dealt primarily with the implementation of a Resident Relocation Plan and increases in Health and Safety air monitoring requirements due to petroleum odors that were encountered during excavation below the groundwater table.

The remediation of the Van der Horst Site was satisfactorily completed by CSC (see Table 4).

There were several significant problems encountered during the work including:

i) Survey error that resulted in the sheet piling being initially placed in the wrong location. The error required two segments (approximately 60 feet) of the piling that had already been installed to be pulled. The Department provided the correct installation coordinates and the pilings were reinstalled at the contractor's expense.

ii) During excavation activities hazardous soil was encountered at a higher elevation than indicated by the contract document. The contract had specified that based on previous excavations and the soil boring installations on the site that it was expected that hazardous soil (exhibiting the dark brown and cemented characteristics) would not be encountered until 18 feet below grade. However, during the removal of "clean" soils above the 18' bgs elevation, contaminated soil was encountered at approximately 16 feet bgs along the east end of the excavation. This work resulted in an increase the quantity of hazardous soil excavated and disposed.

iii) As part of the contract requirements, excavation below the groundwater table was performed through the groundwater itself. Because of the high permeability of the soil (sand and gravel), dewatering the excavation during the work was not an option. During routine excavation activities, a floating emulsified petroleum material began to develop on the groundwater surface. This material had not been identified during past site investigations or remedial work at the site. The formation of this material resulted in the generation of odors and numerous complaints from residents adjacent to the site. In response to the complaints, the Department immediately implemented a Residential Relocation Program during the project. The relocation program allowed the residents to stay at a local motel

during working hours when the odors were the most noticeable. The Department also initiated heighten air monitoring for organic vapors and implemented a daily program for the collection of the floating material. It is believed that this material , that was identified as a diesel fuel oil, was not from plant related activities but from the historical oil production activities in the Olean area. Extensive citizen participation activities were performed, including biweekly mailings and meetings held with concerned residents, to keep local government officials and adjacent residents fully apprized of the status of the remediation work.

iv) An inadequate supply of trucks by the disposal firm, that CSC contracted with, resulted in a delay in the removal of contaminated soils from the site.

All these issues were satisfactorily addressed and the project completed. NYSDEC believes remediation of the Van der Horst Plant #1 Site was conducted in accordance with all applicable state and federal regulations and that analytical laboratories utilized by CSC complied with Environmental Laboratory Approval Program (ELAP) certification.

Construction was completed in accordance with the contract documents entitled *Project Specifications for The Remediation of the Former Van der Horst Plant #1 (IT Corporation* November 1999).

1.0 SITE BACKGROUND

1.1 LOCATION

The Van Der Horst Plant No. 1 Site consists of a 1.5-acre former industrial facility located within the northern section of the city of Olean, Cattaraugus County, New York. The property is bounded by a developed residential neighborhood on its north, east and south, by a railroad track on its west and by an industrial area on its west and southwest. The topography of the site is generally flat with the exception of the east side of the site which slopes gently to the east towards the residential area. Surface runoff from the site drains to the city's storm sewer system or percolates through the soil. The nearest surface water is Olean Creek which is approximately 0.25 miles east of the site. The Allegheny River is approximately 1.5 miles south of the site.

1.2 HISTORY

The Van Der Horst Corporation began chromium electroplating operations at Plant No. 1 in the early 1940s. There are two reported instances of subsurface process wastewater disposal at the plant site. One account has described a one-time dumping of iron-contaminated chromic acid into a shallow hole sometime during the early 1940s. Also, reference is made in the files of the County Health Department to an on-site wastewater disposal well, which was in operation until approximately 1952.

Since 1952, the process wastewater from the plant was discharged to the sewer system without any pretreatment. Until 1951, the plant used City water for its processes and other needs. In 1951, a 46-foot deep production well was installed on the site. The County Health Department

reported that this process supply well was found to be heavily contaminated with chromium by 1959. Use of this well was discontinued in 1960. In 1962, a new 91-foot deep process well was installed. Manufacturing operations at Plant No. 1 were ceased in July 1987.

In 1984, Plant No. 1 was listed on the NYSDEC Registry of Suspected Hazardous Waste Sites. In 1986, the Corporation received a proposed Order of Consent from the NYSDEC in reference to the facility's continued air releases through their stack emissions. In January 1987, the Corporation signed the Consent Order calling for a $5,000 fine and modifications to the emission control equipment.

In 1989, a summary abatement order was issued by NYSDEC to Van Der Horst Corporation stating that the physical conditions, due to chemical contamination at the Plant, constituted an imminent and substantial danger to public health and the environment. At the administrative hearing, held to review the case, substantial evidence was presented by the Van der Horst Corporation to prove that the company lacked financial resources to undertake remedial activities, thus making it necessary for the State to do so. Funds from the 1986 Environmental Quality Bond Act were subsequently used to investigate the site.

In 1989, another summary abatement order was issued requiring the immediate removal and disposal of large volumes of corrosive plating solutions and other hazardous substances which remained at Plant 1. The company responded with a proposed closure plan which fell short of requirements for closure but did include financial statements which demonstrated that the company

lacked financial resources to undertake the necessary activities for adequate closure. The NYSDEC requested USEPA to take action immediately because of the imminent threat posed by improperly stored chemicals inside the plant building. The chemicals inside the building were properly characterized, packaged, and removed. The removal action completed by USEPA eliminated the threat posed by the various chemicals and spent solutions which were improperly stored inside Plant No. 1.

In 1989, the NYSDEC contracted with ERM-Northeast to conduct a Remedial Investigation/Feasibility Study (RI/FS) at the Site. The RI for the Site was done in three phases. Phase 1 involved sampling and analyzing the surface and subsurface soil, groundwater, and Olean Creek sediments. Soil samples from the backyards of the residences adjacent to the Site were also taken during the Phase I RI. The samples were analyzed for volatile, semi-volatile and metals. The major contaminants detected were:

- chromium, lead and arsenic in soil/sediment; and
- chromium, lead, and tetrachloroethylene in groundwater.

These contaminants were determined to be associated with the past Plant activities.

The Phase III RI focused mainly on the investigation of the building interior at the Plant. Several monitoring wells and borings were drilled inside the building to collect and analyze groundwater and subsurface soil samples. At several places inside the building, wipe and dust

samples were collected for chemical analysis. The results of these analysis showed that the soil and groundwater beneath the building are contaminated with chromium, lead, arsenic and a few volatile organic compounds. Some of the pipelines inside the building were found to have asbestos insulation.

The highest chromium concentration detected in Plant No. 1 surface soil was 585,000 parts per million (ppm).

In March 1992, a Record of Decision (ROD) was executed for Van Der Horst Corporation Plant No.1.

The selected remedy for the for Plant No. 1 Site consists of:

1. Plant building decontamination.
2. Asbestos removal from the building and off-site disposal.
3. Plant building demolition and off-site disposal.
4. Olean Creek sediment removal.
5. Storm sewer cleaning and sediment removal.
6. Surface and subsurface soil removal, on-site solidification and placement.
7. Site restoration.
8. Possible groundwater recovery, treatment, and discharge to the local POTW pending the results of groundwater monitoring following the removal of contaminated soil from the

property.

9. Long-term groundwater monitoring for 30 years.

Remedial tasks nos.1 through 3 were completed in September 1995. Remedial tasks nos. 4 through 7 were completed in October 1997. The work described in this report covers additional remedial work that was initiated due to the discovery of an additional mass of highly contaminated subsurface soils during the previous phase of site work.

The Scope of Work for this Contract addressed the following remedial items for Plant No.1:

- Excavation and off-site disposal of approximately 4,700 cubic yards of on-site soils.
- Pumping and treating 3 million gallons of contaminated groundwater from the excavation prior to backfill.
- Backfill and restoration of excavated area.

2.0 SUMMARY OF REMEDIAL WORK

2.1 GENERAL OVERVIEW

On Wednesday, April 7, 1999 at 2:00 p.m., a preconstruction conference was held at the NYSDEC Region 9 Office in Buffalo, New York, for the remediation of the Van der Horst Plant #1 site, Soil Excavation and Restoration project. In attendance at the meeting were staff from NYSDEC and Ciminelli Services Corporation (CSC). NYSDEC issued a Notice to Proceed to Ciminelli

Services Corporation dated March 31, 1999. It was agreed that site mobilization would begin on April 12, 1999, and that working hours would be between 7:00 a.m. and 5:00 p.m., Monday through Friday.

Staff for NYSDEC consisted of: Michael Cruden, P.E., Project Manager, Gregory Sutton, P.E., Project Engineer, and Kevin Glaser, Construction Inspector.

CSC initially mobilized equipment and secured the individual sites by placing temporary construction fencing around the perimeter of the plant site. Topsoil was removed from the entire site and stocked piled either in the north end of the site or north of the Site trailers on Norfolk & Southern Railroad property. Office trailers and other ancillary equipment were also brought to the site, placed in accordance with the approved site plan and utilities installed.

Initially the contractor began remedial activities on the Plant #1 site with the removal of the top ten (10) feet of overburden soil within the area of excavation. The soil from this excavation was placed in piles along the east property boundary. This excavation work allowed for the installation of the sheet piling (50 foot lengths) to obtain the design depth of sixty (60) feet bgs. Sheet piling was then installed in the location required by the contract documents. The Contractor started piling installation in the southeast corner of the excavation and proceeded in a clockwise motion. In general, piling installation proceeded smoothly, however, in the northwest corner of the excavation a obstruction was encountered at approximately fifty-five (55) feet that prevented two pairs of piles from being driven to the design depth. This obstruction did not affect the structural capacity of the

piling design. After installation of the pilings, the other factors of the design (ie: anchors and walers) were installed and satisfactorily tested before further excavation was initiated. At this time the excavation from ten (10) feet bgs to eighteen (18) feet bgs was conducted in order to facilitate the installation of the anchors and walers. This soil was also placed in piles along the east property boundary and covered with poly.

Following the installation of the side wall support structure, excavation to the design depth began (18 feet to 42 feet bgs). This work occurred in wet conditions meaning that the soil was excavated through the water within the excavation. No attempt was made to dewater the excavation because of the highly permeable condition of the surrounding soils. Excavated soils which were deemed hazardous were placed on a conveyor system which partially dewatered the soil as it carried it up to grade. The contaminated soil was then temporarily placed on a staging pad until it could be loaded into trucks and transported off site for disposal. A total of 9732 tons of hazardous soil was excavated and disposed at the site. During excavation activities a petroleum material began to accumulate on the water surface within the excavation area. Complaints from local residents resulted in the Department implementing a Residential Relocation Plan and also taking steps to remove the material from the water surface as it accumulated. The odor also resulted in increase air monitoring on the site.

At the conclusion of the excavation activities, the Contractor began the treatment of groundwater within the excavation area. A total of 3,057,000 gallons of groundwater was treated reducing the chromium concentration in groundwater from 125 ppm to 14.3 ppm. After groundwater

treatment, the excavation was backfilled to grade, topsoil was replaced, trees planted and the site seeded and mulched. This work was completed on October 21, 1999.

During the course of the work, twenty-one (21) field orders, eight (8) Proposed Change Orders and one final Change Order were issued to CSC to address questions raised by the contractor or unanticipated site conditions (discussed in Sections 2.13 and 2.14) encountered at the site. These changes primarily dealt with several unexpected conditions including an increase in remediation soil volume for the removal of hazardous soil on the Plant#1 site, decommissioning of additional monitoring wells, implementation of a residential relocation program, an increased air monitoring and sampling requirements and extension of the contract time . These changes resulted in the issuance of Change Order No. 1(final) which increased the total Contract Amount by $89,386.02 to a total of $2,107,125.02. The major of this cost is attributed to the excavation and disposal of an additional 832 tons of hazardous waste (soil) from the Plant #1 site and the residential relocation program. All seeding, mulching and installation of the Northern Spruce trees were conducted after substantial completion of the project on October 8, 1999.

A summary of actual quantities of materials is provided in Table 2. CSC utilized a variety of subcontractors and materials suppliers to complete the remediation work (Table 4).

2.2 SITE PREPARATION

Mobilization for the remedial work began on April 23, 1999, with the delivery of the office, security and personnel decontamination trailers. The Office trailers were placed on the adjacent

Conrail property north of the site while the security and decon trailers were placed on uncontaminated areas of the site adjacent to the vehicle decontamination pad. CSC secured permission from Conrail to place the site offices and stock pile topsoil on their property north of the Van der Horst site. Zimbardi Electric Company, subcontractor to CSC, connected electrical services to all the site trailers, the electrical connections were inspected by Commonwealth Electrical Inspection Service Inc. and energized on May 6, 1999. Telephone service was provided at the Site by Bell Atlantic which was completed on May 5, 1999. Water service to the decontamination trailer and pad was installed by Shembeda Plumbing and supplied by the City of Olean Water Department by connecting to a City water line under Vine Street. Portable restrooms were used for sanitary facilities for the general workforce.

The official project sign was installed on May 11, 1999, at the Van der Horst Plant #1 Site next to the entrance and security trailer along with signs indication appropriate officials to contact regarding questions about site activities. The Olean Community had reasonably easy access to the site trailers. Individuals requesting information, questions or complaints could access the NYSDEC office, but not the rest of the site. A security trailer with guard was established at the entrance to the Van der Horst Plant #1 Site to restrict unauthorized entry and was manned 24-hours a day by Advanced Security, a subcontractor to CSC. The Plant had a permanent fence that was used for security. As work at the site progressed off the Van der Horst property, the permanent fence was removed. CSC installed a 4 foot high orange fence to include these work areas in the exclusion zone to prevent accidental trespass into work areas.

The required three days of preliminary air monitoring was completed on May 17, 18, 19, 1999.

2.2.1 STRIPPING TOPSOIL

CSC began stripping topsoil on April 29, 1999, using a Dresser TD12C-XP dozer. CSC also used a Komatsu WA 380 front loader to strip and load topsoil onto a dump truck. Topsoil was transported to one of two staging areas, north of the site trailers on Conrail property or at the north west corner of the Van der Horst Plant property.

Topsoil stripping was completed on May 7, 1999. The piles were enclosed with silt fencing and seeded with grass seed to minimize erosion impacts during the construction period. The seeding was completed on May 17, 1999.

2.2.2 DEMOLITION OF BUILDING #24

The contract specifications allowed the Contractor the option to demolish building #24, at his cost, to allow for additional operating area on the site. The demolition of building #24 was completed between May 11 and 17, 1999. A Komatsu PC 200 excavator with a grapple attachment was used to demolish the building. Steel (roof trusses, vats, doors, etc.) from building #24 went to the Eddie Arnold scrap metal recycling facility. Concrete block was placed in the large sump, within the building foundation, in 12" or smaller pieces as per the Specifications. The remaining miscellaneous debris was sent to the Southern Tier Kleenfill C&D landfill in Wellsville, NY.

CSC used the foundation and slab of building #24 as the base for the hazardous waste staging pad. CSC left approximately 6' high section of the west wall, and the SW corner of the building was used as a support for stockpiling waste, on the hazardous waste staging pad. At the conclusion of the handling of the hazardous waste the material was power washed to the satisfaction of the Department representative and the remaining building foundation, including the asphalt cover used for the storage pad was excavated and disposed off site at the Southern Tier Kleenfill C&D Landfill in Wellsville, NY.

2.3 HEALTH AND SAFETY

CSC's Health and Safety Plan (HASP) was reviewed by NYSDEC and NYSDOH as part of their initial submissions (see Appendix B, Construction Records and Reports). CSC's HASP, dated January 19, 1999, was implemented under the direction of Mr. Michael R. Labosky, C.I.H., along with the site health and safety officer (SHSO), Thomas Patrick. All personnel entering the exclusion zones were required and documented to have the proper OSHA health and safety training, heavy metals blood screening and proper personal protection equipment (PPE). The SHSO initiated health and safety activities on April 28, 1999, and held daily health and safety meetings with site personnel to discuss site contamination and PPE, especially how it related to the planned activities for that day.

Real time particulate and documentation samples were collected at four perimeter locations (one upwind and three downwind) on a daily basis during soil moving operations. A high-risk documentation sample was also collected and analyzed each week by having an operator working in the highest risk area carry a sampling device. The SHSO and the on-site engineer would review

site activities, conditions and weather data and submit one upwind sample per week and the two down wind samples most likely influenced by activities for two days per week for analysis. Due to concerns raised by area residents and at the request of the NYSDOH, all documentation samples collected were ultimately analyzed which was beyond the original contract requirements.

When particulate readings were below the specified action limit of 0.15 milligrams per cubic meter ($mg/^{M3}$), the level of PPE assigned was modified Level D. This included: Tyvek, gloves, boots, outer boots, hard hat, and safety glasses.

Additional air monitoring was performed at the request of the NYSDOH which entailed overnight realtime and documentation dust sampling which was conducted for three (3) nights in the backyard of a residential property (945 N. Fourth Street) adjacent to the site. Perimeter realtime Photoioniztion Detector (PID) readings were also taken daily for 18 days during material handling of petroleum contaminated soils. This monitoring was not part of the original contract and was done as a change order with CSC. All air monitoring results were provided to and reviewed by the New York State Department of Health during the implementation of the remedial work.

During the project, CSC provided 87.5 days of health and safety equipment and supervision.

2.4 SITE SERVICES

Twenty-four hour a day security was provided at the site by Advanced Security, a

subcontractor of CSC beginning on May 18, 1999. Security was placed at the entrance of the Van der Horst Plant #1 Site and all personnel entering the site were required to sign in at the entrance. Security personnel had not completed the 40-hour Occupational Health and Safety Act (OSHA) health and safety training and, consequently, were prohibited from entering the exclusion zones. Twenty-four hour a day security was discontinued on October 12, 1999.

No incidents of trespass by unauthorized personnel was noted during the duration of the project.

2.5 SHEET PILING/SHORING

The Contractor was required to provide a detailed design as well as all supervision, labor, materials, and equipment to construct the temporary sheet pile walls. A design of the temporary shoring wall system, including a tieback system were provided, signed and stamped by a registered NYS professional engineer. The temporary sheet pile walls were installed in conformance with the approved design, and certification of the installation was provided by a Professional Engineer engaged by the Contractor and registered in the State of New York. The temporary sheet pile walls was designed to adequately withstand all pressures including external and internal loadings to which the walls will be subjected to. The design also considered the operation of the nearby railroad and equipment operating immediately adjacent to the excavation. Prior to commencing work on the temporary sheet pile walls, the Contractor provided to the Department a complete and detailed Temporary Sheet Pile Wall Installation and Removal Plan. The plan included: i) A description and schedule of all operations related to construction of the walls, including; ii) Sequencing and progression of wall Construction, including tie back system; iii) vibration monitoring and iv)

Requirements and coordination with rough site grading.

The materials used for the construction of the temporary sheet pile wall consisted of:

- XZ series pilings - .375" thick, 14.12" height, 25.0" width, 50.0" cycle, 50' lengths
- Walers - design specified C10x15.3 actual material used C10x20
- Anchors - 1.75" square shaft, 8", 10", 12", 14" helix on a 10' shaft. 1.75" square extensions

2.5.1 Piling Installation

The installation of the sheet piling began on June 3, 1999. The Richter Corporation began work in the south east corner, (corner #4) from the contractors design layout. The location of the corners of the sheet pile design were surveyed and staked by CSC's surveyor, Popli Surveying. The installation of the first 3 or 4 pilings on either side of corner #4 were slow as the Richter Corporation needed to assure that the first pilings were perpendicular to the ground surface with no assistance from previously driven pilings. While the specifications suggested the use of a form, templet or other guide to hold the piling while driving, Richter Corp. choose to drive the piling without the use of a guide.

The work progressed in a clockwise direction with little difficulty with the installation of the piling until just south of corner #7. Piling pairs #33 and #34 were very difficult driving, hitting some obstruction at approximately 25' (35' bgs) from the final piling elevation. Several attempts were made to drive the piles through the obstruction resulting in damage to the top of the pile sections. Ultimately, all piles were driven to at least 48' below original ground level (12' short of the final

depth), and a minimum of 6' below the design excavation depth of 42'. The design engineer was consulted and certified the design variance, with these pilings resting at the revised higher elevation than required in the design, was acceptable and would not compromise the stability of the structure.

As Richter Corp approached corner #2, they discovered that they were approximately 4 feet short of the corner with the appropriate number of pilings. It was determined that a typographical error in the original coordinate table was corrected by the surveyor by calling the previous site surveyor. The previous surveyor did not have the correct coordinate but had measured tie-ins to stationary objects on site. While using these tie-in measurements, the surveyor not only changed the typographic error east coordinate but also the correct north coordinate. The DEC contacted the design engineer and received the correct coordinate in approximately one hour. CSC's surveyor was requested to come to the site and stake the proper location of corner #1. The revised northing coordinate moved the location of corner #1 approximately 5.5' north of the proper location. CSC with assistance from their sheet piling subcontractor determined it would be more economical to pull the improperly positioned pilings between corners #2 and #7 and reinstall them in the proper location than to pay for additional sheet piling to close the extended loop and the incur the expense for over excavation and additional disposal costs associated with leaving the pilings in place. The removal and reinstallation of these sections of the sheet piling took an addition 7 work days to complete.

Vibration monitoring was performed during the entire driving of the piling. The monitoring was conducted by OZA Inspections, Inc., of Lewiston, NY. Three monitors, GPS-3 digital seismographs, were placed at the site and provided continuous monitoring during the installation of

the sheet piling structure. Monitors were placed in direct contact with the ground surface near the McKean Machine Building, near the basement of the residence at 1004 Vine Street, and adjacent to the Norfolk and Southern Railroad line. The results of the monitoring indicated that all readings, throughout the installation, were within contract limits and no excessive vibration were created during the sheet piling installation.

The installation of the sheet piling was completed on June 29, 1999.

2.5.2 Piling Walers and Anchors Installation

The installation of the waler and anchor system began on July 6, 1999. The elevation of the waler was changed and approved by the design engineer from 1409' elevation to 1411' elevation to make the installation of the anchors easier. This change in elevation was necessary due to the groundwater elevation and the size of holes to be cut in the sheet piling. CSC and the Richter Corp. worked together cutting the 54, 18" holes in the sheet piling every 5' for anchor installation. As access room permitted, Righter began installing the anchors using a specialized drilling attachment to a Komatsu PC60 excavator. The anchors were 27 feet long with 4 augers flights of increasing size welded to the beginning 12 feet. The anchors were very difficult to drive in the soils at the site due to the coarse gradation of the subsurface soil (ie: sands , gravel and large cobbles). All the anchors were started at a 30 degree angle to horizontal and vertically perpendicular to the sheet piling. The anchors tended to "wander" from this position significantly during installation due to the soil conditions and/or the rotating motion of the auger. Fifty (50) of the augers were installed to the design depth while four (4) augers were only advanced 17 feet due to refusal or they were too bent

to drive further.

For quality control purposes, 6 of the 54 (>10%) anchors were pull tested. The anchors tested were those chosen by Richter Corporation, CSC and DEC as most likely to fail the test due to wandering or shortness of anchor. All pull tests were taken to between 58,000 and 60,000 pounds, exceeding the required strength of 54,000 pounds.

Walers were installed spanning as many adjacent anchors as possible, typically 3 or 4, as many as 7, and as few as a single anchor. The walers were secured to the pilings using bolts installed in the end of the anchors and washer/nut combinations to secure to the pilings. After certification by the Design Engineer that the wall system was installed in accordance with the design, the Department provided permission to begin excavation of hazardous soils.

2.6 SOIL EXCAVATION

2.6.1 0 to 10 Foot Excavation/Staging - Clean Backfill Soil

CSC decided to excavate down ten feet below original grade prior to driving sheet piling. Allowing for a 1:1 side slope, this increased the dimensions of the excavation by ten feet in all directions. Additionally, CSC decided to extend the excavate an additional approximately twenty feet to allow for equipment to move around the top of the sheet piling if necessary. The total increase to the excavation was 30 feet in all directions or approximately 3500 cubic yards .

All of this excavated soil was staged between the residential houses and the excavation on

2 layers of 10 mil poly and covered with a single layer of 10 mil poly. The poly was anchored with sand bags and ropes.

The pre-excavation phase of work began on May 18 and was completed on May 28, 1999.

2.6.2 10 to 18 Foot Excavation/Staging - Clean Backfill Soil

After the driving of the sheet piling, CSC excavated the remaining non hazardous soils to be staged on site and used as backfill. The material from 10' to 16' was placed on two layers of 10 mil poly, but was segregated from the 0'-10' soils so it could be used as the initial backfill material after groundwater treatment.

It was anticipated that this portion of the excavation would continue to 18' below the ground surface, however the 40 mil HDPE material placed on top of the monolith during the previous contract was found at the approximately 16' bgs elevation. This increased the quantity of hazardous soil and proportionally decreased the amount of non-hazardous soil by 273 cubic yards. The higher encountered elevation of hazardous waste required CSC to pull back hazardous soils along the sheet piling to allow for the installation of the anchors and walers of the sheet piling system. These soils were staged in the center of the excavation until sheet piling was completed and until disposal arrangements could be made so as not to contaminate clean areas of the site and increase handling problems.

2.6.3 18 to 42 Foot Excavation - Hazardous Soil (Monolith)

Prior to the start of the excavation of hazardous soils, a staging pad for the stockpiling and dewatering of hazardous soils was constructed adjacent to the excavation area. The 60' x 100' pad was partially constructed on top of the existing concrete floor slab of Building #24 and extended an additional 40 feet north. The entire pad area was covered with 2 inches of blacktop on top of the concrete slab and 6 inches of blacktop over a 6 inch packed gravel base in the area north beyond the floor slab of building #24 . In order to prevent drainage of contaminated water that drained from the soil or contaminated precipitation that collects on the pad, a 6 inch high asphalt berm was installed along the pads edges. A collection sump was also installed in the north west corner of the pad for the collections of any contaminated waters that were generated. Collected waters were pumped into a 1000 gallon poly tank and the quantities recorded prior to returning to the excavation. CSC requested and was granted by the Department permission to discharge collected pad run-off back into the excavation during soil removal activities. At the conclusion of the excavation work, the discharge was stopped and the remaining waters were taken off site for disposal. As part of the agreement, CSC agreed to treat three times the volume of water that they discharge to the excavation.

The excavation of hazardous soil began on July 14, 1999. Prior to excavation of hazardous materials the dimensions of the surface inside the sheet piling was documented by a licenced surveyor per the contract specifications.

CSC used a Komatsu PC 300 inside the sheet piling to excavate the waste. The waste was

initially excavated within the sheet pile area and any free water allowed to drain back into the excavation area. The soil was then loaded onto the first of two 60 foot conveyors. The conveyors carried the wastes up to ground level and deposited it on to a staging pad. From the pad, CSC used a front loader to directly place the waste into semi trailers for transportation to an approved disposal facility.

