PM's copy

December 9, 2002

Maribeth McCormick
ORANGE & ROCKLAND
390 W. Route 59
Spring Valley, NY 10977

Reference: Orange & Rockland-Remediation of Former MGP Site in Haverstraw, NY
Interim Remedial Measure Work Plan – Transmittal No. 1.D - Final
93B Maple Avenue Former Manufactured Gas Plant Site
Purchase Order# LS01279-4-16

Dear Ms. McCormick:

Integrated Technical Services, Inc. (ITS) is pleased to provide the attached Work Plan for the above referenced project as requested. Copies of the plan have been submitted to the following individuals:

Maribeth McCormick Manager, Env. Services	Orange & Rockland Utilities, Inc. 390 W. Rt. 59 Spring Valley, NY 10977
Jim Carbone Construction Administrator	Orange & Rockland Utilities, Inc. 16 Pike Street Port Jervis, NY 12771
Dave Terry Project Manager	GEI Consultants, Inc. 188 Norwich Avenue Colchester, CT 06415
Tom Kahl Senior Engineer	GEI Consultants, Inc. 1021 Main Street Winchester, MA 01890

Dave Crosby Environmental Engineer	Division of Environmental Remediation New York State Department of Environmental Conservation, 12th floor 625 Broadway Albany, NY 12233-7013
Stephen Sellinger Construction Inspector	Division of Environmental Remediation New York State Department of Environmental Conservation 200 White Plains, 5th Floor Tarrytown, NY 10591-5805
Stephanie Selmer	Bureau of Environmental Exposure Investigation New York State Dept. of Health 547 River Street Troy, New York 12180

If you should have any questions, please feel free to contact me at 609-820-1047 at your convenience.

Sincerely,
INTEGRATED TECHNICAL SERVICES, INC.

Mike Pirner
Project Manager

C: Jim Carbone – O&R
Dave Terry – GEI
Tom Kahl – GEI
Dave Crosby – NYSDEC
Stephen Sellinger – NYSDEC
Stephanie Selmer - NYSDEC

ORANGE & ROCKLAND
REMEDIATION OF FORMER MGP SITE
HAVERSTRAW, NEW YORK

PROJECT PLAN

Submitted By:

INTEGRATED TECHNICAL SERVICES, INC.

October 25, 2002
Transmittal No. 1.D.
Final - December 9, 2002

ORANGE & ROCKLAND
REMEDIATION OF FORMER MGP SITE
HAVERSTRAW, NEW YORK

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INTEGRATED TECHNICAL SERVICES, INC.
WORK PLAN

1.0 INTRODUCTION

This work plan is being submitted by Integrated Technical Services, Inc. (ITS) for field services at the utility site at 93B Maple Avenue, former Manufactured Gas Plant site in Haverstraw, New York. This work plan has been developed based upon the contract specifications and contract drawings dated 10-18-02.

The work to be performed during this remediation project includes, but is not limited to, the following general items of work:

1. Erosion and sediment controls.
2. Clearing and grubbing.
3. Water management.
4. Support structure installation.
5. Contaminated soil excavation.
6. Contaminated soil offsite disposal.
7. Clean soil backfilling.
8. Site restoration and establishment of vegetation.
9. Site cleanup and demobilization.

The known contaminates to be encountered during this project include primarily VOC's and PAH's associated with Former Manufactured Gas Plant Activities at this site. These contaminates are located throughout the various work areas of the properties and will be excavated for offsite disposal. All work will be performed in Level – D personnel protection equipment, however, upgrade equipment to Level – C will be available on-site should the need arise.

2.0 EXECUTION AND ADMINISTRATION OF CONTRACT

2.1 PROJECT MANAGEMENT

ITS will designate three key individuals responsible for certain tasks related to this project, a Project Manager, Site Supervisor and Site Health and Safety Officer. ITS personnel will correspond directly to O&R's designated representatives for all project related issues.

PROJECT MANAGER

Michael Pirner will serve as ITS's Project Manager (PM). He will be the-point of contact for O&R's contracting officer, project manager and other O&R designated representatives. The PM will be responsible for all aspects of the overall project including: initial setup and coordination of labor and materials; QA/QC of the project in accordance with the contract specifications; coordinating, preparing and submitting technical and documentation submittals and status reports; prepare and commit ITS to cost proposals, field change orders and/or contract modification; planning and coordination with the Site Supervisor; attendance at regular progress meetings; and

submitting schedule of values and applications for payment. The PM will direct the activities of the Site Health and Safety Manager and the Site Supervisor who will report directly to the PM while on-site work is performed. The PM will report directly to the Vice President in Charge of Operations for ITS and will communicate daily to ensure project activities are progressing smoothly.

SITE SUPERVISOR

Mark Talarico will serve as ITS's Site Supervisor (SS). He will be the on-site contact person for O&R's designated site personnel and will report directly to the ITS project manager on all project related issues. The SS will be responsible for the daily activities performed on the project site. He will have the authority to direct and be responsibility for: all site personnel assignments; equipment utilization and maintenance; material management; subcontractor utilization and coordination with ITS' Project Manager and O&R's site representatives. The Site Supervisor will work with the Site Health and Safety Officer to ensure conformance with the Site Specific Health and Safety Plan (HASP) and to maintain the safety of site personnel, the environment and the public through all phases of construction.