CSC excavated the four feet of hazardous waste above the water table first to maximize the reach of the excavator trying to obtain the required depth of 42 feet below ground surface. As CSC progressed in the excavation, it became apparent that the PC 300 could not reach the construction depth (42' bgs). On July 22, 1999, CSC installed a 10' extension onto the arm of the PC 300 and resumed excavation. Again it was concluded that the PC 300, even with the extension, could not reach the required contractual depth for the entire excavation. On August 5, 1999, CSC cut a section out of the sheet pile wall between corners #2 and #3 at one foot above the waler to allow the removal of the PC 300 from the excavation. CSC brought on site a Komatsu 250 with a 54' reach to continue the excavation. It was quickly determined that this machine could not complete the excavation to the required grades,,and it was replaced on August 9, 1999, with a Komatsu 400 with a 64' reach. This machine was used to complete the excavation of hazardous waste to 42' below the ground surface +/- 6", confirmed by a licenced surveyor, as required by the contract. Excavation of hazardous soil was completed on August 26, 1999. The final survey of the bottom of the excavation was completed August 27, 1999. The last hazardous soil was shipped from the site on September 2, 1999.

2.6.4 Petroleum Cleanup Effort During Soil Excavation

As the excavation of hazardous waste proceeded below the water table, a noticeable floating petroleum surface layer and odor were noted within the sheet piled area. The material appeared as a light brown emulsified layer of material with an odor similar to diesel fuel. Samples of the petroleum material were analyzed and the results indicated that it was diesel fuel.

As a result of the odors being generated during excavation activities, on July 29, 1999, at the recommendation of the New York State Department of Health (NYSDOH), the NYSDEC began a voluntary relocation of citizens during working hours. The citizens that were relocated were either residents that lived adjacent to the site or lived in the immediate area of the site and reported they were experiencing health related symptoms due to the odors. The relocation continued throughout the soil removal operations. Details of the relocation program is discussed in Section 2.13.

As a changed site condition, the Department directed CSC to remove the petroleum material from the water surface in an attempt to reduce the odor. This work was covered under Proposed Change Order #3. On August 6, 1999 CSC attempted to use a ¾" submersible pump to remove the oily layer to a frac tank on site. This pump proved to be inadequate for this application because of the head to pump out of the excavation and into the frac tank. After additional attempts to remove the oil via a pumping system proved ineffective, the DEC directed CSC purchase oil absorbent materials and use them to remove soil from the excavation area. CSC was only able to immediately obtain 500 feet of a 5 inch absorbent boom. No further absorbents would be available until the following day. To expedite removal DEC procured absorbent pads and booms from a Department's

Emergency Response Contractor, Nature's Way, Inc. Twenty (20) bundles of absorbent pads and 120 feet of 8-inch absorbent booms were delivered to the site at 5:00 PM on August 9, 1999, and disbursed over the surface of the groundwater in the excavation by 6:00 PM of that day.

As part of daily maintenance, at the close of each day, the condition of the absorbent materials was evaluated by Department personnel. The berms were evaluated to determine if they were saturated or had more absorbent capacity as well as determine if additional absorbent materials were necessary to absorb any excess petroleum that may have been disbursed during excavation activities that day. Spent absorbent materials were collected using the on-site excavator, a small aluminum boat and laborers to consolidate the pads and drum them for future disposal. The drums were sealed and staged adjacent to the hazardous waste staging pad while disposal arrangements were made.

While the Department continued the petroleum removal process through the excavation phase and into the water treatment phase of the remediation, it was noted that once excavation activities ceased, there was no further accumulation petroleum material generated during the water treatment phase of the remediation. The pads were maintained during the groundwater treatment phase of the project but were not required to be removed on A daily basis. There was also no odors generated beyond the edge of the excavation during this phase of the work. The last of the absorbent pads were collected from the excavation on September 29, 1999, at the conclusion of the groundwater pumping.

At the conclusion of the work, CSC made arrangements for the disposal of the 40 drums of waste generated by the absorption of petroleum type materials in the excavation. An analysis of the spent absorbent pads found them to be petroleum-contaminated and exceeded the characteristic hazardous waste limit for chromium. The drums were removed from the site by Tonawanda Tank Transportation to an approved disposal facility, Michigan Disposal, on October 5, 1999.

2.7 GROUNDWATER TREATMENT

CSC subcontracted for the treatment of 3,000,000 gallons of chromium contaminated groundwater to Mobile Process Technology (MPT) of Memphis, Tennessee. CSC was responsible for the delivery of a constant flow of contaminated groundwater to the a 21,000 gallon storage frac tank (Baker Tank®), and MPT was responsible to treat the water to required levels with discharge to the local sanitary sewer and ultimately the Olean Wastewater Treatment Facility. Maximum discharge parameters were provided by the City of Olean, Director of Public Works, Mr. Peter Marcus, in a letter to the Department dated October 22, 1998, and based on the limits included in the City Sewer Use Ordinance. The discharge was also limited to a maximum flow rate of 250 gallons per minute Effluent samples were collected and analyzed hourly at the site along with a composite sample of the discharge that was collected and analyzed within 24 hours by an outside accredited laboratory. Treatment of groundwater was provided by MPT through the use of a multi-stage ion exchange system entirely contained in a 48 foot box trailer. The area was underlaid with 10 mil poly to contain any spills or leaks from transfer hoses, pumps or other treatment equipment.

CSC began installing a pumping system on August 30, 1999. NYSDEC requested a

modification to CSC groundwater collection work plan which was included in PCO No. 8. The revision provided for the extraction of water from the center of the excavation instead of the edge so as to prevent short circuiting and dilution of the water in the excavation. To accommodate the Department's direction, CSC used a 480 volt, 4 inch submersible pump suspended from a ⅜" cable anchored to the sheet piling on either end. The cable was installed to bisect the excavation, and the pump suspended at approximately the center of the excavation and the intake placed approximately 10 feet below the surface of the water. The contaminated water was pumped to a 21,000 gallon portable steel frac tank. CSC installed a float control to turn off the supply pump when the frac tank was 80% full.

Groundwater treatment began on September 1, 1999. The chromium concentration of initial influent was 124 ppm and deep yellow in color. The first 12,000 gallons treated were recirculated to the frac tank pending field verification that the discharge met the required discharge limits for the City of Olean. Field analysis found the effluent concentration to be <0.1 ppm of both total and hexavalent chromium, meeting the permitted discharge limits of 10 ppm total chromium and 5 ppm hexavalent chromium (>99% removal efficiency). With this confirmation, treatment of water began with a continuous discharge to the City of Olean waste water treatment facility via the sanitary sewer system.

The MPT treatment unit consisted of 16 or 18 - 1000 gallon ion exchange pressure vessels mounted in a semi trailer. These vessels were used in series to step down the concentration of chromium to meet the discharge limits. MPT ran the system at 200 - 250 gallons per minute keeping

the flow below the maximum rate accepted by the WWTP of 250 gallons per minute.

MPT had anticipated running the system 24 hours per day, but found the capacity of their treatment unit insufficient to achieve this level of treatment. The first semi trailer unit had been exhausted after 435,000 gallons in a 3 day period. Because MPT could not continuously keep a sufficient supply of undepleted treatment units on site, MPT went to treating water 12 hours per day and having down time between the depletion of one unit and the arrival of the next. Spent absorption units were returned to Mobile Process facility in Tennessee for reclamation of the chromium from the exchange media.

Groundwater treatment was completed on September 28, 1999, at a total volume of 3,057,000 gallons and exhausting 3 semi-trailer mounted treatment units. The additional 57,000 gallons was an amount 3 times the quantity returned to the excavation by CSC from dewatering and decontamination processes. The chromium concentration of the influent after groundwater treatment was complete was 14.3 ppm. The results of influent total chromium concentrations in the groundwater is provided in Table 1. A total of 1,344 pounds of chromium was removed from the groundwater during the groundwater treatment phase of the project. Prior to the termination of the treatment program, all discharge groundwater data was reviewed by the NYSDOH, NYSDEC and Cattaraugus County Department of Health. After review all agencies were in agreement with respect to termination of groundwater pumping operations. A total of 3.2 volumes of the groundwater within the excavation area was provided treatment.

2.8 TRANSPORTATION AND DISPOSAL OF SITE WASTES

Hazardous wastes generated during this remedial program included soils and oil absorbent materials from the Van der Horst Plant #1. The soils and absorbent materials were determined to be hazardous by TCLP analysis for chromium.

These wastes were transported to a USEPA approved Treatment, Storage, Disposal Facilities (TSDF) for treatment and proper disposal. The soils were sent to both Chemical Waste Management in Model City , NY, and to Mill Service, Inc, in Yukon, PA., a subsidiary of MAX Environmental. These wastes were transported by one of several permitted hazardous waste transportation companies, Price Trucking, Dart Trucking, Specialty Transportation Services, Page Etc., U.S. Bulk Transportation, Tonawanda Tank Transportation, Franklin Environmental Transportation, Wills Trucking Inc., Waste Management Transportation of Connecticut, Franks Trucking Inc. Transportation services were generally contracted for by CSC directly through the disposal facility. Because of this, there were numerous days where an ample supply of waste was available at the site ready for shipping, but there were a insufficient number of trucks available to ship that day. The contractor's inability to ship soil in a efficient and timely manner lead to an extension of the schedule to complete the excavation, transportation and disposal of hazardous soil on the site. All personal protection equipment (PPE) was sent off the site with the hazardous waste.

The 40 drums of contaminated absorbent materials were transported by Tonawanda Tank Transportation to Michigan Disposal, a USEPA approved TSDF for treatment and disposal.

Non-hazardous wastes included miscellaneous non-hazardous solid wastes from general plant operations. All transportation and disposal of non-hazardous waste was provided by the City Olean as part of the City's normal garbage pickup in the site area.

2.9 CLEAN BACK FILL MATERIAL

The fill material approved for use at the Van der Horst Plant #1 site was a 4" or less bankrun gravel.

CSC obtained this material from the Work and Silvas Gravel Pit in the Town of Allegany, NY. Sieve analysis of the fill indicated that the material met the requirements of the specifications. A site visit to the gravel pit found that some oversized rocks would be encountered during the excavation of the bankrun material and advise CSC that any oversize materials would have to be picked out by the contractor at the site when encountered. A sample of the fill was submitted for a proctor analysis to determine maximum compaction densities; however, it was determined that the quantity of large stones in the material prevented the material from being analyzed under standard ASTM guidelines. Based on the determination that density testing could not be performed in accordance with ASTM procedures, the testing for compaction of the fill was waived by the Department. In lieu of testing compaction, above the water table was still completed through the use of a minimum of 4 passes with a vibratory drum roller.

During the backfilling of the excavation, a quantity of silty mud was developed that would not percolate in the fill material. This mud required the final 300 cubic yards of backfill to be a

coarse 4"-10" screened rock to allow the mud to fill the voids and provide a stable base for the topsoil.

2.10 TOPSOIL, SEED AND MULCH

Topsoil for the Van der Horst Plant #1 Site was the same topsoil that was stripped from the site prior to excavation. Additional soil was received from the Work and Silvas Gravel pit in the Town of Allegany to cover the area where the former building 24 was located.

Prior to the placement of topsoil, a subgrade survey was established and a final grade stakes were installed to insure adequate cover (6 inch minimum) was being provided. The topsoil was placed from October 11 to 21, 1999. The topsoil was back dragged by a Komatsu D37 dozer to a smooth surface and large rocks removed prior to hydroseeding. LCJ Contracting was retained by the contractor to hydroseed, fertilize and mulch the entire site including the topsoil soil staging area north of the site trailers on Conrail (currently Norfolk & Southern Railroad) property. LCJ Contracting also obtained and installed the 44 - 6 to 9 foot tall Norway Spruce trees at the Van der Horst Plant #1 site as required by the contract.

The hydroseeding was completed on October 25, 1999, using the contract specified seed mixture and fertilizer quantities.

Since the seeding occurred very late in the growing season, LCJ chose to cover the entire site with shredded straw prior to hydroseeding as an added mulch layer. The dispersion of the straw and

hydroseed on a windy day lead to several complaints from local residents. Several complaints were received by the Department regarding loose straw and typical green hydroseed mulch blowing around the yards of adjacent homes and being deposited on several private vehicles and structures. In response the Department and LCJ addressed the concerns of the three (3) vehicle owners by providing them with money to have their vehicles cleaned at the local car wash facility. The remaining blown straw was minimal on ground surfaces and quickly dissipated.

Forty-four (44) Norway Spruce trees were delivered and planted on October 25, 1999. While the contract specified that trees be a minimum of six (6) feet in height, The small trees brought to the site ranged between 6 and 9 feet in height. The trees were staked, tied off and mulched on October 26, 1999. It should be noted that even though seeding occurred late in the growing season, a healthy stand of grass covered the site by December 1, 1999.

2.11 MONITORING WELL ABANDONMENT AND RESTORATION

Three (3) monitoring wells (MW-16, 17S and 17D) were scheduled to be abandoned in accordance with the requirements of the Contract Documents. In addition to the monitoring wells on the site, CSC was directed per PCO#1 to abandon one (1) additional monitoring well and two (2) production wells. CSC was also required to replace MW-5S as it was damaged by CSC during the excavation. CSC contracted with Maxim Environmental to perform the decommissioning and installation of all monitoring wells on the site.

The drilling was done in two phases. Phase #1, monitoring wells MW-16 and MW-17D were

decommissioned on May 3 and 4, 1999, by overdrilling using a 4.25 inch hollow stem auger to the design depth of the boring and backfilled with a bentonite/Portland cement grout mixture. Monitoring well MW-17S was removed during the waste excavation. Monitoring well MW-17S was not required to be abandoned because its depth did not exceed the total depth of the excavation. This well was removed during excavation activities later in the project.

Phase #2, on October 18, 1999, Buffalo Drilling, a subcontractor to Maxim Environmental, began to decommission MW-7 and the two (2) - 6 inch production wells, located North of building #24 and to reinstall MW-5S, MW-16, MW-17D, MW-17S.

MW-7 was overdrilled and backfilled with bentonite/Portland. The production wells were abandoned by tremie grouting the casing with cement-bentonite grout to surface, then cutting off the casing 5 feet below ground surface, and backfill with common fill.

This phase was completed on October 22, 1999. Drilling logs are provided in Appendix D of this report for reference.

2.12 AIR MONITORING PROGRAM

2.12.1 Documentation Air Sampling

Site perimeter documentation air monitoring was conducted every day that potentially contaminated soils were excavated, stockpiled or shipped. Four monitoring stations were set up daily, one upwind and three downwind. The locations were selected daily, based on where work was

being performed on the site, the type of work and the prevailing wind direction that day. The sample locations were placed along the boundary of the work area which also was the site property line. Monitoring locations were periodically evaluated during the day and locations were amended if a change in the work or the direction of the prevailing wind warranted.

The contract specified that the contractor was required to submit for analysis one (1) upwind sample per week and two (2) downwind samples from two (2) different days during the work week. The specific samples to be analyzed were to be determined by the Contractor's Health and Safety Officer and the Department's Site Inspector each week based on activities conducted at the site and the results of the realtime air monitoring. All non-analyzed samples were archived at the site trailer. Documentation samples for dust were collected on filters over a period of approximately 8 hours (typical work day) and sent to an accredited laboratory for analysis of total dust, total chromium and total lead by the methods specified in the Contract documents. During the excavation activities, several complaints were received by the Department and the NYSDOH regarding dust being generated at the site and effecting adjacent residences. Although realtime time air monitoring did not show a exceedance of guidance criteria, at the request of the NYSDOH, DEC agreed to analyze all documentation samples collected and archived. The DEC analyzed an additional 99 documentation air samples per NYSDOH requests which were addressed under Proposed Change Order #4.

The NYSDOH has reviewed all of the results from documentation sampling and determined that there was no significant release due to remedial activities.

In addition to the perimeter air monitoring, CSC sampled one high risk worker each week using the same sampling filters and procedures. The CSC SHSO reviewed this data and determined that no worker had been exposed to levels of contamination exceeding the OSHA guidelines.

2.12.2 Realtime Air Monitoring

2.12.2.1 Dust Monitoring

Particulate dust monitoring was conducted every day that potentially contaminated soils were handled. Particulate dust was monitored initially with a Miniram® Model MIEPDM-3 particulate monitors at 4 locations along the site perimeter. These locations were chosen daily relative to the work being performed and the prevailing wind direction locating one monitor upwind and three downwind of work areas. Time Weighted Average (TWA) readings were manually taken every 15 minutes or less. An action level of 150 ug/m3 at the site perimeter was established by the NYSDOH. There were several instances when this level was exceeded; however, each was investigated and determined to be either a mechanical/electrical malfunction of the meter or the presence of insect activity in the instruments detector area.

CSC started the remedial work using MiniRam model MIEPDM-3 per the contract specifications. The MIEPDM -3 does not have data logging (storage) capabilities and required a technician to read the TWA reading every 15 minutes or less. These instruments have a detection limit of 10 ug/m^3; however, any fog or rain would interfere with the instrument and would result in high readings from the instrument. These instruments also had several electrical problems during their operation that resulted in a baseline drift. The drift could also be caused by any number of

changing environmental conditions such as temperature or humidity. On several occasions instruments were returned to the manufacturer to be evaluated and repaired. To address this situation and to insure accurate air monitoring on August 19, 1999, the DEC directed the Contractor to begin using a MiniRam model MIE PDR-1000 for the rest of the contract. This model has a detection limit of 1 ug/m^3 and has data logging capabilities. These instruments produced a computer generated data table for easy review. Air sampling was also conducted at 5 second intervals. Use of the MiniRam model MIE PDR-1000 was continued at the site until the completion of the excavation and transportation and backfilling of soil was completed.

2.12.2.2 Organic Vapor Monitoring

After encountering a petroleum material in the excavation, the DEC requested CSC to perform monitoring for organic vapors around the excavation and around the site perimeter at least 3 times a day with a Photo Ionization Type instrument. This monitoring was conducted from July 29, 1999, until September 2, 1999. This monitoring did not detect any recordable concentrations of volatile organic compounds during the monitoring period at the site perimeter. However, trace levels were detected in the work area adjacent to the soil conveyors during soil moving operations.

In response to concerns relating to the petroleum odors from the site, the NYSDOH did site perimeter and neighborhood surveys using a Flame Ionization instrument. Based on these surveys and olfactory perception, the NYSDOH recommended relocation for adjacent residents complaining of irritation to the odors or having pulmonary or respiratory problems potentially irritated due to the

odors.

2.13 RESIDENTIAL RELOCATION PROGRAM

During the excavation of hazardous waste, a petroleum type product was encountered and collected on the groundwater surface. This product produced an odor similar to "old" diesel fuel which was carried by prevailing westerly winds into the residential neighborhood adjacent to the site. On July 26, 1999, the Department received a complaint about dust leaving the site and impacting a residential pool at 435 N. Fourth Street and the petroleum odors. To address the dust complaints, additional air monitoring was performed and engineering controls to reduce dust generation were implemented on an as needed basis. To address the odor complaints the DEC, with concurrence from the NYSDOH, proposed and implemented a relocation plan for residents living immediately adjacent to the site and those near the site with pulmonary or respiratory symptoms related to the petroleum odor. The relocation began on July 29, 1999, with the residents being provided access to rooms reserved at the Castle Inn in Olean.

The Relocation Program was officially offered from 7:00 AM until 5:30 PM on work days, however the residents had control of their rooms at the Castle 24 hours a day, 7 days a week during the relocation. The residents were also offered reimbursement for any lunch receipts for days of relocation.

During relocation, fourteen (14) local families took advantage of the relocation program at one time during the thirty-four (34) days the program was in effect for a total of 420 days at a cost

to the Department of approximately $14,000.

After the excavation was complete and the petroleum material removed from the water surface, odors were reduced to the point where it was no longer noticeable beyond the site perimeter. At this time, the Relocation Program was ended September 8, 1999.

2.14 FIELD ORDERS

Field Orders are provided for clarification of work provided in the specifications or are requested beyond the original scope of the project. If costs were incurred, they were included under existing line items and in subsequent Proposed Change Orders.

Copies of all Field Orders and related documentation are included in the project records maintained by NYSDEC, Division of Environmental Remediation. The specifics of each item detailed in Appendix E.

2.15 PROPOSED CHANGE ORDERS/CHANGE ORDERS

Eight proposed change orders were issued by NYSDEC to address unforeseen site conditions during the course of the work. These proposed change orders were incorporated into a formal change order (Change Order #1(final)) at the conclusion of the project.

A description of the individual Proposed Change Orders (PCOs) and Change Order #1 (CO) is provided in Appendix E - Description of Change Orders and Field Orders. Copies of all proposed

change orders and formal change order are included in the project records maintained by NYSDEC, Division of Environmental Remediation.

2.15.1 Change Order No. 1

Change Order No. 1 was issued on December 15, 1999 (Appendix F). This change order was necessary to adjust final unit price quantities to their actual values and extend the time to substantial completion. This change was also necessary to acknowledge several design variances that were addressed during the course of the project with the issuance of Proposed Change Orders (18 individual items). The major cost items associated with these changes were affiliated with the removal of additional quantities of hazardous contaminated soil which increased the quantity of excavation and disposal costs for the project. Credit was provided for a lesser quantity of non-hazardous soil removed from the site. The implementation of the Resident Relocation Program and the increase in air monitoring provisions on the site also revised the Scope of Work the project and led to increase in project costs. The contract time was also extended to allow the additional work to be accomplished and account for the delay in the completion of the work by the Contractor caused by waste transport problems.

The Change Order increased the amount of the Contract by a net amount of $89,386.02 to a total contract amount of $2,107,125.02. This cost increase represents a 4.2% increase in the total project cost. The specifics of each item in this Change Order is provided in Appendix E.

3.0 CONCLUSIONS AND RECOMMENDATION

3.1 CONCLUSIONS

In general, the remediation of the Van der Horst Plant #1 project was satisfactorily completed by CSC. However, several problems were encountered during the project that led to a delay in the completion of the project. These delays were associated with significant problems associated with the contracting for hauling the waste to the disposal sites and a delayed mobilization to the site by the Contractor in the beginning of the project. While these delays did contribute to an approximately 60 - day extension of the project, costs for this work were born by the contractor. While other problems, such as a increase in hazardous soil, the resident relocation program, and collection of oil material, etc., resulted in an increase in cost to the project, they were all satisfactorily addressed by the contractor without a significant delay in the completion of the work.

CSC's bid price of $2,017,739.00 was exceeded by approximately 4.2%, primarily due to a $70,937.00 increase in cost attributed to the disposal of hazardous soil from the Van der Horst Plant #1 Site and the addition of $67,882.21 related to eighteen (18) changes to the project that was included in the eight (8) Proposed Change Orders issued for the project. The major cost associated with the PCOs was attributed to the implementation of a Residential Relocation Program and the increase in air monitoring required due to the occurrence of petroleum odors during excavation activities. Other cost increases can be attributed to the unknown items noted above and the abandonment and reinstallation of additional monitoring wells and several other exceedences

in contract quantities. The final Contract Price for this project is $2,107,125.02.

As this is anticipated to be the final stage of remediation of the Van der Horst Plant #1 property, Table 7 provides a summary of the remedial activities completed at the site. Table 7 also provides a summary of the quantity of both non-hazardous and hazardous materials that was removed from the property. In total, 15,616.69 tons (~ 8,675 cubic yards) of non-hazardous soil, sediment, concrete and asbestos and 15,922.82 tons (~ 8,845 cubic yards) of hazardous soil and concrete were removed from the property and disposed at a permitted disposal facility. As reflected in Table 8, the total cost for the remediation of the Van der Horst Plant #1 property was $9,767,837.00. This cost includes expenditures made during the USEPA removal action, NYSDEC investigation of the site, demolition of the plant buildings, excavation of surface soils and excavation of deep soils during the current phase of remedial work. The cost figure also includes the Department's incurred personnel costs up to September of 1999. Additional costs would be applicable for the completion of the remedial work through December 1999 as well as completion of this report and continued long-term groundwater monitoring requirements. Table 8 also includes the remedial costs expended for the cleanup of the Van der Horst Plant #2 facility, located approximately 0.5 miles north west of the Plant #1 facility. The costs associated with the remediation of this portion of the Van der Horst #2 facility ($4,085,261.00) resulted in a combined cost for the investigation and remediation of both the Van der Horst Plant Nos. 1 & 2 sites of $13,853,098.00.

The remedial work, completed as part of this project, has eliminated the potential significant

human health and environmental threat from the chromium contamination to the groundwater by removal of the source of chromium contamination at the site. The accumulation of all the work on the site has i) eliminated a significant physical hazard posed by the dilapidated plant buildings; ii) eliminated the nuisance hazards and the visual detriment associated with the former plant buildings; and iii) eliminated the potential significant human health and environmental threat with the removal of contaminated soils from the residential yards and plant site. The results of this remedial program at the Van der Horst Site will be enormously beneficial to the residential community in terms of long-term effect on property values and quality of life in the immediate neighborhood.

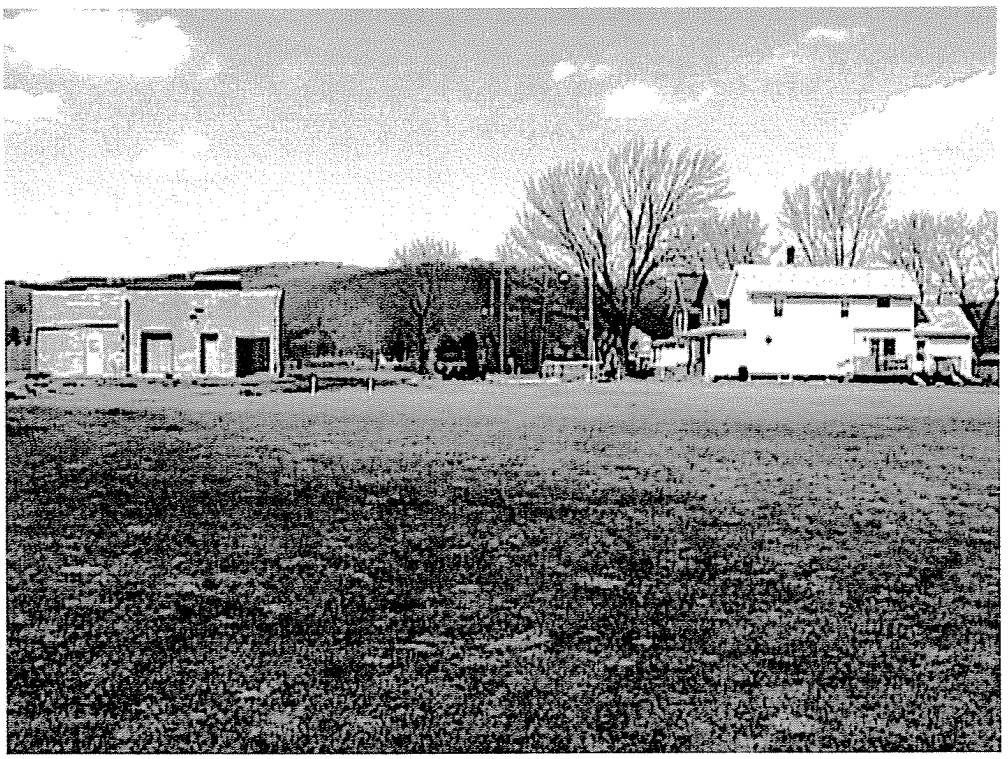
3.2 RECOMMENDATIONS

1. Long-term groundwater monitoring will be implemented and evaluated in accordance with the long term operation and maintenance provisions included in the Operation and Maintenance plan prepared for the site.

2. The site shall be reclassified to a Class 4 site on the New York State Registry of Inactive Hazardous Waste Sites. The Class 4 designation signifies that remediation has been completed and a long term monitoring program is in place.

SITE PHOTOS

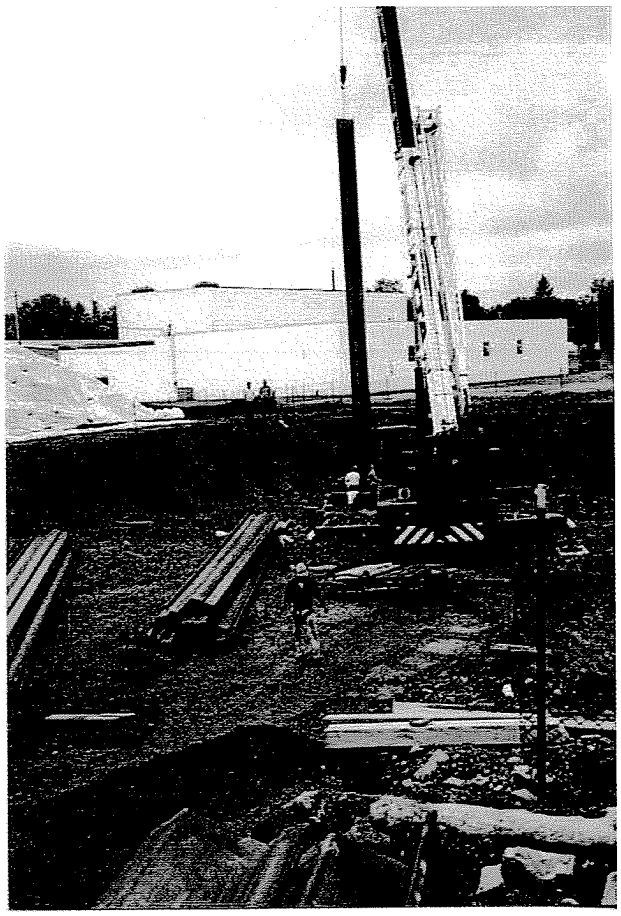
Remedial Construction Photos
Van der Horst Plant #1
Olean(C), Cattaraugus
Site No. 905008/ Project No. D003962



1. Preconstruction: View of Site looking north towards Vine street. Note Spruce trees have already been removed by Department personnel.

2. Non-Hazardous Soil Excavation: Initial 15 foot cut in area of shoring to remove uncontaminated soil from the work area.

Remedial Construction Photos
Van der Horst Plant #1
Olean(C), Cattaraugus
Site No. 905008/ Project No. D003962



3. Shoring Installation: Setting sheets in place.

4. Shoring Installation: Excavation down to 18' bgs to install anchors & walers

Remedial Construction Photos
Van der Horst Plant #1
Olean(C), Cattaraugus
Site No. 905008/ Project No. D003962

5. Shoring Installation: Overview of excavation and anchor installation.

6. Shoring Installation: Installing anchors into shoring.

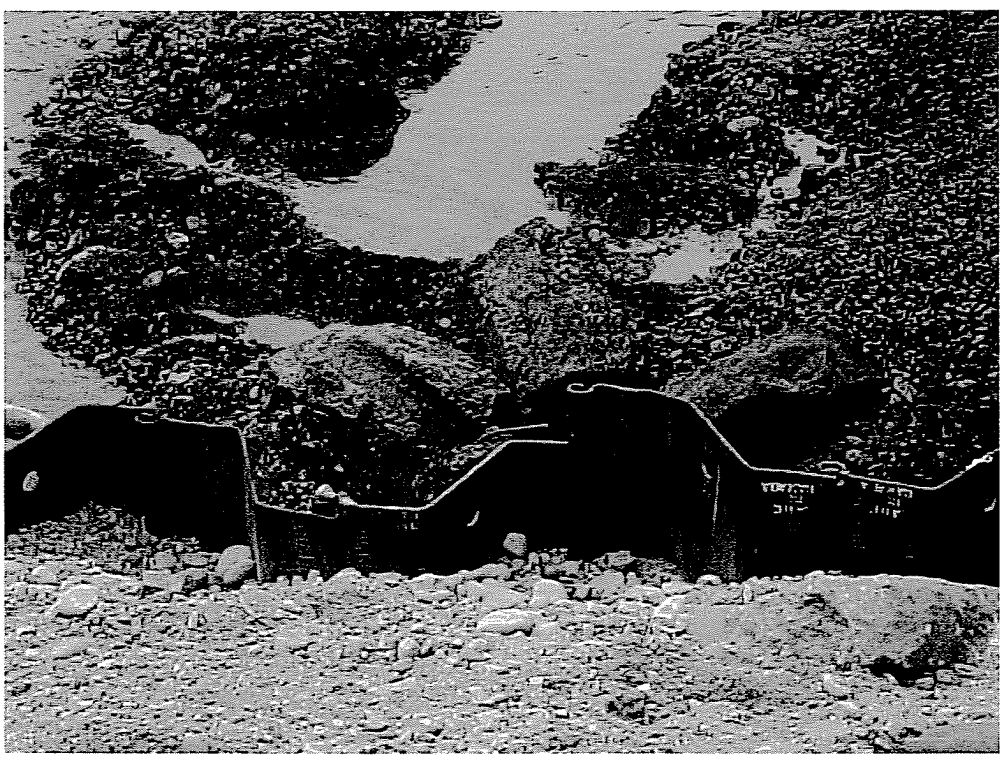
Remedial Construction Photos
Van der Horst Plant #1
Olean(C), Cattaraugus
Site No. 905008/ Project No. D003962

7. Hazardous Soil Excavation: Start of excavation of soil below 18' bgs.

8. Hazardous Soil Excavation: Continuing excavation of soil below groundwater. (Note Yellow water)

Remedial Construction Photos
Van der Horst Plant #1
Olean(C), Cattaraugus
Site No. 905008/ Project No. D003962

9. Hazardous Soil Excavation: Oil/Scum build up on water surface in excavation. Oil absorbent booms and pads on surface.



10. Hazardous Soil Excavation: Large chunks of solidified "monolith" soil.

Remedial Construction Photos
Van der Horst Plant #1
Olean(C), Cattaraugus
Site No. 905008/ Project No. D003962

11. Hazardous Soil Excavation: Excavating through chromium contaminated groundwater.

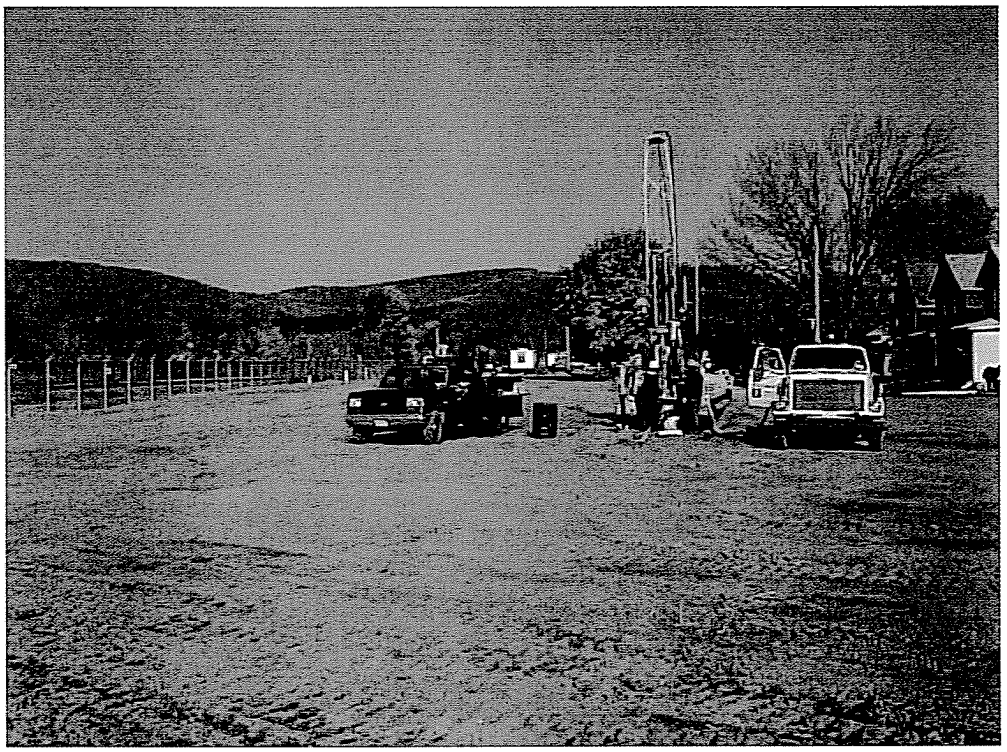
12. Hazardous Soil Excavation: Hazardous Soil staging pad.

Remedial Construction Photos
Van der Horst Plant #1
Olean(C), Cattaraugus
Site No. 905008/ Project No. D003962

13. Groundwater Treatment: Groundwater Treatment Unit Trailer w/ submersible pump suspended in center of excavation.

14. Backfilling: Groundwater treatment of 3,056,000 gallons was completed and backfilling was begun.

Remedial Construction Photos
Van der Horst Plant #1
Olean(C), Cattaraugus
Site No. 905008 / Project No. D003962



15. Restoration: Installation of replacement monitoring wells.

16. Restoration: Completed site showing signs of grass already growing.

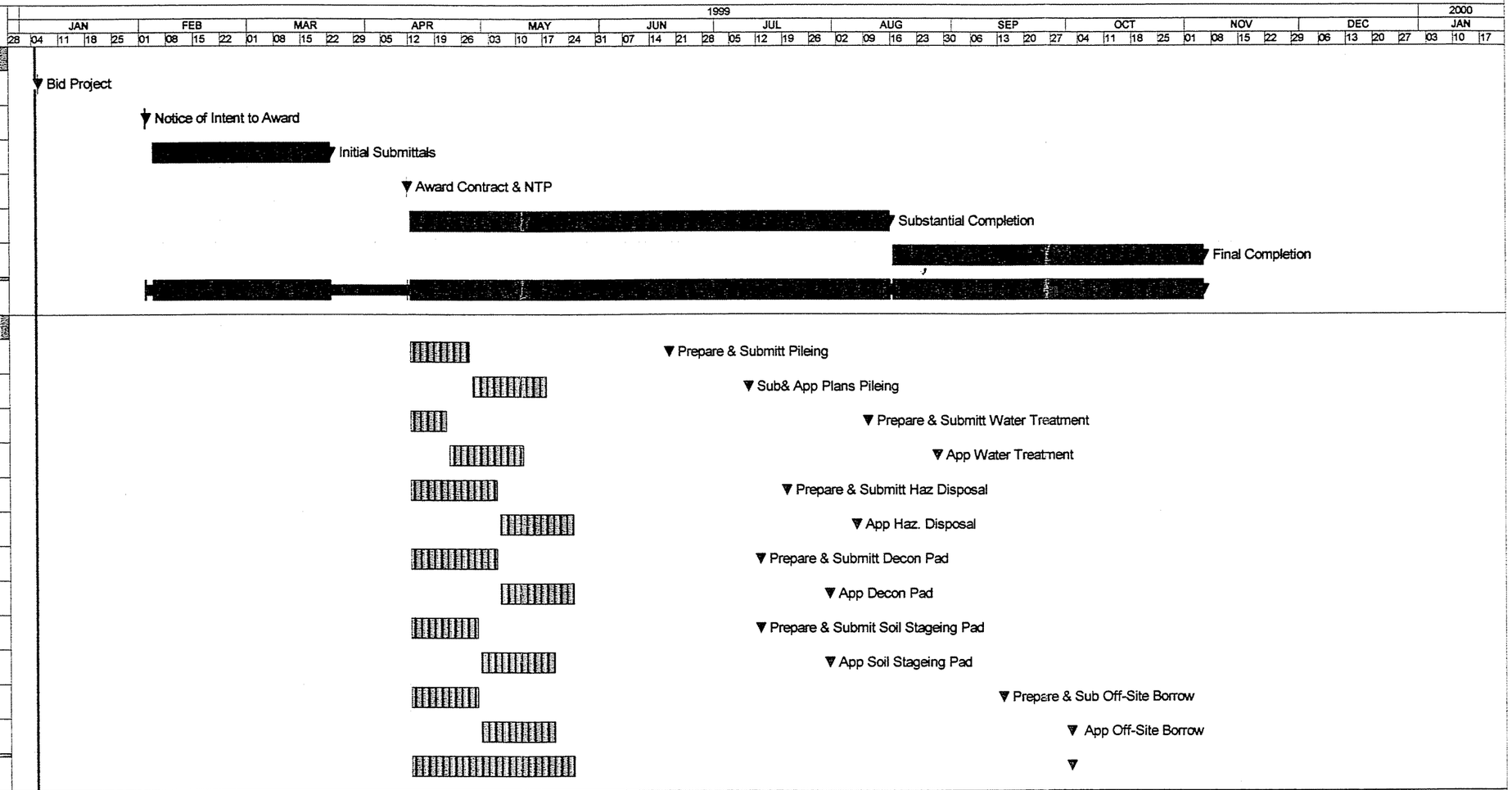
TABLES

Report: Classic Gantt
Layout: Classic Gantt
Filter: All Activities

SureTrak Project Manager
Vanderhorst

Ciminelli Services Corp
Report Date: 30APR99

Act ID	Activity Description	Rem Dur	Early Start	Early Finish
Contract Requirements				
1000	Bid Project	0	06JAN99	05JAN99 *
1002	Notice of Intent to Award	1d	02FEB99 *	02FEB99
1003	Initial Submittals	47d	04FEB99	22MAR99 *
1010	Award Contract & NTP	0	12APR99 *	11APR99
1015	Substantial Completion	124d	12APR99	15AUG99
1016	Final Completion	60d	16AUG99	05NOV99
		217d	06JAN99	05NOV99
Key Submittals				
1023	Prepare & Submitt Pileing	12d	12APR99	27APR99
1024	Sub& App Plans Pileing	14d	28APR99	17MAY99
1025	Prepare & Submitt Water Treatment	8d	12APR99	21APR99
1026	App Water Treatment	14d	22APR99	11MAY99
1027	Prepare & Submitt Haz Disposal	17d	12APR99	04MAY99
1028	App Haz. Disposal	14d	05MAY99	24MAY99
1029	Prepare & Submitt Decon Pad	17d	12APR99	04MAY99
1030	App Decon Pad	14d	05MAY99	24MAY99
1031	Prepare & Submit Soil Stageing Pad	14d	12APR99	29APR99
1032	App Soil Stageing Pad	14d	30APR99	19MAY99
1033	Prepare & Sub Off-Site Borrow	14d	12APR99	29APR99
1034	App Off-Site Borrow	14d	30APR99	19MAY99
		31d	12APR99	24MAY99



Early bar	Progress point	Data date	05JAN99
Total float point	Critical point	Start date	05JAN99
Progress bar	Summary point	Finish date	05NOV99
Critical bar	Start milestone point	Must finish date	
Summary bar	Finish milestone point	Target finish date	

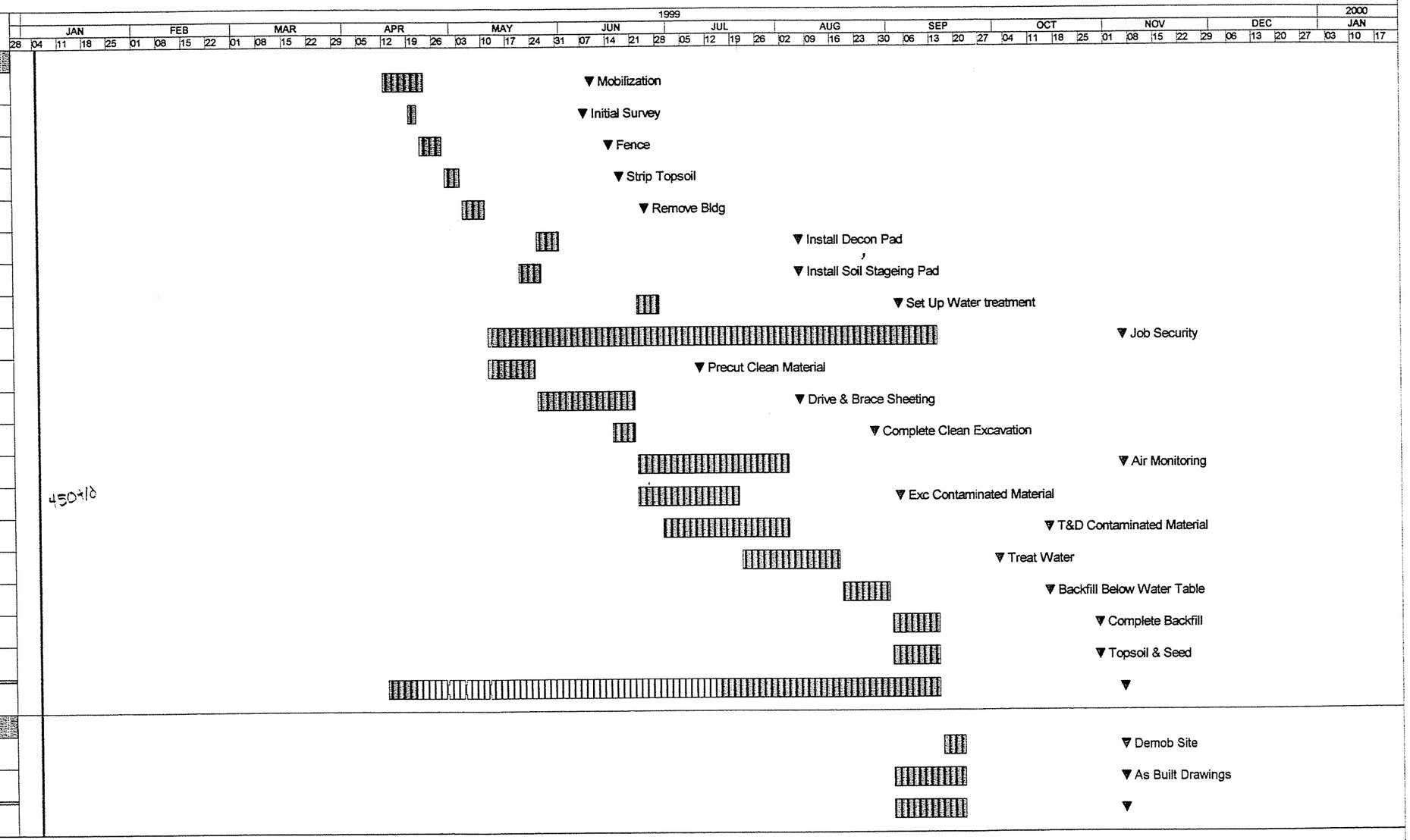
Date	Revision	Checked	Approved
30APR99	Revision # 1		

Report: Classic Gantt
Layout: Classic Gantt
Filter: All Activities

SureTrak Project Manager
Vanderhorst

Ciminelli Services Corp
Report Date: 30APR99

Act ID	Activity Description	Rem Dur	Early Start	Early Finish
Site Work				
1035	Mobilization	10d	12APR99	23APR99
1036	Initial Survey	3d	19APR99	21APR99
1037	Fence	5d	22APR99	28APR99
1038	Strip Topsoil	3d	29APR99	03MAY99
1040	Remove Bldg	5d	04MAY99	10MAY99
1041	Install Decon Pad	5d	25MAY99	31MAY99
1042	Install Soil Stageing Pad	5d	20MAY99	26MAY99
1050	Set Up Water treatment	5d	22JUN99	28JUN99
1055	Job Security	90d	11MAY99	14SEP99
1060	Precut Clean Material	10d	11MAY99	24MAY99
1070	Drive & Brace Sheeting	20d	25MAY99	21JUN99
1075	Complete Clean Excavation	5d	15JUN99	21JUN99
1077	Air Monitoring	30d	22JUN99	03AUG99
1080	Exc Contaminated Material	20d	22JUN99	20JUL99
1085	T&D Contaminated Material	25d	29JUN99	03AUG99
1095	Treat Water	20d	21JUL99	17AUG99
1100	Backfill Below Water Table	10d	18AUG99	31AUG99
1130	Complete Backfill	10d	01SEP99	14SEP99
1140	Topsoil & Seed	10d	01SEP99	14SEP99
		111d	12APR99	14SEP99
Close Out				
1150	Demob Site	5d	15SEP99	21SEP99
1160	As Built Drawings	15d	01SEP99	21SEP99
		15d	01SEP99	21SEP99



450×18

Early bar
Total float point
Progress bar
Critical bar
Summary bar

Progress point
Critical point
Summary point
Start milestone point
Finish milestone point

Data date	05JAN99
Start date	05JAN99
Finish date	05NOV99
Must finish date	
Target finish date	

Date	Revision	Checked	Approved
30APR99	Revision # 1		

Table 2 Project Quantity & Cost Summary
Van der Horst Plant #1
Monolith Excavation Project Project
No. D0003962 / Site No. 905008

Item No.	Item	Unit	Quantity	Unit Price	Bid Breakdow	Bid Total	Actual Quantity	Actual Cost	CO#1 Quanity	CO#1 Cost	Total Item Cost	
1	Mob/Demob	Lump Sum				$179,000.00						$185,850.00
a	Performance & Payment Bond	Lump Sum	1	$21,000.00	$21,000.00		1	$21,000.00			$21,000.00	
b	GL & owners insurance	Lump Sum	1	$35,500.00	$35,500.00		1	$35,500.00			$35,500.00	
c	Mob/Demob Labor & Equip.	Lump Sum	1	$22,000.00	$22,000.00		1	$22,000.00			$22,000.00	
d	Decommission Well	Each	2	$2,000.00	$4,000.00		2	$4,000.00			$4,000.00	
e	Install Well	Each	3	$2,500.00	$7,500.00		3	$7,500.00			$7,500.00	
f	Fencing	Lump Sum	1	$4,000.00	$4,000.00		1	$4,000.00			$4,000.00	
g	Temporary Site Control	Lump Sum	1	$30,000.00	$30,000.00		1	$30,000.00			$30,000.00	
h	Temp. Utiltiies	Lump Sum	1	$2,000.00	$2,000.00		1	$2,000.00			$2,000.00	
i	Decon Pad	Lump Sum	1	$8,500.00	$8,500.00		1	$8,500.00			$8,500.00	
j	Decon Facility	Lump Sum	1	$5,000.00	$5,000.00		1	$5,000.00			$5,000.00	
k	Safety Equipment	Lump Sum	1	$3,000.00	$3,000.00		1	$3,000.00			$3,000.00	
l	Field Offices	Lump Sum	1	$1,000.00	$1,000.00		1	$1,000.00			$1,000.00	
m	Surveying	Lump Sum	1	$15,000.00	$15,000.00		1	$15,000.00			$15,000.00	
n	Project Signs	Lump Sum	1	$1,000.00	$1,000.00		1	$1,000.00			$1,000.00	
o	Erosion Control	Lump Sum	1	$12,500.00	$12,500.00		1	$12,500.00			$12,500.00	
p	Meteorological Station	Lump Sum	1	$1,000.00	$1,000.00		1	$1,000.00			$1,000.00	
q	Remove Building	Lump Sum	1	$6,000.00	$6,000.00		1	$6,000.00			$6,000.00	
1A	Pollution Liability Insurance	Lump Sum	1	$6,850.00		$6,850.00	1	$6,850.00			$6,850.00	
2	Site Services	day	124	$1,600.00		$198,400.00						$188,313.00
a	Site Security	day	124	$325.00	$40,300.00		101	$32,825.00	17	$5,525.00	$38,350.00	
b	Access Roads	day	124	$345.00	$42,780.00		102	$35,190.00	17	$5,865.00	$41,055.00	
c	Surface Water Controls	day	124	$50.00	$6,200.00		106	$5,300.00	17	$850.00	$6,150.00	
d	Erosion & Sediment Controls	day	124	$50.00	$6,200.00		106	$5,300.00	17	$850.00	$6,150.00	
e	Temp. Utilities & Sanitary Facilities	day	124	$200.00	$24,800.00		103	$20,600.00	17	$3,400.00	$24,000.00	
f	Field Offices	day	124	$120.00	$14,880.00		114	$13,680.00	17	$2,040.00	$15,720.00	
g	Staging & Stockpile Areas	day	124	$345.00	$42,780.00		89	$30,705.00	17	$5,865.00	$36,570.00	
h	Disposal of Contractor Wastes	day	124	$40.00	$4,960.00		114	$4,560.00	17	$680.00	$5,240.00	
i	Maint. of Survey Controls	day	124	$8.00	$992.00		123	$984.00	17	$136.00	$1,120.00	
j	Asbuilt Survey	day	124	$8.00	$992.00		109	$872.00	17	$136.00	$1,008.00	
k	Maint. & Repair of Equipment	day	124	$25.00	$3,100.00		109	$2,725.00	17	$425.00	$3,150.00	
l	Traffic Control	day	124	$40.00	$4,960.00		95	$3,800.00	17	$680.00	$4,480.00	
m	Placement of Temp. Site Contorls	day	124	$30.00	$3,720.00		109	$3,270.00	17	$510.00	$3,780.00	
n	Meteorological Station	day	124	$14.00	$1,736.00		93	$1,302.00	17	$238.00	$1,540.00	
3	Health & Safety	day	90	$300.00		$27,000.00						$26,870.00
a	Health & Safety Officer	day	90	$225.00	$20,250.00		77	$17,325.00	17	$3,825.00	$21,150.00	
b	O&M of H&S Equipment	day	90	$5.00	$450.00		64	$320.00	17	$85.00	$405.00	
c	Air Monitoring	day	90	$20.00	$1,800.00		44	$880.00	17	$340.00	$1,220.00	
d	Dust Control	day	90	$20.00	$1,800.00		72	$1,440.00	17	$340.00	$1,780.00	
e	Decon Pad/Temp. Stations	day	90	$15.00	$1,350.00		53	$795.00	17	$255.00	$1,050.00	
f	Training	day	90	$5.00	$450.00		74	$370.00	17	$85.00	$455.00	
g	Disposal of PPE & Waste	day	90	$10.00	$900.00		64	$640.00	17	$170.00	$810.00	
4	Sheet Piling					$353,000.00						$353,000.00
	Design	Lump Sum	1	$20,000.00	$20,000.00		1	$20,000.00			$20,000.00	
	Mobilization	Lump Sum	1	$50,000.00	$50,000.00		1	$50,000.00			$50,000.00	
	Installation	Lump Sum	1	$280,000.00	$280,000.00		1	$280,000.00			$280,000.00	
	Demobilization	Lump Sum	1	$3,000.00	$3,000.00		1	$3,000.00			$3,000.00	
5	Excavation (0-18 ft) Backfill below water	Cubic Yard	3500	$12.39		$43,365.00	3,103	$38,451.25	Credit	$0.00	$38,451.25	
6	Excavation Hazardous Soil (18-42 ft)	Cubic Yard	4700	$24.00		$112,800.00	4,700	$112,800.00	273.36	$6,560.64	$119,360.64	
7	Off-site Trans & Disposal of Haz. Soil	Ton	8900	$85.25		$758,725.00	8,900	$758,725.00	832.11	$70,937.38	$829,662.38	
8	Design & Installation of Groundwater Treatment	Lump Sum	1	$40,000.00		$40,000.00						$40,000.00
	System Design	Lump Sum	1	$5,000.00	$5,000.00		1	$5,000.00			$5,000.00	
	Mobilization	Lump Sum	1	$8,000.00	$8,000.00		1	$8,000.00			$8,000.00	
	Recovery System Installation	Lump Sum	1	$25,000.00	$25,000.00		1	$25,000.00			$25,000.00	
	System Testing	Lump Sum	1	$2,000.00	$2,000.00		1	$2,000.00			$2,000.00	
9	Groundwater Recovery & Treatment	Gallon	3,000,000	$0.075		$225,000.00	3,000,000	$225,000.00			$225,000.00	
10	Backfill below Water Table	Cubic Yard	1400	$11.90		$16,660.00	1,400	$16,660.00	1759.69	$20,940.31	$37,600.31	
11	Backfill above Water Table	Cubic Yard	3300	$14.83		$48,939.00	1,814	$26,895.24	Credit	$0.00	$26,895.24	
12	Final Grading, Top Soil & Site	Acre	1	$8,000.00		$8,000.00	1	$8,000.00	0.46	$3,680.00	$11,680.00	
	Contractor Credit for DEC Over Time								1	($3,529.32)	($3,529.32)	
	Contractor Credit for 37 day time extension									($19,917.76)	($19,917.76)	
	PCO#1								1	$4,961.44	$4,961.44	
	PCO#2								1	$1,571.31	$1,571.31	
	PCO#3								1	$14,045.44	$14,045.44	
	PCO#4								1	$21,451.29	$21,451.29	
	PCO#5								1	$800.00	$800.00	
	PCO#6								1	$3,225.45	$3,225.45	
	PCO#7								1	$272.98	$272.98	
	PCO#8								1	$1,561.37	$1,561.37	
	Project Total					$2,017,739.00	1	$1,948,264.49		$134,418.33	$2,107,125.02	

Table 3
List of Subcontractors and Suppliers
Van der Horst Plant #1
Project No.0003962
Olean(C), Cattaraugus County, Site No.905008

NAME	SERVICE/MATERIAL
SUBCONTRACTORS	
Niagara Boundary	Land Surveying
Maxim, Technologies Inc.	Mon.Well Abandonment/Install.
Philip Analytical Services	Sample Analysis
Freind Laboratory Inc.	Sample Analysis
Max Environmental Technologies, Inc.	Hazardous Waste Disposal
CWM Services, LLC.	Hazardous Waste Disposal
Armor Fence	Fencing Installation
The Righter Co. Inc.	Sheet Piling
Mobil Process Technology	Groundwater Treatment
Advanced Security	Security Services
LCJ Contracting	Landscaping Services
SUPPLIERS/SERVICES	
LCA Development	Waste Transportation
G.G. Gregory Company	Waste Transportation
Specialty Transportation Services, Inc.	Waste Transportation
Jack Gray Transportation	Waste Transportation
Buffalo Fuel Corp.	Waste Transportation
Price Trucking Corp.	Waste Transportation
Dart Trucking	Waste Transportation
Frank's Vacuum Services	Waste Transportation
Work & Silvis Co., Inc.	Fill Material Supplier
Genesis Rental	Office and Security Trailers
Rupp Rental & Sales	Equipment Rental and Repairs
Kelkur Electric	Electric Service
Griffith Oil Co.	Fuels
Olean General Hospital	Medical Services
Rupp Rental	Decon Trailer

Table 4
Overall Evaluation of Ciminelli Services Corporation
Van der Horst Plant #1
Soil Excavation Project
Project No. D0003962
Site No. 905008
Olean(C), Cattaraugus County,

Work Item	Rating (1-5)	Comments
Project Management	3	Coordination and cooperation with engineer was adequate.
Project Submittals	3	Used good system for tracking submittals but even so, several submittals (ie: biweekly schedule update) were consistently late. Most other submittals complete and adequate.
Site Preparation/mobilization	4	Satisfactory - Slow to mobilize but aggressive once on site
Health & Safety	4	Real-time & documentation monitoring was performed as required. Cooperative with engineer on suggested changes and responses to concerns regarding dust generation.
Access Road Construction	4	Constructed all routes necessary in order to complete job in efficient manner.
Clean Soil Excavation	4	Aggressive and efficient work performed.
Hazardous Soil Excavation	4	Innovative approach, aggressive and efficient work performed.
Misc. Site Excavations	5	Completed in a timely manner
Disposal of Decon. Liquids	3	Adequate
Backfill	3	Adequate and close sources located, good quality
Topsoil/seed/mulch	3	Adequate oversight of Subcontractor and attention to detail.
Proposed Change Order #1	4	Additional work performed in timely manner
Total	3.67	Above Average

Table 5

Proposed Change Order (PCO) Cost Summary

December 8, 1999

PCO#	Item:	Description:	Cost
1.	A.	Abandonment of two former pumping wells and the abandonment of one former monitoring well	$2,730.00
	B.	Installation of 7 additional Norway spruce trees along the southwest property boundary.	$1,470.00
	C.	Purchase of a Sony Mavica MVC-FD71 digital Camera.	$761.44
Total PCO#1			**$4,961.44**
2.	A.	VOC air monitoring	**$1,571.31**
3.	A.	Residential Relocation	**$14,045.44**
4.	A.	Immediate cleanup and containment of the oil slick in the excavation.	$20,006.11
	B.	Sampling and analysis of the oil slick	$485.11
	C.	Conduct short term real time and documentation monitoring in Veno backyard.	$960.07
Total PCO#4			**$21,451.29**
5.	A.	Change of particulate air monitoring equipment.(datalogger)	**$800.00**
6.	A.	Analysis of Documentation Air Monitoring Samples	**$3,225.45**
7.	A.	Repair of Department owned Kodak Digital Camera.	**$272.98**
8.	A.	Application of grass seed during site restoration by hydroseeding method and credit for seed application as per specification.	$0.00
	B.	Payment of Department telephone bill exceeding the $150.00 maximum amount in Section 01590, Item. 3.2. of the Contract	$46.13
	C.	Sample and dispose of three (3) unknown drums.	$394.41
	D.	Positioning of influent pump during groundwater treatment phase of work.	$439.32
	E.	Repair of residential fence.	$223.71
	F.	Replace fence section in area of former Building 24.	$457.80
	G.	Grub and Regrade site along Vine Street.	$0.00
Total PCO#8			**$1,561.37**
Total PCOs			**$67,882.21**

Table 6a.
VAN DER HORST PLANT #1
TREATED GROUNDWATER INFLUENT SAMPLING
September 1999
ANALYSIS FOR Cr(T)

Sample I.D. No.	Date	Time	Daily Flow (gallons)	Total Flow (million gallons)	Chromium Conc. (mg/l)	Lbs. Cr Removed
SH999-0910-188901	9/1/99	830	68,000	0.068	115	65.92
SH999-0910-188902	9/2/99	910	221,000	0.289	124	231.02
SH999-0910-188903	9/3/99	850	146,000	0.435	112	137.85
SH999-0910-188904	9/7/99	1530	83,000	0.518	99.5	69.62
SH999-0910-188905	9/8/99	1310	181,000	0.669	90.4	137.94
SH999-0910-188906	9/9/99	1300	101,000	0.800	73	62.15
SH999-0910-188907	9/10/99	1100	175,000	0.975	63.5	93.68
SH999-0914-188908	9/13/99	1335	194,000	1.169	52.7	86.19
SH999-0914-188909	9/14/99	1300	126,000	1.295	46.6	49.50
SH999-0921-188910	9/20/99	0830	248,000	1.543	42.1	88.02
SH999-0921-188911	9/21/99	0830	83,000	1.626	38.7	27.08
SH999-0922-188912	9/22/99	0700	169,000	1.795	40.0	56.99
SH999-0922-188913	9/23/99	0830	189,000	1.984	29.2	46.52
SH999-0927-188914	9/24/99	0820	189,000	2.173	24.8	39.51
SH999-0927-188915	9/25/99	0845	178,000	2.351	22.3	33.46
SH999-0927-188916	9/26/99	0905	182,000	2.533	19.6	30.07
SH999-0927-188917	9/26/99	2000	150,000	2.683	16.6	20.99
SH999-0929-188918	9/27/99	0815	293,000	2.826	15.9	39.27
SH999-0929-188919	9/27/99	0930	NA	Corner #7	13.8	NA
SH999-0929-188920	9/27/99	0930	NA	Corner #2	15.1	NA
SH999-0929-188921	9/27/99	0930	NA	Corner #4	12.1	NA
SH999-0929-188922	9/28/99	1400	234,000	3.050	14.3	28.21
Total pounds of chromium removed from the groundwater:						**1,343.98**

Van der Horst Plant #1

Chromium Removal Summary

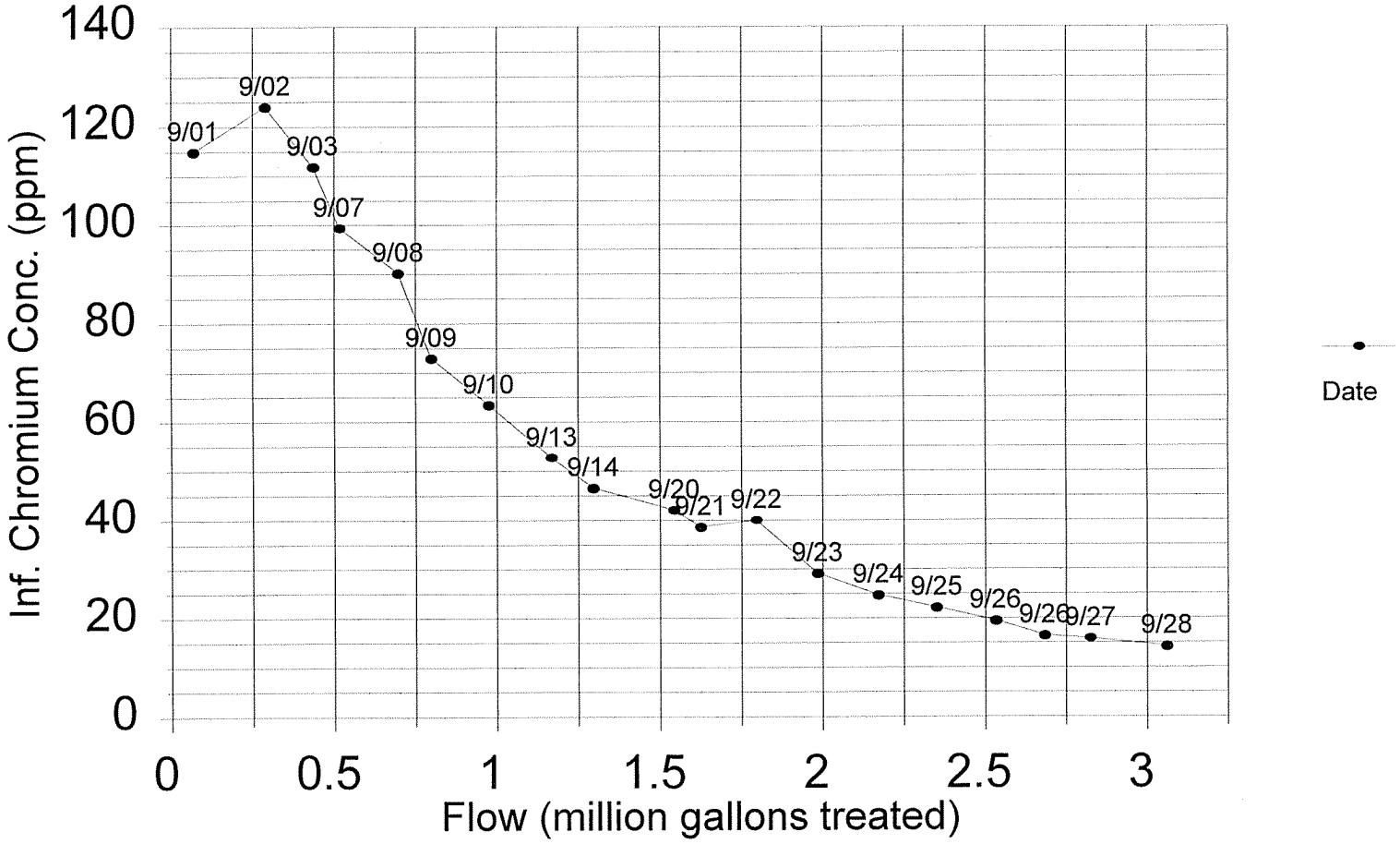


Table 7
Summary of Total Project Disposal Quantities
Van der Horst Plant #1
1993 - 1999
Olean(C), Cattaraugus County

Plant Demolition Project:

Contaminated Residential Soil (non-haz.) -	1,655.29 tons
Demolition Debris	
Non-hazardous -	1,145.13 tons
Hazardous -	527.04 tons

Soil Excavation Project:

Non-Hazardous Soil -	11,890.00 tons
Non-Hazardous Sediment -	820 tons
Hazardous -	5,663 tons

Monolith Removal Project:

Hazardous Soil -	9,732.11 tons
Water - 3,058,000 gallons or 1,344 lbs.(Cr)	0.672 tons

Total Materials Excavated and disposed of Off-Site:

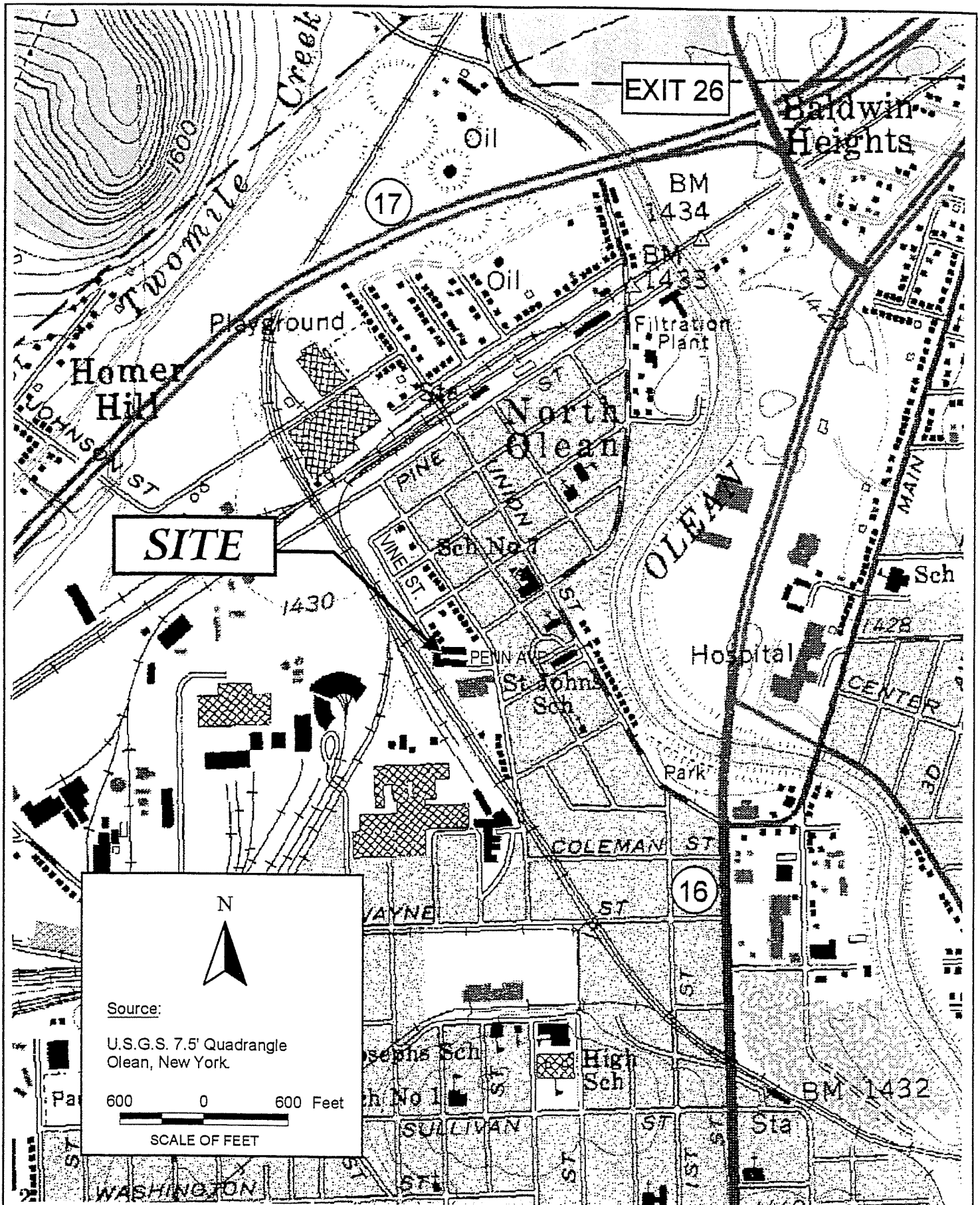
Non-Hazardous Soil/Sediment/Asbestos -	**15,616.69 tons**
Hazardous Soil/Concrete -	**15,922.82 tons**
Total waste removed from the site:	**31,539.51 tons**

(Note this figure does not include recyclable or recoverable material, such as scrap steel or copper, that was removed from the site and sent to a recycling facility.)

Table 8
Summary of Total Project Costs
Van der Horst Plant #1 & Plant #2
1984 - 1999
Olean(C), Cattaraugus County

VdH Plant #1 Site No. 905008		**VdH Plant #2 Site No. 905022**	
USEPA Removal Action -	$1,349,000	USEPA Removal Action -	$1,335,000
RI/FS - ERM :	$1,128,000	RI/FS - ERM :	$1,111,000
Demolition & Residential Soil Removal (Both Facilities) Remedial Design - ERM: Construction Oversight - ERM: Construction - IDM: Total:	 $152,000 $214,000 $1,830,008 $2,196,008		
		Excavation/Consolidation Project Remedial Design - ERM : Construction - Kimmins : Total:	 $155,000 $1,078,450 $1,233,450
Soil Excavation/Disposal Project Remedial Design - ERM : Construction - AllState PowerVac. : Total:	 $304,000 $1,916,655 $2,220,655		
Soil Excavation/Disposal Project Remedial Design - IT Corp. : Construction - Ciminelli Services Corp. : Total:	 $180,000 $2,017,125 $2,197,125		
NYSDEC Expenditures - Personnel Services Engineering/Construction Oversight (4/84 - 9/99)	$856,869	**NYSDEC/DOH Expenditures - Personnel Services Engineering/Construction Oversight** (4/84 - 9/99)	$405,811
Total Cost:	**$ 9,767,837.00**	**Total Cost:**	**$ 4,085,261.00**

FIGURES



INTERNATIONAL TECHNOLOGY CORPORATION

REV.	DESCRIPTION OF REVISION	DATE	REV. BY

FIGURE 1
SITE LOCATION MAP
VANDERHORST PLANT NO.1

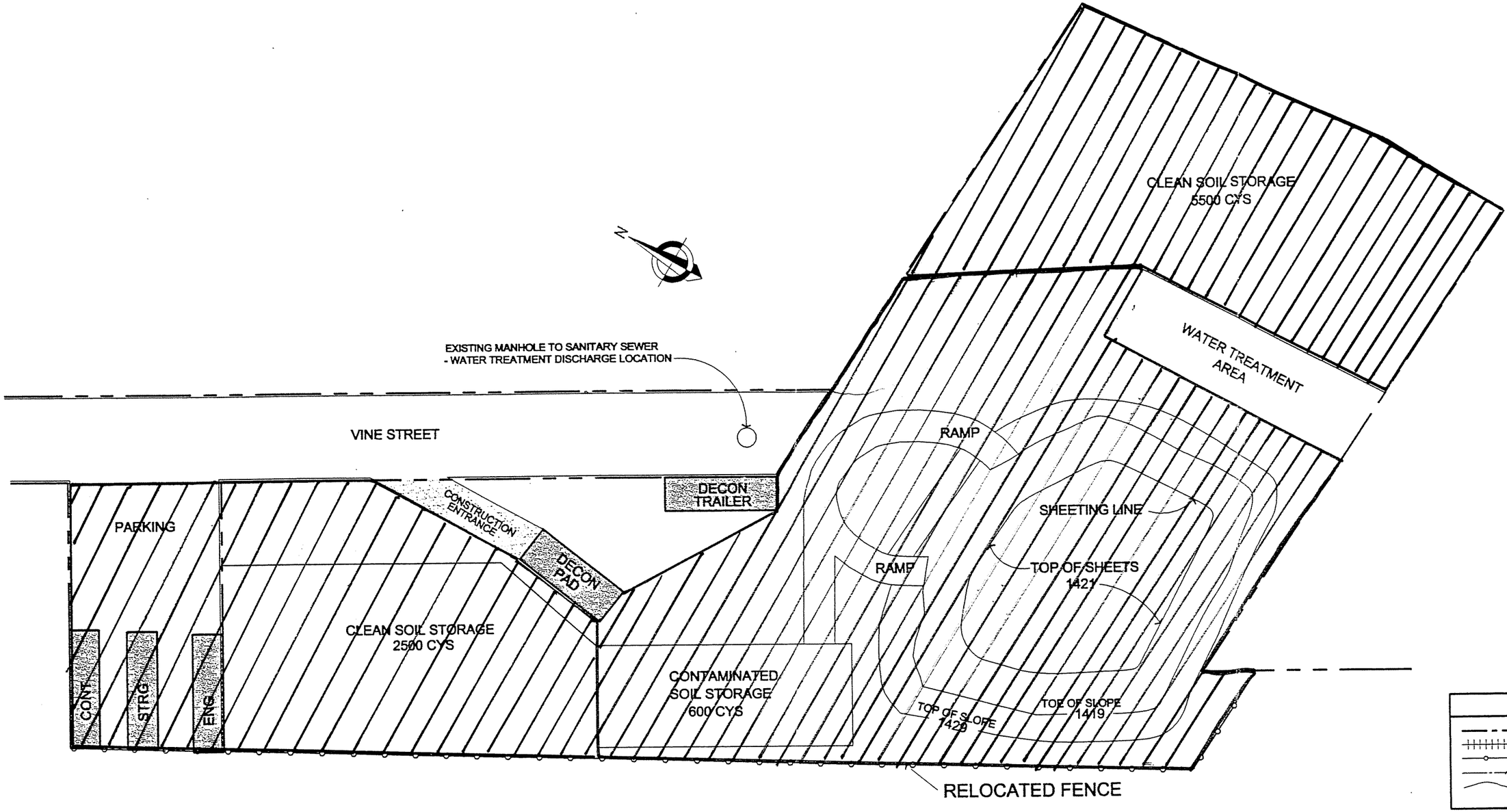
Prepared for:

NYSDEC

DRAWN BY:	M. VAYNER	DATE	11/19/98
CHKD:	D. HSU	DATE	11/19/98
ENG:	J. WAGNER	DATE	11/19/98
APPVD:	D. BOYADJIAN	DATE	11/19/98
SCALE:	AS NOTED	PROJECT NO	774103
DRAWING NO	774103 -A1		REV

11x17=9

=



LEGEND

- PROPERTY LINE
- RAILROAD TRACKS
- FENCE LINE
- SILT FENCE LINE
- CONTOUR LINE

SUPPORT ZONE

CONTAMINANT REDUCTION ZONE

EXCLUSION ZONE

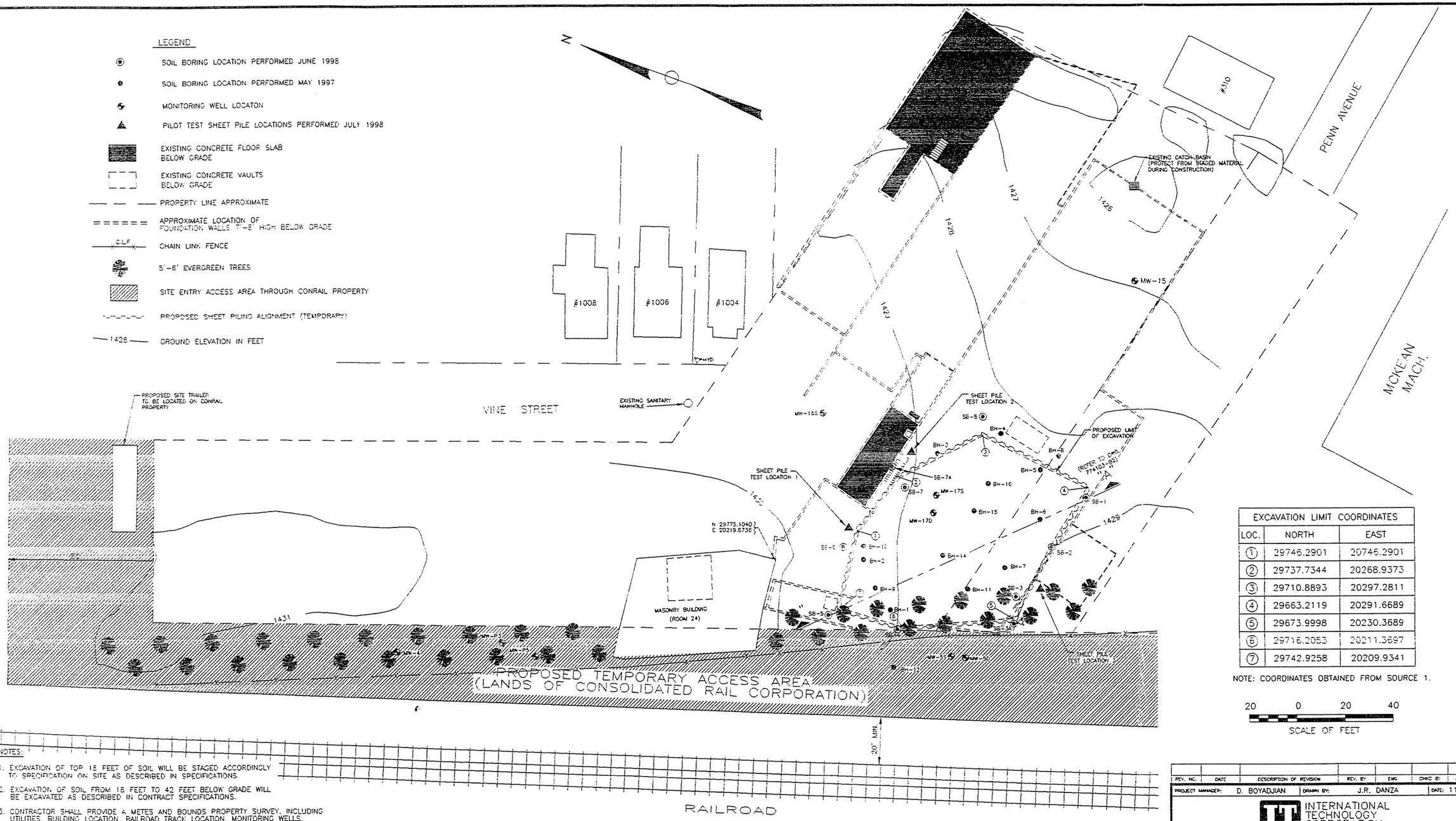
CIMMINELLI SERVICES COF
170 COOPER AVENUE, SUITE 112
TONAWANDA, NEW YORK
PHONE: (716) 447-5684 FAX (716) 447-7C

DRAWING TILE: SITE CONTROL PLAN			REVISIONS
PROJECT: Van Derhorst			
LOCATION: OLEAN, NEW YORK			
CHECKED BY: M.W.B.			
DATE: 1-19-99	SCALE	99005	SP-2
DRAWN BY: pds	ELEV.	JOB NUMBER	DRAWING NUM
	DETAILS		

FIG 8.1

LEGEND

- SOIL BORING LOCATION PERFORMED JUNE 1998
- SOIL BORING LOCATION PERFORMED MAY 1997
- MONITORING WELL LOCATON
- PILOT TEST SHEET PILE LOCATIONS PERFORMED JULY 1998
- EXISTING CONCRETE FLOOR SLAB BELOW GRADE
- EXISTING CONCRETE VAULTS BELOW GRADE
- PROPERTY LINE APPROXIMATE
- APPROXIMATE LOCATION OF FOUNDATION WALLS 7'-8' HIGH BELOW GRADE
- C.L.F. CHAIN LINK FENCE
- 5'-6' EVERGREEN TREES
- SITE ENTRY ACCESS AREA THROUGH CONRAIL PROPERTY
- PROPOSED SHEET PILING ALIGNMENT (TEMPORARY)
- 1426 GROUND ELEVATION IN FEET



EXCAVATION LIMIT COORDINATES		
LOC.	NORTH	EAST
①	29746.2901	20746.2901
②	29737.7344	20268.9373
③	29710.8893	20297.2811
④	29663.2119	20291.6689
⑤	29673.9998	20230.3689
⑥	29716.2053	20211.3697
⑦	29742.9258	20209.9341

NOTE: COORDINATES OBTAINED FROM SOURCE 1.

20 0 20 40

SCALE OF FEET

NOTES:

1. EXCAVATION OF TOP 18 FEET OF SOIL WILL BE STAGED ACCORDINGLY TO SPECIFICATION ON SITE AS DESCRIBED IN SPECIFICATIONS.
2. EXCAVATION OF SOIL FROM 18 FEET TO 42 FEET BELOW GRADE WILL BE EXCAVATED AS DESCRIBED IN CONTRACT SPECIFICATIONS.
3. CONTRACTOR SHALL PROVIDE A METES AND BOUNDS PROPERTY SURVEY, INCLUDING UTILITIES, BUILDING LOCATION, RAILROAD TRACK LOCATION, MONITORING WELLS, EXISTING TOPOGRAPHY AND SHEET PILING PRIOR TO EXCAVATION AS DESCRIBED IN THE CONTRACT SPECIFICATIONS.
4. MONITORING WELLS MW-16S, MW-17S & MW-17D TO BE REMOVED OR DECOMMISSIONED AND REPLACED PER SPECIFICATION SECTION 02670.
5. MONITORING WELLS MW-5S & MW-5 TO BE PROTECTED DURING CONSTRUCTION. IF DISTURBED THEY ARE TO BE REPLACED BY THE CONTRACTOR.
6. GRADE CONTROL SURROUNDING EXCAVATION AREA IS CRITICAL. WATER ENCOUNTED DURING LOADING SHALL FLOW BACK INTO THE EXCAVATION IN ALL CASES.
7. VINE STREET SHALL BE USED FOR SITE ACCESS. PENN AVENUE SHALL BE USED ONLY WITH PRIOR APPROVAL OF DEPARTMENT.
8. BH-13 IS NOT SHOWN ON THIS DRAWING SINCE IT WAS COMPLETED OUTSIDE THE PROJECT AREA.
9. UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209. PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

SOURCES :

1. MODI ENGINEERING & LAND SURVEYING, p.c. DRAWING #V-4A, DATED NOV. 1997.
2. EXISTING FOUNDATION AND PROPERTY LINE INFORMATION WAS DERIVED IN PART FROM DRAWINGS NAMED 'VDH2SITE' & 'FLRPLT1'. PREPARED BY ERM-NORTHWEST, DATED 3/7/96 & 2/11/94 RESPECTIVELY.
3. SOIL BORING LOCATION DATA (BH DESIGINATED) DERIVED FROM NYSDEC DRAWING 'FIGURE 2'
4. SOIL BORING SURVEY DATA (SB DESIGINATED) DERIVED FROM YEC, INC. 7/8/98 AND PREPARED FOR IT CORPORATION.

REV. NO.	DATE	DESCRIPTION OF REVISION	REV. BY	ENG.	CHKD. BY:	APPVD. BY:

PROJECT MANAGER: D. BOYADJIAN | DRAWN BY: J.R. DANZA | DATE: 11/4/98

INTERNATIONAL TECHNOLOGY CORPORATION

EXCAVATION PLAN
VANDERHORST
OLEAN, NEW YORK

Prepared For:

NYSDEC

PROJECT NO.	FILE NO.	CHK'D: D. HSU	DRAWING NUMBER	REV. NO.
774103	B1	ENG. J. WAGNER	774103-B1	
		APPVD. D. BOYADJIAN		

BASEXREF 774103B1.dwg 11/20/98 1:13:pm J.R.D.

LEGEND

- SOIL BORING LOCATION
- MONITORING WELL LOCATON
- PROPERTY LINE APPROXIMATE
- C.L.F. CHAIN LINK FENCE
- 5'-6' EVERGREEN TREES
- 1428 GROUND ELEVATION IN FEET

N

#1008
#1006
#1004
HYD
VINE STREET
EXISTING SANITARY MANHOLE
MW-16S
#310
PENN AVENUE
EXISTING CATCH BASIN (PROTECT FROM STAGED MATERIAL DURING CONSTRUCTION)
1427
1428
1429
1430
1431
MW-15
MCKEAN MACH.
BH-4
BH-3
BH-8
BH-5
BH-16
MW-17S
MW-17D
BH-15
BH-6
LIMIT OF BACKFILL AREA
"B"
(REFER TO DWG. 774103-B4)
BH-10
BH-2
BH-14
BH-7
BH-9
BH-11
BH-1
MASONRY BUILDING (ROOM 24)
"A"
MW-3
MW-4
MW-5
MW-55
MW-50
BH-12
RAILROAD

20 0 20 40
SCALE OF FEET

SOURCES:

1. MODI ENGINEERING & LAND SURVEYING, p.c. DRAWING #V-4A, DATED NOV. 1997.

2. EXISTING FOUNDATION AND PROPERTY LINE INFORMATION WAS DERIVED IN PART FROM DRAWINGS NAMED 'VDH2SITE' & 'FLRPLT1'. PREPARED BY ERM-NORTHWEST, DATED 3/7/96 & 2/11/94 RESPECTIVELY.

3. SOIL BORING LOCATION DATA (BH DESIGINATED) DERIVED FROM NYSDEC DRAWING 'FIGURE 2'

4. SOIL BORING SURVEY DATA (SB DESIGINATED) DERIVED FROM YEC. INC. 7/8/98 AND PREPARED FOR IT CORPORATION.

5. UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209. PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

REV. NO.	DATE	DESCRIPTION OF REVISION	REV. BY	ENG.	CHKD. BY	APPVD. BY

PROJECT MANAGER: D. BOYADJIAN | DRAWN BY: J.R. DANZA | DATE: 11/4/98

INTERNATIONAL TECHNOLOGY CORPORATION

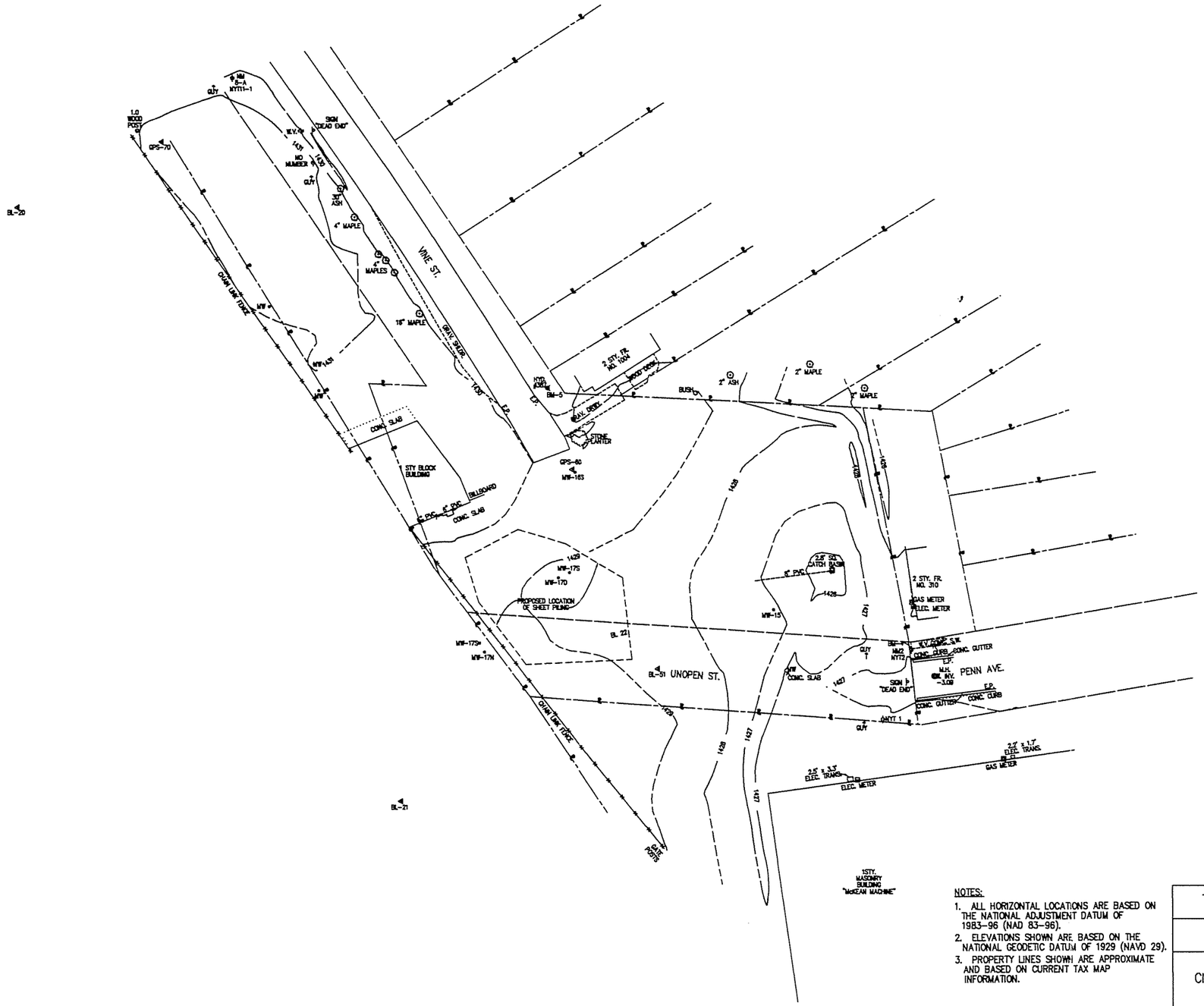
FINAL GRADING PLAN
VANDERHORST
OLEAN, NEW YORK

Prepared For:

NYSDEC

PROJECT NO.	FILE NO.	CHK'D: D. HSU	DRAWING NUMBER	REV. NO.
774103	B3	ENG. J. WAGNER	774103-B3	
		APPV'D. D. BOYADJIAN		

XREF: 774103D4
774103B3.dwg 11/19/98 8:22pm A.D.R.



NOTES:

1. ALL HORIZONTAL LOCATIONS ARE BASED ON THE NATIONAL ADJUSTMENT DATUM OF 1983–96 (NAD 83–96).
2. ELEVATIONS SHOWN ARE BASED ON THE NATIONAL GEODETIC DATUM OF 1929 (NAVD 29).
3. PROPERTY LINES SHOWN ARE APPROXIMATE AND BASED ON CURRENT TAX MAP INFORMATION.

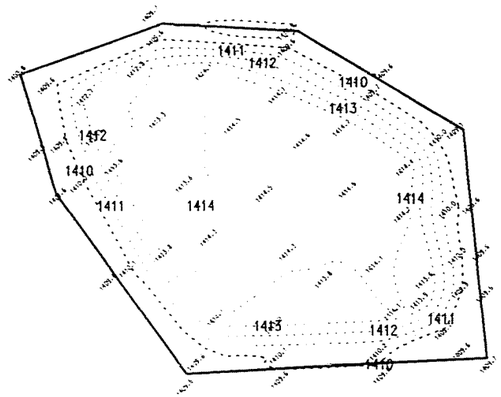
TOPOGRAPHIC SURVEY

VANDERHORST SITE
OLEAN, NEW YORK

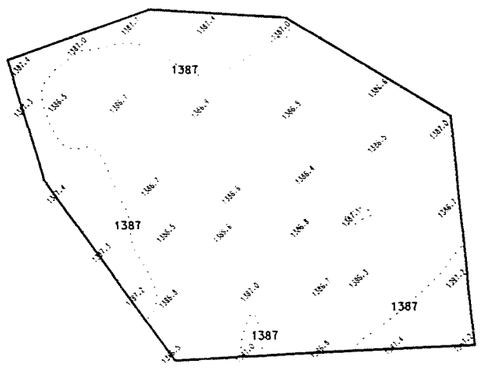
OM P. POPLI, P.E., L.S., P.C.
CIVIL ENGINEERS – LAND SURVEYORS
555 Penbrooke Drive
Penfield, New York 14526
716–388–2060
Fax 716–388–2070

SCALE:	DATE:	DRAWING NO.:
1" = 30'	APRIL 30, 1999	

TOP OF WASTE
7-8-99



BOTTOM OF WASTE
8-26-99



Contaminated Waste
Triangle Volume Report

Original Surface: b535001
Design Surface: b535003

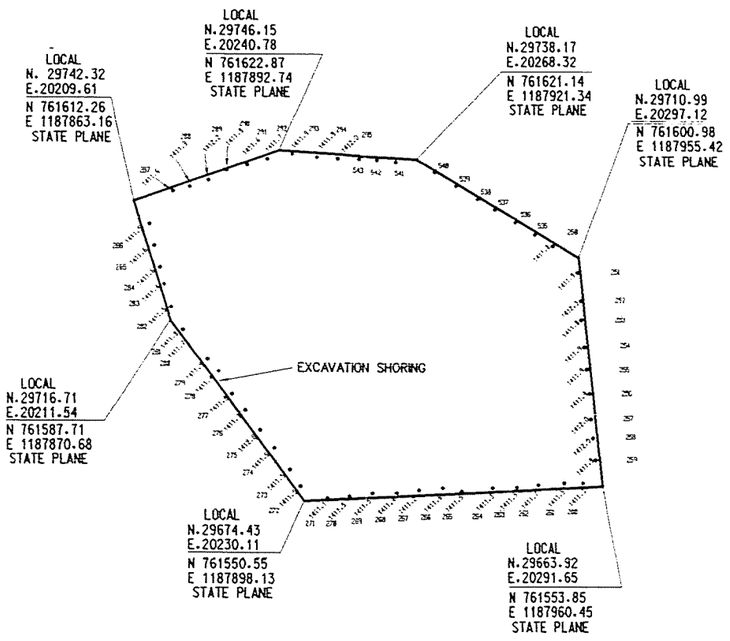
Mode: Selected Shapes
Cut Factor: 1.00
Fill Factor: 1.00

Cut: 134281 cu ft
Fill: 0 cu ft
Net: 134281 cu ft

Cut: 4973 cu yd
Fill: 0.00 cu yd
Net: 4973 cu yd

SKETCH
SHOWING LOCATIONS OF EXCAVATION SHORING
AS MEASURED IN THE FIELD ON 7-8-99

SHOTS TAKEN ON THE PROJECTION OF THE INSIDE OF SHORING WALL, PER NYS DEC.



TIE BOLTS LOCATION
STATE PLANE COORDINATES

POINT #	NORTH	EAST	ELEVATION
250	761604.03	1187949.48	BOLT
251	761597.83	1187955.12	BOLT
252	761592.03	1187955.84	BOLT
253	761588.06	1187955.94	BOLT
254	761582.53	1187956.58	BOLT
255	761577.93	1187957.07	BOLT
256	761572.91	1187957.65	BOLT
257	761567.65	1187958.04	BOLT
258	761563.78	1187958.45	BOLT
259	761559.20	1187958.98	BOLT
260	761554.48	1187956.31	BOLT
261	761554.49	1187952.38	BOLT
262	761554.07	1187946.89	BOLT
263	761553.60	1187942.35	BOLT
264	761553.45	1187937.29	BOLT
265	761552.76	1187930.83	BOLT
266	761553.40	1187926.97	BOLT
267	761552.93	1187922.00	BOLT
268	761552.34	1187917.38	BOLT
269	761552.27	1187912.35	BOLT
270	761551.54	1187907.41	BOLT
271	761551.21	1187902.85	BOLT
272	761553.65	1187897.30	BOLT
273	761557.02	1187895.09	BOLT
274	761561.51	1187891.92	BOLT
275	761565.17	1187889.00	BOLT
276	761569.21	1187885.98	BOLT
277	761572.58	1187883.22	BOLT
278	761577.26	1187880.49	BOLT
279	761579.67	1187878.23	BOLT
280	761583.89	1187875.11	BOLT
281	761585.76	1187873.37	BOLT
282	761590.43	1187870.88	BOLT
283	761595.13	1187869.40	BOLT
284	761598.55	1187868.55	BOLT
285	761603.07	1187867.40	BOLT
286	761607.54	1187866.46	BOLT
287	761614.30	1187871.17	BOLT
288	761615.22	1187874.57	BOLT
289	761615.60	1187878.33	BOLT
290	761618.74	1187882.04	BOLT
291	761619.79	1187886.19	BOLT
292	761621.05	1187890.41	BOLT
293	761622.11	1187895.48	BOLT
294	761621.45	1187900.60	BOLT
295	761621.21	1187904.87	BOLT
535	761605.69	1187946.12	BOLT
536	761608.18	1187942.00	BOLT
537	761610.83	1187937.64	BOLT
538	761613.00	1187934.05	BOLT
539	761615.70	1187929.60	BOLT
540	761618.41	1187925.13	BOLT
541	761620.55	1187917.05	BOLT
542	761621.03	1187913.19	BOLT
543	761621.16	1187909.34	BOLT

MAP
SHOWING TOPOGRAPHIC SURVEY
OF
AREA INSIDE METAL ~~SHORING~~
AT THE
VANDERHORST SITE

NOTES:

1. COORDINATES AND ELEVATIONS SHOWN HEREON ARE BASED ON INFORMATION PROVIDED BY CIMINELLI SERVICES AS ESTABLISHED BY OTHERS

(Not to Scale)

20' 0 20' 40'

SCALE BAR
IN FEET

Niagara Boundary
And Mapping Services

4769 LOWER RIVER ROAD
LEWISTON, N.Y. 14092
(716) 754-2462

85 CENTRAL AVENUE
LANCASTER, NY 14086
(716) 685-6097

1185 EAST MAIN STREET
BRADFORD, PA. 16701
(814) 368-9526

THIS SURVEY IS CERTIFIED TO THE FOLLOWING PARTIES:

BY _____ LIC. NO. _____ DATE _____

"CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE CODE OF PRACTICE FOR LAND SURVEYORS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS, AS AMENDED BY NIAGARA FRONTIER LAND SURVEYORS ASSOCIATION EFFECTIVE JANUARY 1, 1991. SAID CERTIFICATIONS SHALL RUN ONLY TO THE PARTY FOR WHOM THE SURVEY IS PERFORMED, AND IF REQUESTED ON THEIR BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE SUCCESSORS AND/OR ASSIGNEES OF THE LENDING INSTITUTION. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS."

ABBREVIATIONS

EX. - EXISTING
MEAS. - MEASURED
REC. - RECORD
F.P. - FENCE POST
CONC. - CONCRETE
REP. - REPUTED
E. - EAST
N. - NORTH
W. - WEST
S. - SOUTH
L. - LIBER
P. - PAGE
R.O.W. - RIGHT OF WAY
A.K.A. - ALSO KNOWN AS

LOT	SECTION	TOWNSHIP	RANGE
CITY	OLEAN		
COUNTY	CATTARAGUS		
STATE	NEW YORK		
DATE	8-26-99		
SCALE	1" = 20'		
JOB NO.	B535-99		

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY MAP IS A VIOLATION OF SECTION 7209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

NOTE: THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.

"ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES."

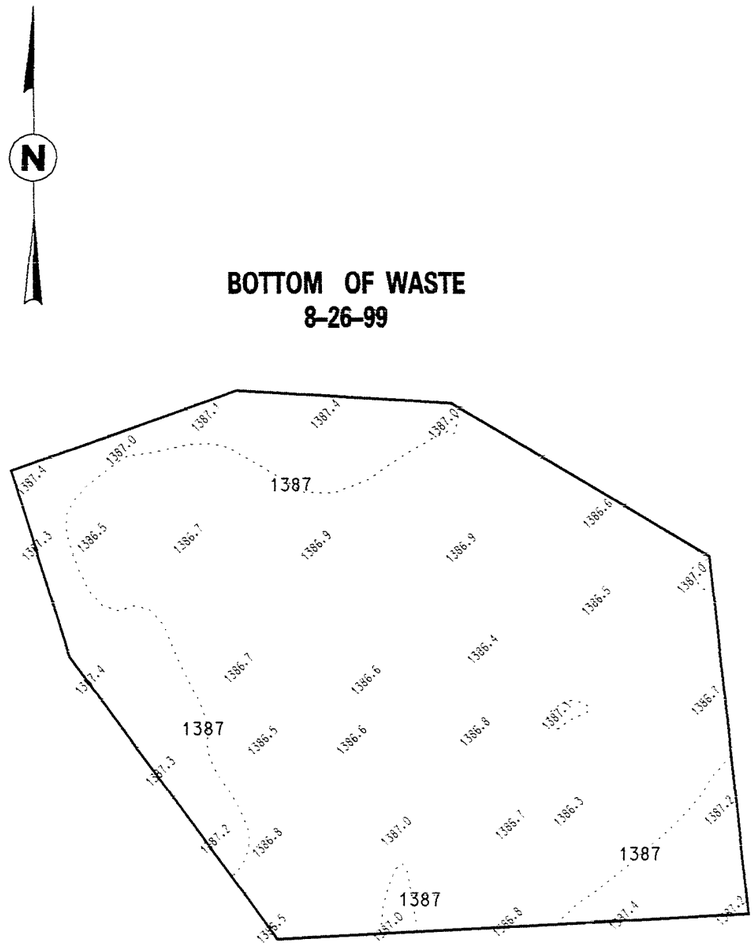
THIS SURVEY WAS PREPARED FOR THE PARTIES AND PURPOSE INDICATED HEREON. ANY EXTENSION OF THE USE BEYOND THE PARTIES OR PURPOSE INDICATED IS EXPRESSLY FORBIDDEN WITHOUT WRITTEN RELEASE OR PERMISSION OF THE UNDERSIGNED.

STEVEN J. LOMLEY LIC. NO. 49835

RESURVEYED	DATE

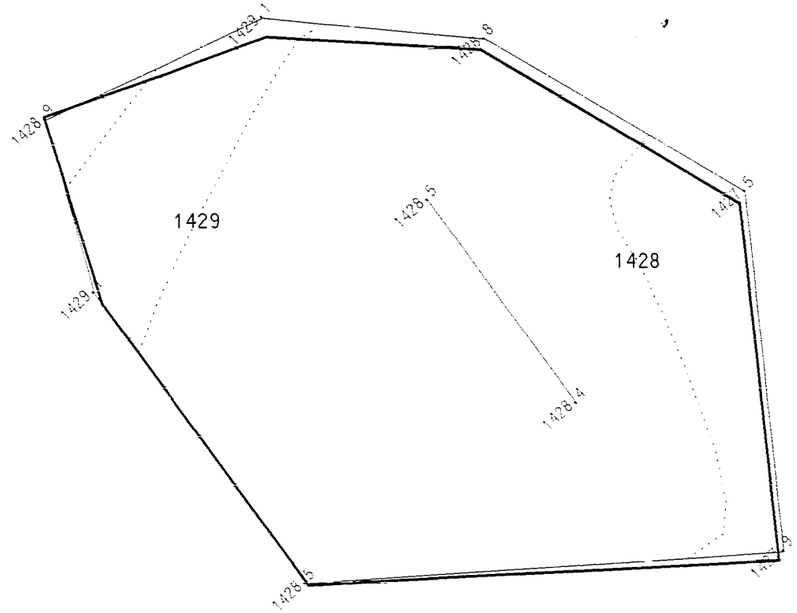
SUBMAP REFERENCE:

CAD FILE NAME: B535-4.DGN



BOTTOM OF WASTE
8-26-99

TOP OF SUBGRADE
10-15-99



Triangle Volume

Triangle Volume Report

Original Surface: b535003
Design Surface: B535-S

Mode: Selected Shapes
Cut Factor: 1.00
Fill Factor: 1.00

Cut: 0.00 cu ft
Fill: 216339.46 cu ft
Net: -216339.46 cu ft

Cut: 0.00 cu yd
Fill: 8012.57 cu yd
Net: -8012.57 cu yd

SURFACE AREA = 5236 SQUARE FEET

MAP
SHOWING VOLUME SURVEY
FROM BOTTOM OF WASTE
TO BACKFILL SUBGRADE
AT THE

VANDERHORST SITE

LOT	SECTION	TOWNSHIP	RANGE

CITY	OLEAN
COUNTY	CATTARAGUS
STATE	NEW YORK
DATE	10-15-99
SCALE	1" = 30'
JOB NO.	B535-99

RESURVEYED	DATE

"ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES."

THIS SURVEY WAS PREPARED FOR THE PARTIES AND PURPOSE INDICATED HEREON. ANY EXTENSION OF THE USE BEYOND THE PARTIES OR PURPOSE INDICATED IS EXPRESSLY FORBIDDEN WITHOUT WRITTEN RELEASE OR PERMISSION OF THE UNDERSIGNED.

STEVEN J. MALEY LIC. NO. 49835

NOTE: THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY MAP IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

REFERENCE:

Niagara Boundary
And Mapping Services

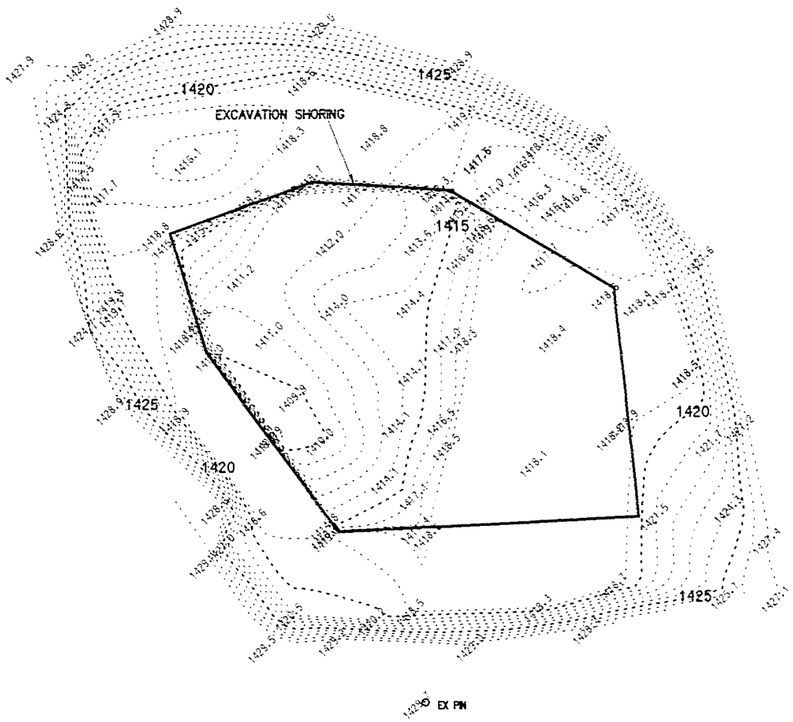
4769 LOWER RIVER ROAD
LEWISTON, N.Y. 14092
(716) 754-2462

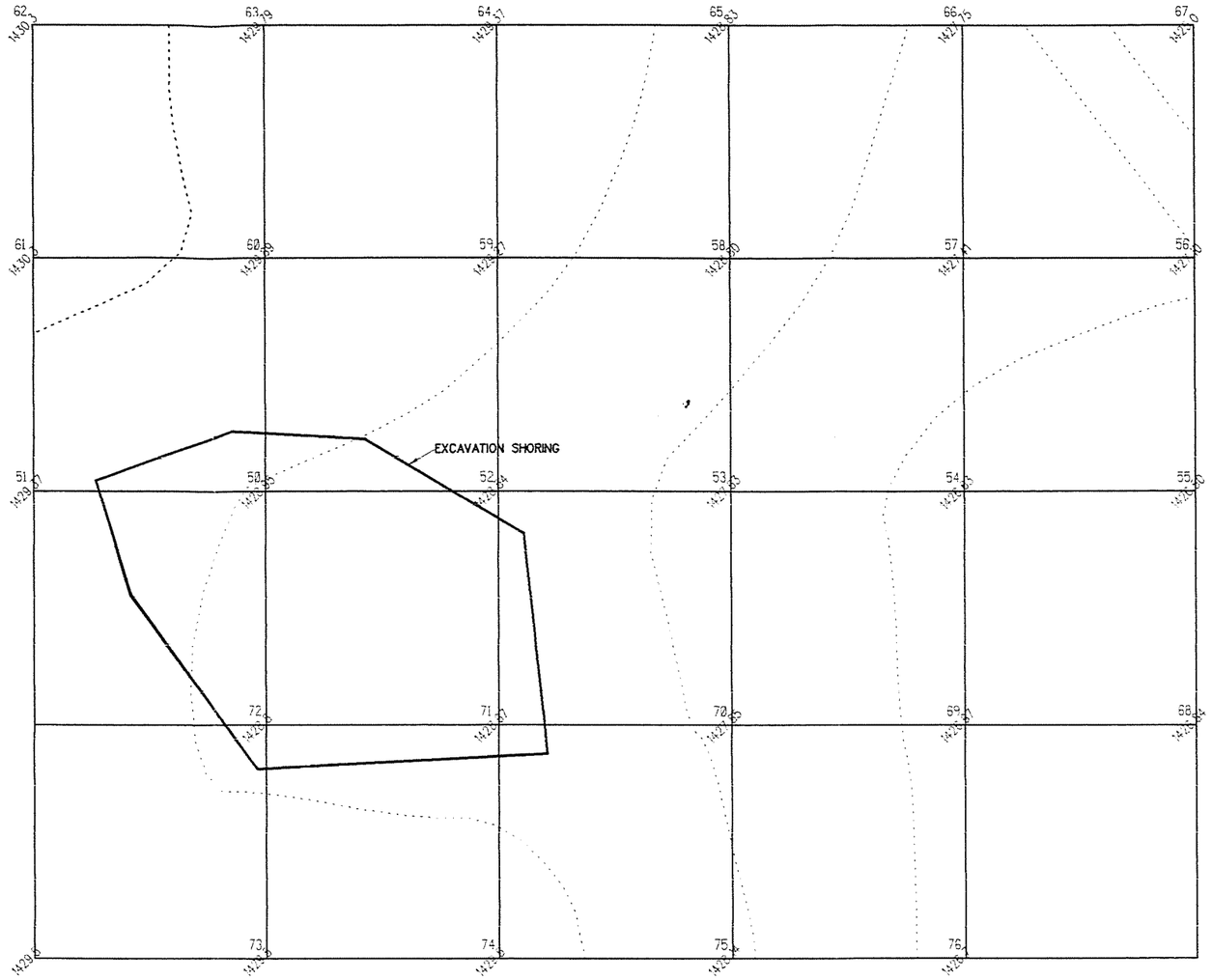
85 CENTRAL AVENUE
LANCASTER, NY. 14086
(716) 685-8097

1185 EAST MAIN STREET
BRADFORD, PA. 16701
(814) 368-9526

CADD FILE NAME: B535-S.DGN

TOPO SHOWING TOP OF ON-SITE FILL
AS MEASURED 10-4-99





OVERALL EXCAVATION FROM TOPO 10-4-99 TO SUBGRADE = 5344.5 CU. YDS.

MAP
SHOWING VOLUME SURVEY
OF
EXCAVATION TO BE BACKFILLED
TO ORIGINAL GROUND
AT THE

VANDERHORST SITE

NOTES:

1. COORDINATES AND ELEVATIONS SHOWN HEREON ARE BASED ON INFORMATION PROVIDED BY CIMINELLI SERVICES AS ESTABLISHED BY OTHERS

(NOT TO SCALE)

20' 0 20' 40'

SCALE BAR
IN FEET

Niagara Boundary
And Mapping Services

4769 LOWER RIVER ROAD
LEWISTON, N.Y. 14092
(716) 754-2462

85 CENTRAL AVENUE
LANCASTER, NY 14086
(716) 685-8097

1185 EAST MAIN STREET
BRADFORD, PA. 16701
(814) 368-9526

THIS SURVEY IS CERTIFIED TO THE FOLLOWING PARTIES:

BY_____ LIC. NO. _____ DATE_____

"CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE CODE OF PRACTICE FOR LAND SURVEYORS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS, AS AMENDED BY NIAGARA FRONTIER LAND SURVEYORS ASSOCIATION EFFECTIVE JANUARY 1, 1991. SAID CERTIFICATIONS SHALL RUN ONLY TO THE ENTITY FOR WHOM THE SURVEY IS PERFORMED, AND IF REQUESTED ON THEIR BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY, AND LENDING INSTITUTION LISTED HEREON, AND TO THE SUCCESSORS AND/OR ASSIGNEES OF THE LENDING INSTITUTION. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS."

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W. - WEST
S. - SOUTH
L. - LIBER
P. - PAGE
R.O.W. - RIGHT OF WAY
A.K.A. - ALSO KNOWN AS

LOT	SECTION	TOWNSHIP	RANGE
CITY	OLEAN		
COUNTY	CATTARAGUS		
STATE	NEW YORK		
DATE	10-9-99		
SCALE	1" = 20'		
JOB NO.	B535-99		

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY MAP IS A VIOLATION OF SECTION 7209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

NOTE: THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.

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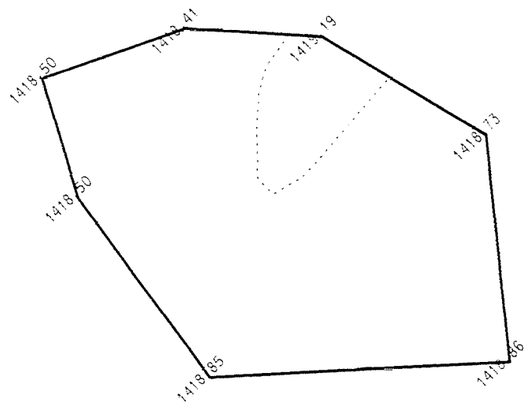
KENNETH J. SLAGENHOUPT LIC. NO. 50349

RESURVEYED	DATE

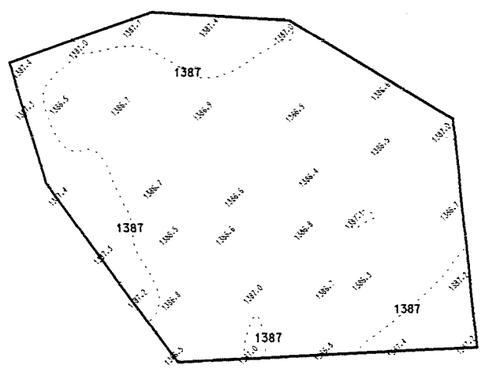
SUBMAP REFERENCE:

CAD FILE NAME: B535006.DGN

TOP OF SHORING
OCTOBER 1999

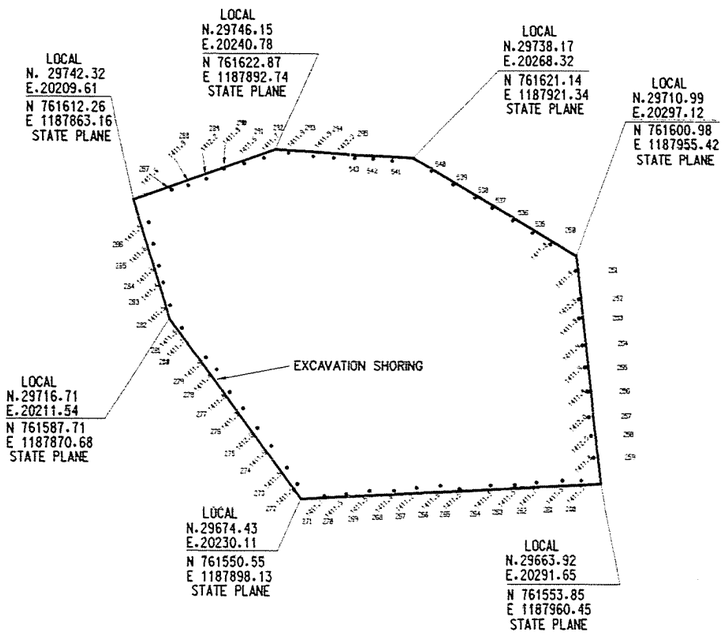


BOTTOM OF WASTE
8-26-99



SKETCH
SHOWING LOCATIONS OF EXCAVATION SHORING
AS MEASURED IN THE FIELD ON 7-8-99

SHOTS TAKEN ON THE PROJECTION OF THE INSIDE OF SHORING WALL, PER NYS DEC.



Triangle Volume

Triangle Volume Report

Original Surface: b535003
Design Surface: piling

Model Entire Surface
Cut Factor: 1.00
Fill Factor: 1.00

Cut: 0.00 cu ft
Fill: 157460 cu ft
Net: -157460 cu ft

Cut: 0.00 cu yd
Fill: 6202 cu yd
Net: -6202 cu yd

TIE BOLTS LOCATION
STATE PLANE COORDINATES

POINT #	NORTH	EAST	ELEVATION
250	761604.03	1187949.48	BOLT
251	761597.83	1187955.12	BOLT
252	761592.03	1187955.84	BOLT
253	761588.06	1187955.94	BOLT
254	761582.53	1187956.58	BOLT
255	761577.93	1187957.07	BOLT
256	761572.91	1187957.65	BOLT
257	761567.65	1187958.04	BOLT
258	761563.78	1187958.45	BOLT
259	761559.20	1187958.98	BOLT
260	761554.48	1187956.31	BOLT
261	761554.49	1187952.38	BOLT
262	761554.07	1187946.89	BOLT
263	761553.60	1187942.35	BOLT
264	761553.45	1187937.29	BOLT
265	761552.76	1187930.83	BOLT
266	761553.40	1187926.97	BOLT
267	761552.93	1187922.00	BOLT
268	761552.34	1187917.38	BOLT
269	761552.27	1187912.35	BOLT
270	761551.54	1187907.41	BOLT
271	761551.21	1187902.65	BOLT
272	761553.65	1187897.30	BOLT
273	761557.02	1187895.09	BOLT
274	761561.51	1187891.92	BOLT
275	761565.17	1187889.00	BOLT
276	761569.21	1187885.98	BOLT
277	761572.58	1187883.22	BOLT
278	761577.26	1187880.49	BOLT
279	761579.67	1187878.23	BOLT
280	761583.89	1187875.11	BOLT
281	761585.76	1187873.37	BOLT
282	761590.43	1187870.88	BOLT
283	761595.13	1187869.40	BOLT
284	761598.55	1187868.55	BOLT
285	761603.07	1187867.40	BOLT
286	761607.54	1187866.46	BOLT
287	761614.30	1187871.17	BOLT
288	761615.22	1187874.57	BOLT
289	761616.60	1187878.33	BOLT
290	761618.74	1187882.04	BOLT
291	761619.79	1187886.19	BOLT
292	761621.05	1187890.41	BOLT
293	761622.11	1187895.48	BOLT
294	761621.45	1187900.60	BOLT
295	761621.21	1187904.87	BOLT
535	761605.69	1187946.12	BOLT
536	761608.18	1187942.00	BOLT
537	761610.83	1187937.64	BOLT
538	761613.00	1187934.05	BOLT
539	761615.70	1187929.60	BOLT
540	761618.41	1187925.13	BOLT
541	761620.55	1187917.05	BOLT
542	761621.03	1187913.19	BOLT
543	761621.16	1187909.34	BOLT

NOTES:

1. COORDINATES AND ELEVATIONS SHOWN HEREON ARE BASED ON INFORMATION PROVIDED BY CIMINELLI SERVICES AS ESTABLISHED BY OTHERS

MAP
SHOWING VOLUME SURVEY
OF
AREA INSIDE METAL SHORING
FROM BOTTOM OF WASTE TO
TOP OF SHORING
AT THE
VANDERHORST SITE

(Not to Scale)

20' 0 20' 40'

SCALE BAR
IN FEET

Niagara Boundary
And Mapping Services

4769 LOWER RIVER ROAD
LEWISTON, N.Y. 14092
(716) 754-2462

85 CENTRAL AVENUE
LANCASTER, NY 14086
(716) 685-8097

1185 EAST MAIN STREET
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(814) 368-9526

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R.O.W. - RIGHT OF WAY
A.K.A. - ALSO KNOWN AS

LOT	SECTION	TOWNSHIP	RANGE
CITY	OLEAN		
COUNTY	CATTARAGUS		
STATE	NEW YORK		
DATE	10-9-99		
SCALE	1" = 20'		
JOB NO.	B535-99		

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY MAP IS A VIOLATION OF SECTION 7209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

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STEVEN J. MALOY LIC. NO. 49535

RESURVEYED	DATE

SUBMAP REFERENCE:

CAD FILE NAME: B535006.DGN

VOLUMES

Off site fill (from topo 10-4-99 to subgrade)	5344.5	cu. Yds.
Total backfill from bottom of waste to top of sharing	6199.0	cu. Yds
Bottom of waste to top of subgrade (inside sharing)	8098.6	cu. Yds.

NOTES

1. Topo 10-4-99 represents the top of backfill from the onsite fill.
2. Topo 10-21-99 represents final conditions including an average of 6" of topsoil.
3. Surface area of sharing: = 5236.0 square feet.
4. Surface area of overall excavation: = 14871.9 square feet.
5. Property line data is shown on this map according to scaled locations from site drawings provided by Ciminelli Services, Corp. No additonal research or boundary survey was performed by Niagara Boundary And Mapping Services.
6. Basis of elevations is NGVD 1929. Source Benchmark is "R - 68" located at the east side of the Pennsylvania Railroad Station. NGVD 1929 elevation = 1432.11' NAVD 88 elevation = 1431.61'.
7. Surface Area of Disturbed ground = 1.5 +/- acres.

COORDINATES ESTABLISHED BY NIAGARA BOUNDARY AND MAPPING SERVICES, LS, PC. DATED 11-11-99

SET CONCRETE MONUMENT WITH CAP
NEW YORK STATE PLANE COORDINATES
NAD 1983, WEST ZONE (3103)
N.761577.02
E. 1188096.32
ELEVATION = 1426.97' (NAVD 88)
ELEVATION = 1427.47' (NGVD 29)

W. WATER ST.

VINE STREET
ASPHALT ROADWAY

PENN AVENUE

EDGE OF DISTURBANCE

GRADED AREA

LIMIT OF EXCAVATION AREA

FORMER LOCATION OF EXCAVATION SHORING

APPROXIMATE LOCATION OF PROPERTY LINE
AS SCALED FROM DRAWINGS PROVIDED BY CIMINELLI

APPROXIMATE LOCATION OF RAILROAD TRACKS

MAP
SHOWING FINAL BACKFILL CONDITIONS
OF THE
VANDERHORST SITE

PREPARED FOR: CIMINELLI SERVICES, INC.

(NOT TO SCALE)

20' 0 20' 40'

SCALE BAR
IN FEET

Niagara Boundary
And Mapping Services

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P. = PAGE
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LOT	SECTION	TOWNSHIP	RANGE
CITY	OLEAN		
COUNTY	NIAGARA		
STATE	NEW YORK		
DATE	10-21-99		
SCALE	1" = 20'		
JOB NO.	B535-99		

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KENNETH J. SCHOONHOVEN, L.S. NO. 50349

RESURVEYED	DATE
REVISED VOLUME	12-15-99

SUBMAP REFERENCE:

CAD FILE NAME: B535-F.DGN

APPENDIX A

DRAWING INDEX

Drawing No.	Description

Contract Drawings:

3.	774103b1	Excavation Plan
4.	774103b2	Cross Section Through Area to be Excavated
5.	774103b3	Final; Grading Plan
6.	774103b4	Cross Section Through Backfill Area

As-Built Drawings:

1.	B535-S	Volume Survey from Bottom of Waste to Backfill Subgrade
2.	B535-4	Area inside Metal Shoring (Shoring Survey Information)
3.	B535008	Area inside Metal Shoring from Bottom of Waste to Top of Shoring. (Top of Waste (18' bgs) & Bottom of Waste Surveys (42' bgs))
4.	B535009	Excavation to be Backfilled to Subgrade (Topo showing Top of "on-site fill" backfill elevation.)
5.	b535-f	Final Backfill Conditions (Final Grade)
6.	Vand_haz	Topographic Survey (Pre-Excavation)

APPENDIX B

CONSTRUCTION RECORDS AND REPORTS INDEX

1. Contract Documents and Specifications
2. Supplementary Documents - Limited Site Data
3. Addendum No. 1
4. Certifications of Decontamination of Equipment
5. Certificate of Substantial Completion*
6. Change Order No. 1(final)*
7. Proposed Change Orders Nos. 1 through 8*
8. Contact Reports
9. Contractors Health and Safety Plan
10. Realtime Air Monitoring Records
11. Documentation Air Monitoring Records
12. Contractors Work Plan
13. Contractors Schedules
14. Contractor Submittals, Shop Drawings and Materials Testing
15. Daily Construction Reports*
16. Daily Safety Reports
17. Field Orders Nos. I through 11*
18. Job Meeting Minutes*
19. Monitoring Well Logs
20. NYSDEC Memorandums and Correspondence*
2 1. Ciminelli Services Corp Memorandums and Letters
22. News Releases and Articles
23. Notice to Proceed
24. Public Notices/Fact Sheets*
25. Pollution Liability Insurance
26. Payrolls (CSC)
27. Payrolls (Subcontractors)
28. Verification Sampling/Analytical Results*
29. Remediation Summary Report*
30. Post-Closure Monitoring & Maintenance Plan*

* - Copies of these documents can be found on the enclosed CD-ROM included with this report.

APPENDIX C

CONSTRUCTION PHOTO INDEX

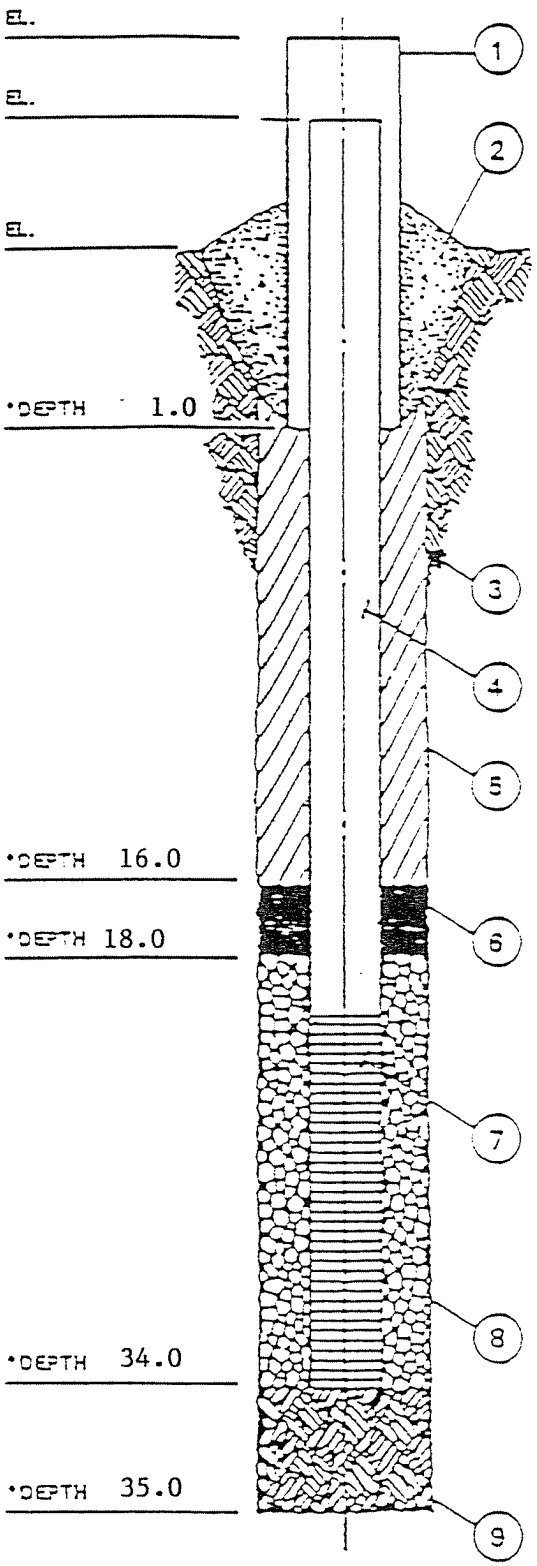
The following photos can be found on the CD-ROM that enclosed at the end of this report.

Photo Category:	Folder Name:	Number of Photos in Category:
Preconstruction	PRECONST	43
Non-Hazardous Soil Excavation	NONHAZEXC	46
Shoring Installation	SHORING	28
Hazardous Soil (monolith) Excavation	HAZEXC	132
Groundwater treatment	GWTREATMENT	28
Backfill/restoration	BACKFILLRESTO	78

APPENDIX D

MONITORING WELL CONSTRUCTION DIAGRAMS

MONITORING WELL COMPLETION REPORT



•DEPTH IN FEET BELOW GRADE

WELL NO. Railroad Well MW-5S

PROJECT NO. 99-02057

DATE INSTALLED 10/22/99

PROJECT VANDERHORST PLANT #1

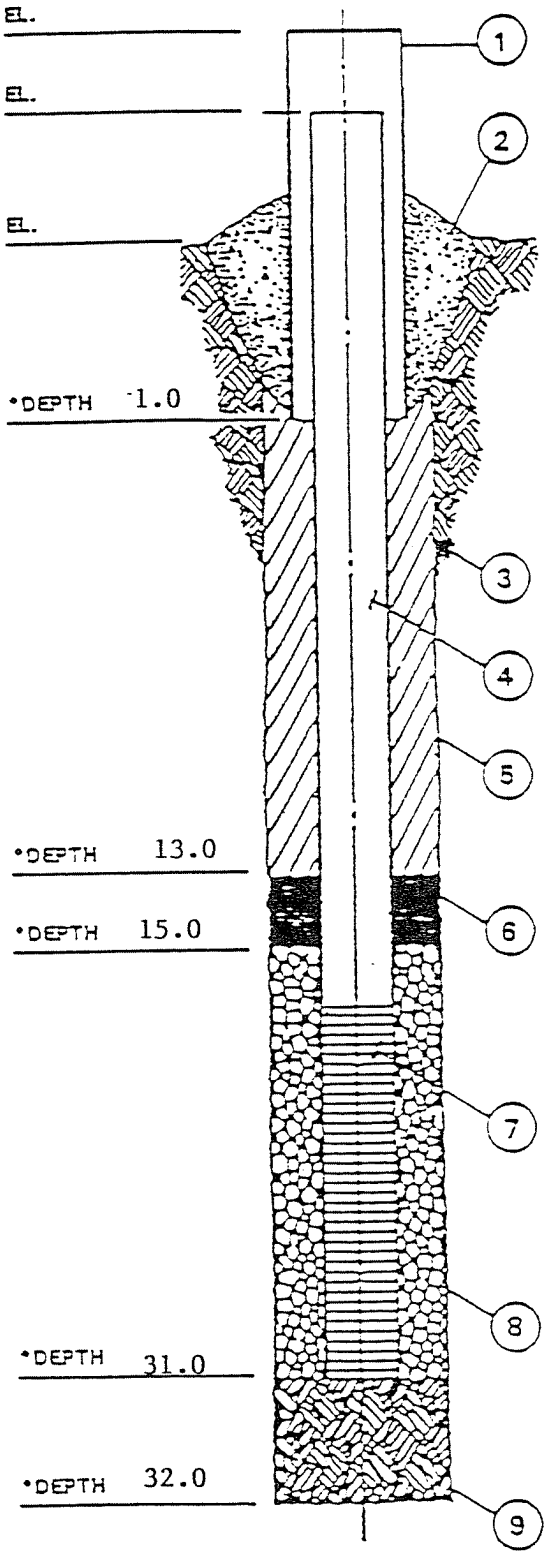
OLEAN, NY

1. PROTECTIVE CASING I.D. (INCHES) 4"
2. SURFACE SEAL TYPE SAKRETE
3. BOREHOLE DIAMETER (INCHES) 8"
4. RISER PIPE
   - TYPE PVC
   - I.D. (INCHES) 2"
   - LENGTH (FEET) 21'
   - JOINT TYPE THREAD FLUSH
5. BACKFILL
   - TYPE BENTONITE GROUT
   - INSTALLATION TREMIE
6. TYPE OF SEAL BENTONITE CHIP
7. SCREEN
   - TYPE PVC CONTINUOUS WRAP
   - I.D. (INCHES) 2"
   - SLOT SIZE (INCHES) 20
   - LENGTH 15'
8. SCREEN FILTER TYPE SILICA SAND #0
9. BACKFILL TYPE Silica Sand #0

NOTE: APPROXIMATELY 2" OF SILICA SAND #00 INSTALLED ON TOP OF BENTONITE SEAL TO PREVENT GROUT FROM LEACHING INTO SANDPAK

MAXIM TECHNOLOGIES INC

MONITORING WELL COMPLETION REPORT



•DEPTH IN FEET BELOW GRADE

WELL NO. 16S (F03)

PROJECT NO. 99-02057

DATE INSTALLED 10/21/99

PROJECT VANDERHORST PLANT #1

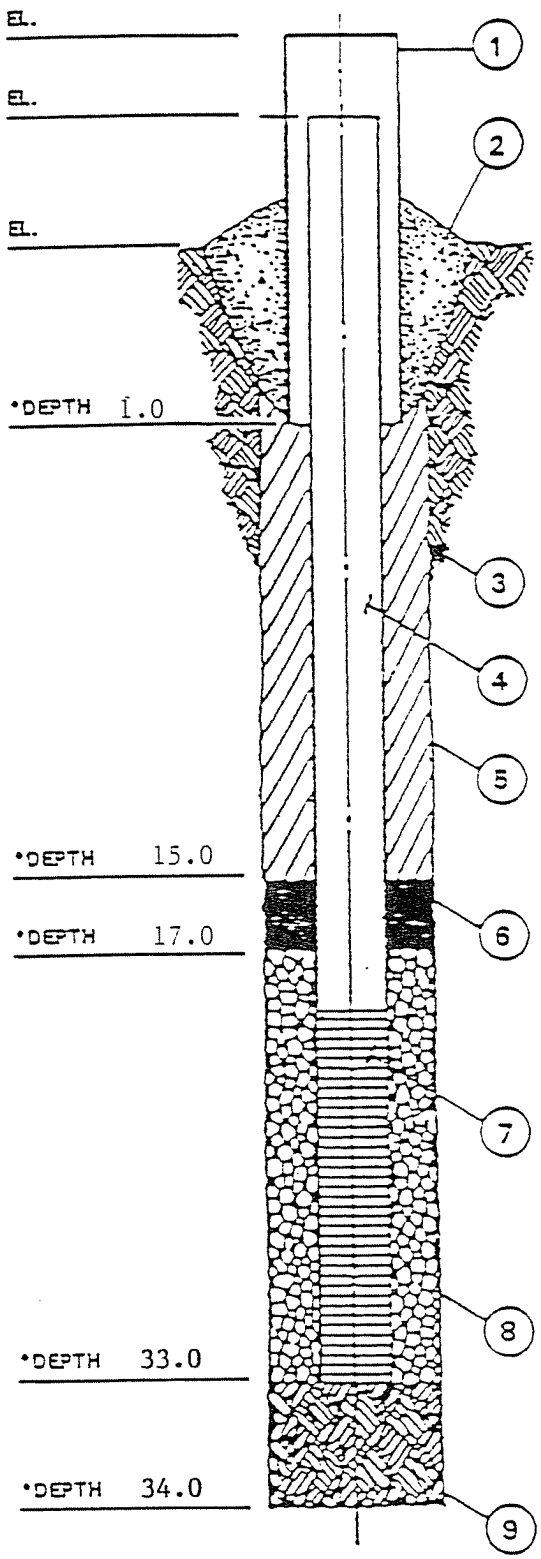
OLEAN, NY

1. PROTECTIVE CASING I.D. (INCHES) 4"
2. SURFACE SEAL TYPE SAKRETE
3. BOREHOLE DIAMETER (INCHES) 8"
4. RISER PIPE
   - TYPE PVC
   - I.D. (INCHES) 2"
   - LENGTH (FEET) 19'
   - JOINT TYPE THREAD FLUSH
5. BACKFILL
   - TYPE BENTONITE GROUT
   - INSTALLATION TREMIE
6. TYPE OF SEAL BENTONITE CHIP
7. SCREEN
   - TYPE PVC CONTINUOUS WRAP
   - I.D. (INCHES) 2"
   - SLOT SIZE (INCHES) 20
   - LENGTH 15
8. SCREEN FILTER TYPE SILICA SAND #0
9. BACKFILL TYPE Silica Sand #0

NOTE: APPROXIMATELY 2" OF SILICA SAND #00 INSTALLED ON TOP OF BENTONITE SEAL TO PREVENT GROUT FROM LEACHING INTO SANDPAK

MAXIM TECHNOLOGIES INC

MONITORING WELL COMPLETION REPORT



•DEPTH IN FEET BELOW GRADE

WELL NO. 17 S (F01)

PROJECT NO. 99-02057

DATE INSTALLED 10/19/99

PROJECT VANDERHORST PLANT #1

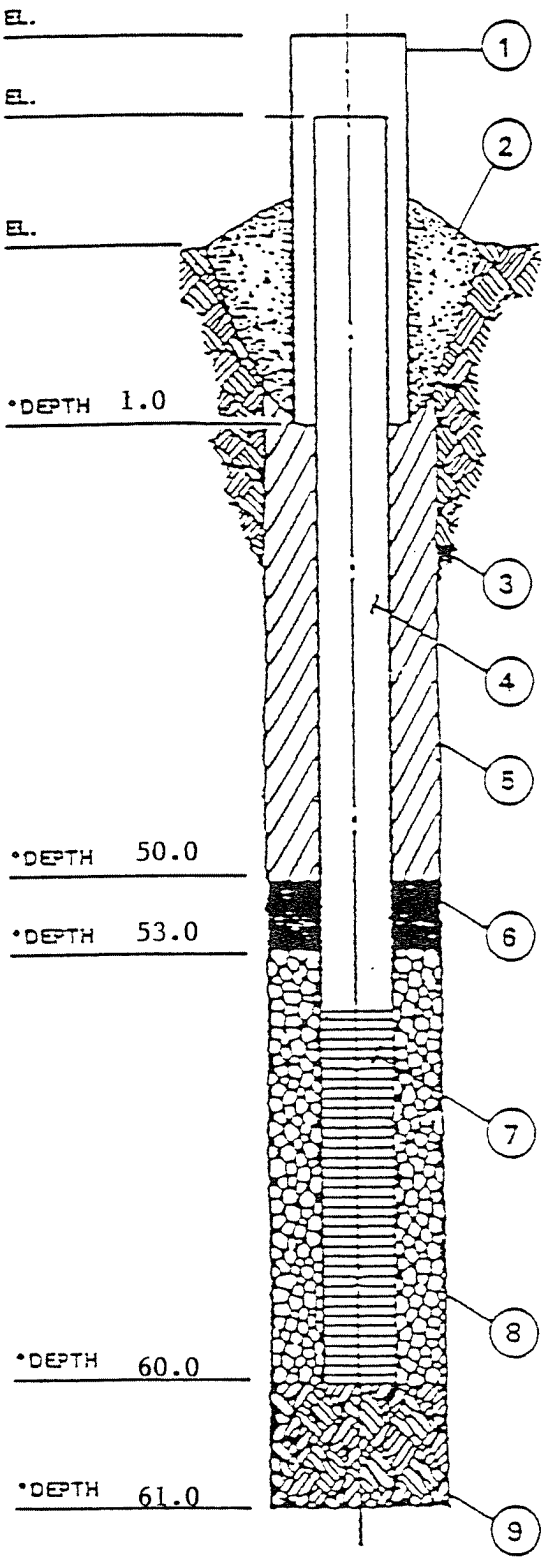
OLEAN, NY

1. PROTECTIVE CASING I.D. (INCHES) 4"
2. SURFACE SEAL TYPE SAKRETE
3. BOREHOLE DIAMETER (INCHES) 8"
4. RISER PIPE
   - TYPE PVC
   - I.D. (INCHES) 2"
   - LENGTH (FEET) 21'
   - JOINT TYPE THREAD FLUSH
5. BACKFILL
   - TYPE BENTONITE GROUT
   - INSTALLATION TREMIE
6. TYPE OF SEAL BENTONITE CHIP
7. SCREEN
   - TYPE PVC CONTINUOUS WRAP
   - I.D. (INCHES) 2"
   - SLOT SIZE (INCHES) 20
   - LENGTH 15'
8. SCREEN FILTER TYPE SILICA SAND #0
9. BACKFILL TYPE SILICA SAND # 0

NOTE: APPROXIMATELY 2" OF SILICA SAND #00 INSTALLED ON TOP OF BENTONITE SEAL TO PREVENT GROUT FROM LEACHING INTO SANDPAK

MAXIM TECHNOLOGIES INC

MONITORING WELL COMPLETION REPORT



•DEPTH IN FEET BELOW GRADE

WELL NO. 17D (F02)

PROJECT NO. 99-02057

DATE INSTALLED 10/21/99

PROJECT VANDERHORST PLANT #1

OLEAN, NY

1. PROTECTIVE CASING I.D. (INCHES) 4"
2. SURFACE SEAL TYPE SAKRETE
3. BOREHOLE DIAMETER (INCHES) 8"
4. RISER PIPE
   - TYPE PVC
   - I.D. (INCHES) 2"
   - LENGTH (FEET) 58'
   - JOINT TYPE THREAD FLUSH
5. BACKFILL
   - TYPE BENTONITE GROUT
   - INSTALLATION TREMIE
6. TYPE OF SEAL BENTONITE CHIP
7. SCREEN
   - TYPE PVC CONTINUOUS WRAP
   - I.D. (INCHES) 2"
   - SLOT SIZE (INCHES) 20
   - LENGTH 5
8. SCREEN FILTER TYPE SILICA SAND #0
9. BACKFILL TYPE Running Sands (NYSDEC Notified On-Site)

NOTE: APPROXIMATELY 2" OF SILICA SAND #00 INSTALLED ON TOP OF BENTONITE SEAL TO PREVENT GROUT FROM LEACHING INTO SANDPAK

MAXIM TECHNOLOGIES INC

APPENDIX E

GROUNDWATER PUMPING LABORATORY RESULTS

Columbia Analytical Services inc.

1 Mustard St., Suite 250
Rochester, NY 14609

Date: September 15, 1999
Number of pages: 8

To:

Mr. G.P. Sutton
NYS DEC - Region 9
270 Michigan Blvd.
Buffalo, NY 14203-2999

Phone: 716-851-7220

Fax: 716-851-7226

CC:

From:

Michael Perry

Phone: (716) 288-5380

Fax: (716) 288-8475

RUSH REPORT

Submission #: 9909000150
Project Reference: NYSDEC

IMPORTANT NOTICE:

COLUMBIA ANALYTICAL SERVICES

Reported: 09/15/99

NYS DEC - Region 9
Project Reference:NYSDEC
Client Sample ID :SH999-0910-188901

Date Sampled : 09/10/99
Date Received: 09/13/99

Order #: 323743
Submission #:9909000150

Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	115	MG/L	09/15/99	100.0

COLUMBIA ANALYTICAL SERVICES

Reported: 09/15/99

NYS DEC - Region 9
Project Reference:NYSDEC
Client Sample ID :SH999-0910-188902

Date Sampled : 09/10/99
Data Received: 09/13/99
Order #: 323744
Submission #:9909000150
Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	124	MG/L	09/15/99	100.0

COLUMBIA ANALYTICAL SERVICES

Reported: 09/15/99

NYS DEC - Region 9
Project Reference: NYSDEC
Client Sample ID : SH999-0910-188903

Date Sampled : 09/10/99
Date Received: 09/13/99
Order #: 323745
Submission #: 9909000150
Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	112	MG/L	09/15/99	100.0

COLUMBIA ANALYTICAL SERVICES

Reported: 09/15/99

NYS DEC - Region 9
Project Reference:NYSDEC
Client Sample ID :SH999-0910-188904

Date Sampled : 09/10/99 **Order #:** 323746 **Sample Matrix:** WATER
Date Received: 09/13/99 **Submission #:**9909000150

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	99.5	MG/L	09/15/99	100.0

COLUMBIA ANALYTICAL SERVICES

Reported: 09/15/99

NYS DEC - Region 9
Project Reference: NYSDEC
Client Sample ID : SH999-0910-188905

Date Sampled : 09/10/99
Date Received: 09/13/99
Order #: 323747
Submission #: 9909000150
Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	90.4	MG/L	09/15/99	100.0

COLUMBIA ANALYTICAL SERVICES

Reported: 09/15/99

NYS DEC - Region 9
Project Reference: NYSDEC
Client Sample ID : SH999-0910-188906

Date Sampled : 09/10/99
Date Received: 09/13/99
Order #: 323748
Submission #: 9909000150
Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	73.0	MG/L	09/15/99	100.0

COLUMBIA ANALYTICAL SERVICES

Reported: 09/15/99

NYS DEC - Region 9
Project Reference: NYSDEC
Client Sample ID : SH999-0910-188907

Date Sampled : 09/10/99
Date Received: 09/13/99
Order #: 323749
Submission #: 9909000150
Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	63.5	MG/L	09/15/99	100.0

Columbia Analytical Services inc.

1 Mustard St.,Suite 250
Rochester, NY 14609

Date: September 17, 1999
Number of pages: 3

To:

Mr. G.P. Sutton
NYS DEC - Region 9
270 Michigan Blvd.
Buffalo, NY 14203-2999

Phone: 716-851-7220

Fax: 716-851-7226

CC:

From:

Michael Perry

Phone: (716) 288-5380

Fax: (716) 288-8475

RUSH REPORT

Submission #: 9909000150
Project Reference: NYSDEC

IMPORTANT NOTICE:

COLUMBIA ANALYTICAL SERVICES

Reported: 09/17/99

NYS DEC - Region 9
Project Reference:NYSDEC
Client Sample ID :SH999-0915-188908

Date Sampled : 09/15/99
Date Received: 09/16/99

Order #: 324930
Submission #:9909000150

Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	52.7	MG/L	09/17/99	100

COLUMBIA ANALYTICAL SERVICES

Reported: 09/17/99

NYS DEC - Region 9
Project Reference: NYSDEC
Client Sample ID : SH999-0915-188909

Date Sampled : 09/15/99
Date Received: 09/16/99

Order #: 324937
Submission #: 9909000150

Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	46.6	MG/L	09/17/99	100

Columbia Analytical Services, Inc.

1 Mustard St., Suite 250
Rochester, NY 14609

Date: September 23, 1999
Number of pages: 4

To:	From:
Mr. G.P. Sutton NYS DEC - Region 9 270 Michigan Blvd. Buffalo, NY 14203-2999	Michael Perry
Phone: 716-851-7220	Phone: (716) 288-5380
Fax: 716-851-7226	Fax: (716) 288-8475
CC:	

RUSH REPORT

Submission #: 9909000301
Project Reference: NYS DEC

IMPORTANT NOTICE:

COLUMBIA ANALYTICAL SERVICES

Reported: 09/23/99

NYS DEC - Region 9
Project Reference: NYS DEC
Client Sample ID : SH999-0921-188909

Date Sampled : 09/21/99
Date Received: 09/21/99
Order #: 326052
Submission #: 9909000301
Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
WET CHEMISTRY					
OIL AND GREASE	5.00	5.00 U	MG/L	09/23/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/23/99

NYS DEC - Region 9
Project Reference: NYS DEC
Client Sample ID : SH999-0921-188910

Date Sampled : 09/21/99
Date Received: 09/21/99
Order #: 326053
Submission #: 9909000301
Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	42.1	MG/L	09/23/99	10.0

COLUMBIA ANALYTICAL SERVICES

Reported: 09/23/99

NYS DEC - Region 9
Project Reference: NYS DEC
Client Sample ID : SH999-0921-188911

Date Sampled : 09/21/99
Date Received: 09/21/99
Order #: 326054
Submission #: 9909000301
Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	38.7	MG/L	09/23/99	10.0

Columbia Analytical Services Inc.

1 Mustard St., Suite 250
Rochester, NY 14609

Date: September 28, 1999
Number of pages: 12

To:	From:
Mr. G.P. Sutton NYS DEC - Region 9 270 Michigan Blvd. Buffalo, NY 14203-2999	Michael Perry
Phone: 716-851-7220	Phone: (716) 288-5380
Fax: 716-851-7226	Fax: (716) 288-8475
CC:	

RUSH REPORT

Submission #: 9909000301
Project Reference: NYS DEC

IMPORTANT NOTICE:

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference:NYS DEC
Client Sample ID :SH999-0922-188912

Date Sampled : 09/23/99 **Order #:** 327088 **Sample Matrix:** WATER
Date Received: 09/23/99 **Submission #:**9909000301

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	40.0	MG/L	09/28/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference:NYS DEC
Client Sample ID :SH999-0922-188913

Date Sampled : 09/23/99 **Order #:** 327091 **Sample Matrix:** WATER
Date Received: 09/23/99 **Submission #:**9909000301

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	29.2	MG/L	09/28/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference:NYS DEC
Client Sample ID :SH999-0927-188914

Date Sampled : 09/24/99 **Order #:** 327608 **Sample Matrix:** WATER
Date Received: 09/27/99 **Submission #:**9909000301

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	24.8	MG/L	09/28/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference:NYS DEC
Client Sample ID :SH999-0927-188915

Date Sampled : 09/25/99 **Order #:** 327609 **Sample Matrix:** WATER
Date Received: 09/27/99 **Submission #:**9909000301

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	22.3	MG/L	09/28/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference:NYS DEC
Client Sample ID :SH999-0927-188916

Date Sampled : 09/26/99 **Order #:** 327610 **Sample Matrix:** WATER
Date Received: 09/27/99 **Submission #:**9909000301

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	19.6	MG/L	09/28/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference:NYS DEC
Client Sample ID :SH999-0927-188917

Date Sampled : 09/26/99 **Order #:** 327611 **Sample Matrix:** WATER
Date Received: 09/27/99 **Submission #:**9909000301

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	16.6	MG/L	09/28/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference: NYS DEC
Client Sample ID : SH999-0927-188918

Date Sampled : 09/27/99 **Order #:** 327612 **Sample Matrix:** WATER
Date Received: 09/27/99 **Submission #:** 9909000301

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	15.9	MG/L	09/28/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference:NYS DEC
Client Sample ID :SH999-0927-188919

Date Sampled : 09/27/99 **Order #:** 327613 **Sample Matrix:** WATER
Date Received: 09/27/99 **Submission #:**9909000301

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	13.8	MG/L	09/28/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference:NYS DEC
Client Sample ID :SH999-0927-188920

Date Sampled : 09/27/99 **Order #:** 327614 **Sample Matrix:** WATER
Date Received: 09/27/99 **Submission #:**9909000301

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	15.1	MG/L	09/28/99	1.00

COLUMBIA ANALYTICAL SERVICES

Reported: 09/28/99

NYS DEC - Region 9
Project Reference: NYS DEC
Client Sample ID : SH999-0927-188921

Date Sampled : 09/27/99
Date Received: 09/27/99
Order #: 327615
Submission #: 9909000301
Sample Matrix: WATER

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
CHROMIUM	0.0100	12.1	MG/L	09/28/99	1.00

APPENDIX F

DESCRIPTION OF PROPOSED CHANGE ORDERS AND CHANGE ORDERS

APPENDIX F
DESCRIPTION OF FIELD ORDERS, PROPOSED CHANGE ORDERS (PCOs) AND CHANGE ORDERS (COs)

Field Orders:

1. Request by Ciminelli to allow the shoring subcontractor permission to use a foremen within the exclusion zone that has 40 certification & medical monitoring but has not been recertified through 8 hr. supplemental training in 2 years. Foreman will only perform work within the "clean excavation" area. All other personnel (operators) from the subcontractor will meet all site requirements. DEC will allow the use of the foremen within the exclusion zone to accomplish this work task. However, it should be noted that this position by DEC DOES NOT release or otherwise wave CSC obligations to meet all OSHA regulations pertaining to work on a designated hazardous waste site.

2. CSC questions if truck driver moving the top 18' of excavated soil on site be exempt from the site physical requirement. The DEC will agree to exempt the truck driver from the physical requirement as long as he remains in his truck while onsite.

3. What work is still outstanding or required of CSC prior to beginning sheet pile work. Prior to beginning sheet pile work the following need to be completed: 1) Resurvey the location of the monolith in the excavation. 2) Document the existing conditions of home foundations of adjacent houses, and 3) Vibration monitoring equipment must be onsite and operating.

4. CSC noted yellow stained mortar and soils in pre-excavation. DEC requested that CSC: 1) begin their stockpile of contaminated soils to be placed as backfill first following completion of other contract requirements, and 2) begin documentation air sampling while moving any visibly contaminated soils.

5. CSC did not anticipate finding contaminated soils in the top 10' of excavation and now have situation to address. Can CSC do a modified decontamination of the LCA Development truck as the decon pad is not fully operational at this time? CSC proposed cleaning the truck box and tires using a fire hose, with 110 psi, with the water being returned to the monolith area. The DEC will accept this decontamination procedure as a one time exemption. The DEC will not allow this procedure in the future and expresses their desire for CSC to complete the construction of the site decontamination pad ASAP.

6. (This Field Order number was not used.)

7. The Righter Co., the sheet pile subcontractor believes that the corners marked by the surveyors are wrong as they do not match the sheet pile design. DEC noted that the corners marked by the surveyor are not the sheet pile corners, but the monolith corners. The sheet pile design is made to enclose the monolith, but does not follow the exact dimensions of the monolith. The sheet pile drawing does show the survey corners as well as the sheet pile corners.

8. CSC does not agree with the original number of Health & Safety Officer days originally agreed to with the DEC Insp. (10) CSC believes that the appropriate number of days should be 24, beginning with the day Mr. Tom Patrick was overseeing the activities of CSC employees onsite. The DEC agrees with this request and anticipates seeing the appropriate corrections on CSC's

initial application for payment.

9. CSC informed the DEC inspector that they anticipate working 5 - 10 hour days next week. Prior to CSC working overtime, they must request and be granted dispensation to work overtime from the NYSDOL. Before CSC begins working overtime this issue must be resolved.

10. CSC requested that Contractor's Application for Payment (CAP) #1 be processed. DEC's inspector was in receipt of CSC's Contractor Application for Payment (CAP) #1, but cannot approve and sign off on the application until DEC has received a proof of payment for the Pollution Liability Insurance - Item 1A, as previously discussed. Please forward a receipt or other proof of payment ASAP.

11. Templet for sheet pile driving, is not required in the contract specifications. The DEC agrees that the use of a templet to assist in the installation of sheet piling is not required in the Contract Specifications. The use of a templet was specified in the CSC sheet piling work plan. CSC and it's subcontractor may proceed with the installation of the sheet piling, however the DEC reminds CSC that the contract does have design Quality Control that must be met with or without the use of the templet.

12. The mill reports for the sheet pile onsite are not available at this time. These will be forwarded to the DEC ASAP, however CSC would like to begin the installation of the sheet piling before these reports are onsite. The DEC will allow CSC to begin installation with the following conditions: 1) If no Mill Report is found for the onsite steel, or the steel is determined to be unacceptable, CSC is physically and financially responsible for the removal of the unacceptable product and the installation of acceptable steel.

13. The installation angle of the sheet pile anchors was not specified in the sheet pile submittal. What is the appropriate angle for these anchors? The sheet pile engineer submitted a clarification stating that the appropriate angle for the anchors should be 30 degrees off horizontal, +/- 5 degrees.

14. CSC would like to know how to handle the soils found inside the pressure tank and poly tanks formerly stored in Building #24. The DEC, knowing the origin of these solids, would like CSC to stage the solids till shipment of hazardous waste begins and include the solids with the hazardous waste.

15. CSC would like to discontinue real time air monitoring when soils are not presently being moved. Periods like lunch or extended equipment repairs that stop soil movement. Air monitoring, real time and documentation, will be done for the entire work day if soils are to moved at all during that day.

16. At no time are truck drivers to enter a loaded trailer to place rails or tarps. If these fixtures cannot be placed from outside of the trailer, then it must be done by someone having all appropriate Hanna Furnace site&S requirements including physicals.

Proposed Change Orders:

PCO No. 1 - A. Abandonment of two former pumping wells and the abandonment of one former monitoring well

B. Installation of 7 additional Norway spruce trees along the southwest property boundary.
C. Purchase of a Sony Mavica MVC-FD71 digital Camera.

PCO No. 2 - A. VOC air monitoring

PCO No. 3 - A. Residential Relocation

PCO No. 4 - A. Immediate cleanup and containment of the oil slick in the excavation.
B. Sampling and analysis of the oil slick
C. Conduct short term real time and documentation monitoring in Veno backyard.

PCO No. 5 - A. Change of particulate air monitoring equipment.(data logger).

PCO No. 6 - A. Analysis of Documentation Air Monitoring Samples.

PCO No. 7 - A. Repair of Department owned Kodak Digital Camera.

PCO No. 8 - A. Application of grass seed during site restoration by hydroseeding method and credit for seed application as per specification.
B. Payment of Department telephone bill exceeding the $150.00 maximum amount in Section 01590, Item. 3.2. of the Contract
C. Sample and dispose of three (3) unknown drums.
D. Positioning of influent pump during groundwater treatment phase of work.
E. Repair of residential fence.
F. Replace fence section in area of former Building 24.
G. Grub and Regrade site along Vine Street.

Change Order #1 (final)

A. Decrease in cost of Bid Item No. 2 - Site Services. Although the quantity increased from 124 to 141 days the final cost figure, for this bid item, was prorated based on the actual quantity of all the subitems in this category (ie: site security, access roads, staging areas, etc.) that were not used for the entire duration of the contract period and therefore were not paid for.

B. Decrease in cost of Bid Item No. 3 - Health and Safety adjusted for actual work performed during the contract period. Although the quantity increased from 90 to 107 days, this item was prorated based on the actual quantities of all the subitems.

C. Decrease in quantity of Bid Item No. 5 - Excavation (0-18 ft.), Staging and Backfilling of Non-hazardous soil. Decrease in quantity of Non-Hazardous Excavation was the result of the increase of soil that was determined to be hazardous and was excavated and disposed of under Bid item 6.

D. Increase in quantity of Bid Item No. 6 - Excavation Hazardous Soil (18-42 ft.). Increase in quantity of Excavation of Hazardous Soil was the result of the increase of soil that was determined to be hazardous and was located within the 0 - 18 ft. zone. A resulting decrease in non-haz. soil was provided in Item C above.

E. Increase in quantity of Bid Item No. 6 - Off-site Transportation and Disposal of Hazardous Soil. Increase in quantity of Excavation of Hazardous Soil was the result of the increase of soil that was determined to be hazardous and was located within the 0 - 18 ft. zone.

F. Abandonment of two former pumping test wells and the abandonment of one former monitoring

well as per PCO#1. Abandonment of the well are necessary because they will no longer be needed for the project and proper decommissioning of the wells are in accordance with Department policy.

G. Installation of 7 additional Norway spruce trees along the Southwest property boundary as per PCO#1. Demolition of Building #24, at the contractors option, required that trees be planted in the area of the building to be consistent with the tree planting schedule already in the contract.

H. Purchase of a Sony Mavica MVC-FD71 digital Camera per PCO#1. Due to a State Budget not being passed in a timely manner the Department was unable to purchase items, such as this, for use on this project. Therefore, this item was purchased through the contractor

I. Provide for air monitoring for Volatile Organic Compounds (VOCs) during excavation activities as per PCO#2. The contractor was directed by the Department that during excavation activities below the ground water table, PID monitoring would be conducted along the site boundaries as part of the community monitoring plan due a petroleum odor has been noted within the excavation area.

J. Establishment of a Residential Relocation Program. During excavation of hazardous soil below the groundwater table a previously undetected layer of suspected diesel oil material was encountered. During excavation activities this material produced a significant odor that could not be adequately controlled using standard engineering control methods. Based on determination made by the NYSDOH, a program to relocate effected residents to a local motel during working hours was implemented as per PCO#3.

K. Conduct the following activities in response to a previously unknown oily material within the excavation area as per PCO#4
A. Immediate clean-up and containment of the oil slick in the excavation.
B. Sampling and analysis of the oil slick.
C. Conduct short duration real time and documentation air monitoring during three consecutive nights. Immediate clean up of the oil was necessary to reduce odor from the site, Additional air monitoring was performed to help alleviate residential concerns with dust and petroleum odors at the site as requested by the NYSDOH, and, the sampling and analysis of the oil slick was necessary to identify the petroleum products involved to determine if they would require special health and safety or remedial provisions to be taken.

L. Change of particulate air monitoring equipment as per PCO#5. Increase public concerns on dust generation and controls requires upgraded monitoring on the project. The upgraded equipment provided greater accuracy and reliability and frequency of measurements, which DOH considered critical based on the short distance to the residential community.

M. Analysis of Documentation air monitoring samples as per PCO#6. Analysis required by New York State Department of Health.

N. Repair of Department owned Kodak digital camera as per PCO#7. During routine inspection activities by Department staff the camera was damaged and required repair. Due to a State Budget not being passed in a timely manner the Department was unable to repair the camera for use on the project. Therefore, repair of this item was pursued through the contractor.

O. Contractor payment of Department incurred overtime. Scheduling of contractor work hours required that Department personnel incur additional time at the site beyond the normal work

period of the contract resulting in overtime payment to the Department.

P. Payment of Department telephone bill exceeding the $150.00 maximum amount in Section 01590, Item. 3.2. of the Contract. Department long distance telephone bills for the months of June and September 1999 exceeded the cap of $150 established in the contract.

Q. Sample and dispose of three (3) unknown drums. Sampling of the three unknown drums was required by the disposal facility prior to disposal. These drums contains petroleum contaminated soil and had not been identified in the contract documents.

R. Positioning of influent pump during groundwater treatment phase of work. The Department required that the influent pump to the groundwater treatment unit be positioned in the center of the excavation to provide an even distribution of water withdrawal from the excavation area.

S. Repair of residential fence. The Department agreed to repair a fence that was improperly installed during a previous phase of work on the site.

T. Increase in the duration of the contract time per Section VI, Article 6 for (1) substantial completion and for (2) final payment. Duration of the contract was extended to address several items of additional work items contained in PCOs #s 1 to 8 required by the Department. It also addressed unknown conditions that were encountered by the contractor during contract work such as dealing with a layer of poly barrier at the 18 ft. bgs level and broken concrete that was also in the excavation area that were not identified in the contract documents.

U. A no cost to the Department time extension, which includes a credit based on the additional construction management and inspection costs incurred by the Department during the extension period. Contractor failed to complete the project with in the specified contract time (124) days specified in Section 6.1 of the contract. Department and Contractor negotiated reimbursement of Department costs incurred during time period in lieu of liquidated damages.

V. Increase in quantity of Bid Item No. 10 - Backfill below the Water Table. Increase in quantity of Backfill below the Water Table was due the unexpected rise of the water table during backfill operations which resulted in the respective decrease of backfill soil above the water table under Bid Item 11.

W. Decrease in quantity of Bid Item No. 11 - Backfill above the Water Table. Decrease in quantity of Backfill above the Water Table was due the increase of backfill soil required below the water table under Bid Item 10 which proportionally reduced the amount of backfill required above the water table within the excavation.

X. Replace fence section in area of former Building 24. Continuous fencing is required on site to maintain security. Replacement of the fence in the area of the building was not included in the contract.

Y. Increase in quantity of Bid Item No. 12 - Final Grading , Topsoil & Site Restoration. Increase in quantity of Final Grading , Topsoil & Site Restoration was due to the inaccurate size of the site specified in the contract document as 1 acre when the actual size was measured as 1.5 acres.

APPENDIX G

CHANGE ORDER #1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
CONSTRUCTION SERVICES BUREAU
CHANGE ORDER

Date of Issue: December 15, 1999

Change Order Number:	01(final)
Change Order Amount:	$ 89,386.02
Contract Number:	D003962
Project Name:	Remediation of the former Van der Horst Site Plant #1
NYSDEC Site Number:	9-05-008
Contractor:	Ciminelli Services Corporation 170 Cooper Avenue, Suite 112 Tonawanda, New York 14150-6680
Design Engineer:	IT Corporation 2200 Cottontail Lane Somerset, New Jersey 08873-1248
Oversight Engineer:	NYSDEC - Region 9 Office 270 Michigan Avenue Buffalo, New York 14302-2999

I. CHANGE ORDER ITEM

This change in the original Contract is for:

A. DESCRIPTION OF CHANGE

Decrease in cost of Bid Item No. 2 - Site Services

REASON FOR CHANGE

Although the quantity increased from 124 to 141 days the final cost figure, for this bid item, was prorated based on the actual quantity of all the subitems in this category (ie: site security, access roads, staging areas, etc.) that were not used for the entire duration of the contract period and therefore were not paid for.

COST

Decrease in cost of Bid Item No. 2 - Site Services from 124 days to 141 days. 141 days @ $1,600.00/day = $ 272,000.00 Adjusted for actual days and subitems used: $188,991.00. Original contract (124 days @ $1,600.00/day = $198,400.00) - $188,313.00 (adjusted cost) = $10,087.00 credit.

(See Attachment Item A.)

Subtotal Item A. ($ 10,087.00)

B. DESCRIPTION OF CHANGE

Decrease in cost of Bid Item No. 3 - Health and Safety adjusted for actual work performed during the contract period.

REASON FOR CHANGE

Although the quantity increased from 90 to 107 days, this item was prorated based on the actual quantities of all the subitems.

COST

Decrease in cost of Bid Item No. 3 adjusted for actual work performed during the contract period. from 90 days (contract) to 107 days (actual). Original contract (90 days @ $300.00/day = $27,000.00) - $26,870.00 (adjusted cost) = $130.00 credit.

(See Attachment Item B)

Subtotal Item B. ($ 130.00)

C. DESCRIPTION OF CHANGE

Decrease in quantity of Bid Item No. 5 - Excavation (0-18 ft.), Staging and Backfilling of Non-hazardous soil.

REASON FOR CHANGE

Decrease in quantity of Non-Hazardous Excavation was the result of the increase of soil that was determined to be hazardous and was excavated and disposed of under Bid item 6.

COST

Decrease in quantity of Bid Item No. 5 - Excavation (0-18 ft.), Staging and Backfilling of Non-hazardous soil from 3,500 cy (contract) to 3,103.41 cy (actual), (396.59 cy x $12.39/cy = $4,913.75)

(See Attachment Item C)

Subtotal Item C. ($ 4,913.75)

D. DESCRIPTION OF CHANGE

Increase in quantity of Bid Item No. 6 - Excavation Hazardous Soil (18-42 ft.).

REASON FOR CHANGE

Increase in quantity of Excavation of Hazardous Soil was the result of the increase of soil that was determined to be hazardous and was located within the 0 - 18 ft. zone. A resulting decrease in non-haz. soil was provided in Item C above.

COST

Increase in quantity of Bid Item No. 6 - Excavation Hazardous Soil (18-42 ft.) from 4,700 cy (contract) to 4,973.36 cy (actual), (273.36 cy x $24.00/cy = $6,560.64)

(See Attachment Item D)

Subtotal Item D. **$ 6,560.64**

E. DESCRIPTION OF CHANGE

Increase in quantity of Bid Item No. 6 - Off-site Transportation and Disposal of Hazardous Soil.

REASON FOR CHANGE

Increase in quantity of Excavation of Hazardous Soil was the result of the increase of soil that was determined to be hazardous and was located within the 0 - 18 ft. zone.

COST

Increase in quantity of Bid Item No. 7 - Off-site Transportation and Disposal of Hazardous Soil from 8,900 ton (contract) to 9,732.11 ton (actual), (832.11 ton x $85.25/ton = $70,937.38) This increase was less than the 15% of the original estimated quantity (1335 tons) and, therefore, the unit price was not subject to renegotiation.

(See Attachment Item E)

Subtotal Item E. **$ 70,937.38**

F. DESCRIPTION OF CHANGE

Abandonment of two former pumping test wells and the abandonment of one former monitoring well as per PCO#1.

REASON FOR CHANGE

Abandonment of the well are necessary because they will no longer be needed for the project and proper decommissioning of the wells are in accordance with Department policy.

COST

Abandonment of two former pumping test wells and the abandonment of one former monitoring well as per PCO#1 (lump sum) - $2,730.00.

(See Attachment Item F)

Subtotal Item F. **$ 2,730.00**

G. DESCRIPTION OF CHANGE

Installation of 7 additional Norway spruce trees along the Southwest property boundary as per PCO#1.

REASON FOR CHANGE

Demolition of Building #24, at the contractors option, required that trees be planted in the area of the building to be consistent with the tree planting schedule already in the contract.

COST

Installation of 7 additional Norway spruce trees along the Southwest property boundary as per

PCO#1. (Lump sum) 7 trees @ $200.00 per tree =$1400.00 + $70.00 (5% markup) = $1470.00
(See Attachment Item G)

Subtotal Item G. **$ 1,470.00**

H. DESCRIPTION OF CHANGE

Purchase of a Sony Mavica MVC-FD71 digital Camera per PCO#1.

REASON FOR CHANGE

Due to a State Budget not being passed in a timely manner the Department was unable to purchase items, such as this, for use on this project. Therefore, this item was purchased through the contractor

COST

Payment for Digital Camera as per PCO#1 (Lump Sum). 1 camera/shipping @$692.22 + 10% Contractor markup @ $64.29 = $761.44
(See Attachment Item H.)

Subtotal Item H. **$ 761.44**

I. DESCRIPTION OF CHANGE

Provide for air monitoring for Volatile Organic Compounds (VOCs) during excavation activities as per PCO#2.

REASON FOR CHANGE

The contractor was directed by the Department that during excavation activities below the ground water table, PID monitoring would be conducted along the site boundaries as part of the community monitoring plan due a petroleum odor has been noted within the excavation area.

COST

Payment for conducting PID readings and tabulating the data for submittal to the Department as per PCO#2. (time and materials).
(See Attachment Item I.)

Subtotal Item I. **$1,571.31**

J. DESCRIPTION OF CHANGE

Establishment of a Residential Relocation Program.

REASON FOR CHANGE

During excavation of hazardous soil below the groundwater table a previously undetected layer of suspected diesel oil material was encountered. During excavation activities this material produced a significant odor that could not be adequately controlled using standard engineering control methods. Based on determination made by the NYSDOH, a program to relocate effected residents to a local motel during working hours was implemented as per PCO#3.

COST

Implementation of Resident relocation as per PCO#3 (Lump Sum) - Lodging - $13,729.72 + Meals - $195.40 + Labor - $120.32 = $14,045.44
(See Attachment Item J.)

Subtotal Item J. **$ 14,045.44**

K. DESCRIPTION OF CHANGE

Conduct the following activities in response to a previously unknown oily material within the excavation area as per PCO#4
A. Immediate clean-up and containment of the oil slick in the excavation.
B. Sampling and analysis of the oil slick.
C. Conduct short duration real time and documentation air monitoring during three consecutive nights.

REASON FOR CHANGE

Immediate clean up of the oil was necessary to reduce odor from the site, Additional air monitoring was performed to help alleviate residential concerns with dust and petroleum odors at the site as requested by the NYSDOH, and, the sampling and analysis of the oil slick was necessary to identify the petroleum products involved to determine if they would require special health and safety or remedial provisions to be taken.

COST

Payment for:
A. Immediate clean-up and containment of the oil slick in the excavation (T/M) - **$20,006.11**
B. Sampling and analysis of the oil slick. (T/M) - **$485.11**
C. Conduct short duration real time and documentation air monitoring during three consecutive nights. (T/M) - **$960.07**
Total Items A. B. & C. = **$ 21,451.29**
(See Attachment Item K.)

Subtotal Item K. **$ 21,451.29**

L. DESCRIPTION OF CHANGE

Change of particulate air monitoring equipment as per PCO#5.

REASON FOR CHANGE

Increase public concerns on dust generation and controls requires upgraded monitoring on the project. The upgraded equipment provided greater accuracy and reliability and frequency of measurements, which DOH considered critical based on the short distance to the residential community.

COST

Change of particulate air monitoring equipment as per PCO#5 (Lump Sum) - 3 weeks @

$240.00/week ($800.00) + 1 day @ 80.00/day ($80.00) = $800.00
(See Attachment Item L.)

Subtotal Item L. **$ 800.00**

M. DESCRIPTION OF CHANGE

Analysis of Documentation air monitoring samples as per PCO#6.

REASON FOR CHANGE

Analysis required by New York State Department of Health.

COST

Analysis of Documentation air monitoring samples as per PCO#6. (Lump Sum) - 99 samples @ $30.00/sample + markup ($3,118.50) + $106.95 (Labor Costs) = $3,225.45
(See Attachment Item H.)

Subtotal Item M. **$ 3,225.45**

N. DESCRIPTION OF CHANGE

Repair of Department owned Kodak digital camera as per PCO#7.

REASON FOR CHANGE

During routine inspection activities by Department staff the camera was damaged and required repair. Due to a State Budget not being passed in a timely manner the Department was unable to repair the camera for use on the project. Therefore, repair of this item was pursued through the contractor.

COST

Repair of Department owned Kodak digital camera as per Department request (Lump Sum). Repair of camera per invoice#18797 - $225.00 + (10% markup) $22.50 + $23.25 (labor) + $2.33 (15% mark-up) = $272.98
(See Attachment Item N.)

Subtotal Item N. **$ 272.98**

O. DESCRIPTION OF CHANGE

Contractor payment of Department incurred overtime.

REASON FOR CHANGE

Scheduling of contractor work hours required that Department personnel incur additional time at the site beyond the normal work period of the contract resulting in overtime payment to the Department.

COST

Contractor payment of Department incurred overtime.

(See Attachment Item O)

Subtotal Item O. **($ 3,529.32)**

P. DESCRIPTION OF CHANGE

Payment of Department telephone bill exceeding the $150.00 maximum amount in Section 01590, Item. 3.2. of the Contract.

REASON FOR CHANGE

Department long distance telephone bills for the months of June and September 1999 exceeded the cap of $150 established in the contract.

COST

Payment of Department telephone bill exceeding the $150.00 maximum amount in Section 01590, Item. 3.2. of the Contract as per PCO#8.

(See Attachment Item P.)

Subtotal Item P. **$ 46.13**

Q. DESCRIPTION OF CHANGE

Sample and dispose of three (3) unknown drums.

REASON FOR CHANGE

Sampling of the three unknown drums was required by the disposal facility prior to disposal. These drums contains petroleum contaminated soil and had not been identified in the contract documents.

COST

Sample three (3) unknown drums for disposal (Lump Sum) as per PCO#8. Sampling Costs per invoice - $394.41.

(See Attachment Item Q.)

Subtotal Item Q. **$ 394.41**

R. DESCRIPTION OF CHANGE

Positioning of influent pump during groundwater treatment phase of work.

REASON FOR CHANGE

The Department required that the influent pump to the groundwater treatment unit be positioned in the center of the excavation to provide an even distribution of water withdrawal from the excavation area.

COST

Positioning of influent pump during groundwater treatment phase of work (T/M) as per PCO#8. Documented costs per invoice - $439.32.
(See Attachment Item R.)

Subtotal Item R. **$ 439.32**

S. DESCRIPTION OF CHANGE

Repair of residential fence.

REASON FOR CHANGE

The Department agreed to repair a fence that was improperly installed during a previous phase of work on the site.

COST

Repair of residential fence as per (T/M) as per PCO#8. Documented costs per invoice - $223.71.
(See Attachment Item S.)

Subtotal Item S. **$ 223.71**

T. DESCRIPTION OF CHANGE

Increase in the duration of the contract time per Section VI, Article 6 for (1) substantial completion and for (2) final payment.

REASON FOR CHANGE

Duration of the contract was extended to address several items of additional work items contained in PCOs #s 1 to 8 required by the Department. It also addressed unknown conditions that were encountered by the contractor during contract work such as dealing with a layer of poly barrier at the 18 ft. bgs level and broken concrete that was also in the excavation area that were not identified in the contract documents.

COST

17 calendar day Time Extension - Additional costs associated with this item to be attributed to Bid Items 2 & 3 above.
(See Attachment Item T)

Subtotal Item T. **$0.00**

U. DESCRIPTION OF CHANGE

A no cost to the Department time extension, which includes a credit based on the additional construction management and inspection costs incurred by the Department during the extension period.

REASON FOR CHANGE

Contractor failed to complete the project with in the specified contract time (124) days specified in Section 6.1 of the contract. Department and Contractor negotiated reimbursement of Department costs incurred during time period in lieu of liquidated damages.

COST

37 calendar day Time Extension - Additional costs to be based on actual cost incurred by Department during time period.
(See Attachment Item U)

Subtotal Item U. **($ 19,917.76)**

V. DESCRIPTION OF CHANGE

Increase in quantity of Bid Item No. 10 - Backfill below the Water Table.

REASON FOR CHANGE

Increase in quantity of Backfill below the Water Table was due the unexpected rise of the water table during backfill operations which resulted in the respective decrease of backfill soil above the water table under Bid Item 11.

COST

Increase in quantity of Bid Item No. 10 - Backfill below the Water Table from 1,400 cy (contract) to 3,159.69 cy (actual), (1,759.69 cy x $11.90/cy = $20,940.31)
(See Attachment Item V)

Subtotal Item V. **$ 20,940.31**

W. DESCRIPTION OF CHANGE

Decrease in quantity of Bid Item No. 11 - Backfill above the Water Table.

REASON FOR CHANGE

Decrease in quantity of Backfill above the Water Table was due the increase of backfill soil required below the water table under Bid Item 10 which proportionally reduced the amount of backfill required above the water table within the excavation.

COST

Decrease in quantity of Bid Item No. 11 - Backfill above the Water Table from 3,300 cy (contract) to 1,813.57 cy (actual), (1,486.43 cy x $14.83/cy = $22,043.76)
(See Attachment Item W.)

Subtotal Item W. **($22,043.76)**

X. DESCRIPTION OF CHANGE

Replace fence section in area of former Building 24.

REASON FOR CHANGE

Continuous fencing is required on site to maintain security. Replacement of the fence in the area of the building was not included in the contract.

COST

Replace fence section in area of former Building 24. (T/M) as per PCO#8. Documented costs per invoice - $436.00 + $21.80 (markup) = $457.80.

(See Attachment Item 27)

Subtotal Item X. **$ 457.80**

Y. DESCRIPTION OF CHANGE

Increase in quantity of Bid Item No. 12 - Final Grading , Topsoil & Site Restoration

REASON FOR CHANGE

Increase in quantity of Final Grading , Topsoil & Site Restoration was due to the inaccurate size of the site specified in the contract document as 1 acre when the actual size was measured as 1.5 acres.

COST

Increase in quantity of Bid Item No. 12 - Final Grading , Topsoil & Site Restoration - 1.46 acres (measured size adjusted to subtract area of building 24) - 1.0 acres (original contract quantity) @ $8,000.00/acre = $ 3,680.00

(See Attachment Item Y)

Subtotal Item Y. **$ 3,680.00**

II. CHANGE ORDER No.1 SUMMARY

A. Decrease in cost of Bid Item No. 2 - Site Services from 124 days to 141 days. 141 days @ $1,600.00/day = $ 272,000.00 Adjusted for actual days and subitems used: $188,991.00. Original contract (124 days @ $1,600.00/day = $198,400.00) - $188,313.00 (adjusted cost) = $10,087.00 credit.

Subtotal Item A. **($ 10,087.00)**

B. Decrease in cost of Bid Item No. 3 adjusted for actual work performed during the contract period. from 90 days (contract) to 107 days (actual). Original contract (90 days @ $300.00/day = $27,000.00) - $26,870.00 (adjusted cost) = $130.00 credit.

(See Attachment Item B)

Subtotal Item B. **($ 130.00)**

C. Decrease in quantity of Bid Item No. 5 - Excavation (0-18 ft.), Staging and Backfilling of Non-hazardous soil from 3,500 cy (contract) to 3,103.41 cy (actual), (396.59 cy x $12.39/cy = $4,913.75)

Subtotal Item C. **($ 4,913.75)**

D. Increase in quantity of Bid Item No. 6 - Excavation Hazardous Soil (18-42 ft.) from 4,700 cy (contract) to 4,973.36 cy (actual), (273.36 cy x $24.00/cy = $6,560.64)

Subtotal Item D. **$ 6,560.64**

E. Increase in quantity of Bid Item No. 7 - Off-site Transportation and Disposal of Hazardous Soil from 8,900 ton (contract) to 9,732.11 ton (actual), (832.11 ton x $85.25/ton = $70,937.38)

Subtotal Item E. **$ 70,937.38**

F. Abandonment of two former pumping test wells and the abandonment of one former monitoring well as per PCO#1 (lump sum) - $2,730.00.

Subtotal Item F. **$ 2,730.00**

G. Installation of 7 additional Norway spruce trees along the Southwest property boundary as per PCO#1. (Lump sum) 7 trees @ $200.00 per tree =$1400.00 + $70.00 (5% markup) = $1470.00

Subtotal Item G. **$ 1,470.00**

H. Payment for Digital Camera as per PCO#1 (Lump Sum). 1 camera/shipping @$692.22 + 10% Contractor markup @ $64.29 = $761.44

Subtotal Item H. **$ 761.44**

I. Payment for conducting PID readings and tabulating the data for submittal to the Department as per PCO#2. (time and materials).

Subtotal Item I. **$1,571.31**

J. Implementation of Resident relocation as per PCO#3 (Lump Sum) - Lodging - $13,729.72 + Meals - $195.40 + Labor - $120.32 = $14,045.44

Subtotal Item J. **$ 14,045.44**

K. Payment for:
A. Immediate clean-up and containment of the oil slick in the excavation (T/M) - **$20,006.11**
B. Sampling and analysis of the oil slick. (T/M) - **$485.11**
C. Conduct short duration real time and documentation air monitoring during three consecutive nights. (T/M) - **$960.07**
Total Items A. B. & C. = **$ 21,451.29**

Subtotal Item K. **$ 21,451.29**

L. Change of particulate air monitoring equipment as per PCO#5 (Lump Sum) - 3 weeks @ $240.00/week ($800.00) + 1 day @ 80.00/day ($80.00) = $800.00

Subtotal Item L. **$ 800.00**

M. Analysis of Documentation air monitoring samples as per PCO#6. (Lump Sum) - 99 samples @ $30.00/sample + markup ($3,118.50) + $106.95 (Labor Costs) = $3,225.45

Subtotal Item H. **$ 3,225.45**

N. Repair of Department owned Kodak digital camera as per Department request (Lump Sum). Repair of camera per invoice#18797 - $225.00 + (10% markup) $22.50 + $23.25 (labor) + $2.33 (15% mark-up) = $272.98

Subtotal Item N. **$ 272.98**

O. Contractor payment of Department incurred overtime.

Subtotal Item O. **($ 3,529.32)**

P. Payment of Department telephone bill exceeding the $150.00 maximum amount in Section 01590, Item. 3.2. of the Contract as per PCO#8.

Subtotal Item P. **$ 46.13**

Q. Sample three (3) unknown drums for disposal (Lump Sum) as per PCO#8. Sampling Costs per invoice - $394.41.

Subtotal Item Q. **$ 394.41**

R. Positioning of influent pump during groundwater treatment phase of work (T/M) as per PCO#8. Documented costs per invoice - $439.32.

Subtotal Item R. **$ 439.32**

S. Repair of residential fence as per (T/M) as per PCO#8. Documented costs per invoice - $223.71.

Subtotal Item S. **$ 223.71**

T. 17 calendar day Time Extension - Additional costs associated with this item to be attributed to Bid Items 2 & 3 above.

Subtotal Item T. **$0.00**

U. 37 calendar day Time Extension - Additional costs to be based on actual cost incurred by Department during time period.

Subtotal Item U. **($ 19,917.76)**

V. Increase in quantity of Bid Item No. 10 - Backfill below the Water Table from 1,400 cy (contract) to 3,159.69 cy (actual), (1,759.69 cy x $11.90/cy = $20,940.31)

Subtotal Item V. **$ 20,940.31**

W. Decrease in quantity of Bid Item No. 11 - Backfill above the Water Table from 3,300 cy (contract) to 1,813.57 cy (actual), (1,486.43 cy x $14.83/cy = $22,043.76)

Subtotal Item W. **($22,043.76)**

X. Replace fence section in area of former Building 24. (T/M) as per PCO#8. Documented costs per invoice - $436.00 + $21.80 (markup) = $457.80.

Subtotal Item X. **$ 457.80**

Y. Increase in quantity of Bid Item No. 12 - Final Grading , Topsoil & Site Restoration - 1.46 acres (measured size adjusted to subtract area of building 24) - 1.0 acres (original contract quantity) @ $8,000.00/acre = $ 3,680.00

(See Attachment Item Y)

Subtotal Item Y. **$ 3,680.00**

III. CHANGE IN CONTRACT PRICE:

Original Contract Price:	**$ 2,017,739.00**
Increase Due to Change Order#1:	**$ 89,386.02**
Revised Contract Price:	**$ 2,107,125.02**

IV. CHANGE IN CONTRACT TIME:

	SUBSTANTIAL COMPLETION		FINAL COMPLETION	
	Calendar Days	Date	Calendar Days	Date
Notice to Proceed		**April 12, 1999**		
Original Contract Time	124	August 14, 1999	184	October 14, 1999
Additional Time for Charge Order #1	54	October 7, 1999	54	December 7, 1999
New Contract Time	**178**	**October 7, 1999**	**238**	**December 7, 1999**

It is understood and agreed that, unless expressly so stated above, the work herein authorized will not extend the time for completion of the Contract. It is understood and agreed that this change order represents full and complete compensation for all work described herein.

This work is to be performed in accordance with the terms of the Contract and original plans and specifications, except as herein modified. It is understood and agreed that this change order represents full and complete compensation for all work described herein. It is also understood and agreed that this change order shall be deemed executory only to the extent of moneys available and no liability shall be incurred by the State beyond the moneys available for the purpose.