SITE HEALTH AND SAFETY OFFICER

Jose Silva will serve as ITS's Site Health and Safety Officer (SHSO). He will be responsible for assisting ITS' Corporate Health and Safety Manager in preparing the Site Specific Health and Safety Plan for this project and ensuring the successful implementation of the HASP throughout all phases of construction. The SHSO will be responsible for daily safety (tailgate) meetings, PPE review and selection, air monitoring and data collection, and implementation of safe work practices planned for each phase of construction. He will have the authority to shut down the project in the event unsafe work conditions or hazards are discovered. ITS' Corporate Health and Safety Manager will perform periodic inspection of the site and will be available for phone consultation to assist the SHSO in all related health and safety issues. The Health and Safety Manager will ensure and document all medical monitoring and OSHA compliant training of personnel on-site is current and will provide copies of same to O&R.

Resumes for the above listed personnel are attached.

2.2 DOCUMENTATION AND DATA CONTROL

ITS will generate and submit for approval all necessary pre-mobilization documentation. This documentation includes, but is not limited to, a Site Specific Health and Safety Plan (HASP), Site Work Plan, Quality Control Plan, Schedule of Remediation, material submittals and personnel training documentation.

ITS will prepare and submit daily reports and will maintain project logbooks for recording daily activities and site conditions including but not limited to the following:

1. Daily employee and subcontractor attendance.
2. Daily site conditions encountered.
3. Daily weather events.
4. Equipment and material utilization.
5. Work performed and completed.
6. Areas and approximate volumes of soil excavated and/or backfill placed into the various work areas.
7. Incident or circumstances that affected daily activities.
8. Health and safety issues.

9. Meetings and/or inspections.

Within 4 weeks of the completion of site work for this project, ITS will submit copies of all project related closeout documentation. This documentation will include, but is not limited to:

1. Project logbooks.
2. All heath and safety related documentation.
3. All waste disposal documentation.
4. Survey data and drawings.

2.3 HEALTH & SAFETY

ITS has prepared a Site Specific Health and Safety Plan (HASP). The HASP will be prepared in accordance with the latest local, state and federal regulations. Once the site-specific HASP has been finalized it will be distributed to project personnel and a control copy maintained on-site to ensure consistent compliance with all health and safety requirements.

ITS Health and Safety Manager will be responsible for preparation of the HASP and will also be required to ensure all personnel training and medical monitoring is current and complete. The Health and Safety Manager will conduct initial project orientation training and will be available to the Site Health and Safety Officer to discuss health and safety related issues and make site inspections throughout the duration of the project.

ITS' Site Health and Safety Officer (SHSO) will be responsible for enforcing and implementing the HASP during all phases of construction to ensure the safe and satisfactory completion of this project. The SHSO will conduct daily tailgate meetings, select PPE, review and determine if PPE upgrades or downgrades are required, document all health and safety issues and will work daily with the Site Supervisor to ensure the safe and satisfactory completion of the project.

ITS' Site Health and Safety Officer and Health and Safety Manager will be responsible for maintaining all health and safety related documentation throughout the course of this project and for providing copies of all documentation to O&R in a timely fashion. This documentation will include but is not limited to:

1. All medical monitoring of site personnel.
2. OSHA compliant personnel training.
3. Safety meetings.
4. Daily PPE selection.
5. PPE upgrades or downgrades.
6. Evaluation and determination of any daily safety issues.
7. Changes in site conditions that affect health and safety or the scope of work.

2.4 QUALITY ASSURANCE/QUALITY CONTROL

ITS' management team will have the responsibility for quality assurance and quality control throughout the course of this project. Key personnel responsibilities for Quality Assurance/Quality Control are outlined below.

PROJECT MANAGER:

The Project Manager (PM) has the overall responsibility for the safe execution of the project and the strict adherence to the remediation goals and project specifications. The PM will be responsible for implementation of the work plan and adherence of the project schedule. He will

coordinate daily site activities with the Site Supervisor to ensure the safe and successful completion of the project. The PM will perform inspections during the course of the project to evaluate work methods and compliance with the contract documents. He will perform daily reviews of work performed with the Site Supervisor to discuss and correct any deficiencies and plan upcoming tasks. Prior to beginning new tasks, a review of the task will be conducted for potential hazards such as chemical/physical or biological concerns. Other responsibilities will include:

1. Contract adherence.
2. Subcontractor coordination.
3. Cost management.
4. QA/QC control.
5. Incident investigation and reporting.
6. Communication with O&R Management.
7. Preparation, review and submission of progress reports and requests for payment.
8. Coordination and attendance of all site inspections.
9. Maintenance and submission of all documentation.

SITE SUPERVISOR:

The Site Supervisor (SS) is responsible for the safe and successful implementation of daily work tasks. He will work with site personnel in all phases of remediation. The SS will ensure that each task is performed in compliance with the Work Plan and the Site HASP. The SS will delegate work to be performed to the necessary personnel and has the overall control to utilize ITS resources on-site to achieve daily production goals. He will communicate directly to the site PM regarding any deficiencies in the tasks and will enforce corrective measures as directed. The SS shall work with any on-site subcontractors performing services to ensure compliance to the site HASP and schedule. Other responsibilities will include the following:

1. Maintaining all site controls.
2. Ensure that daily equipment inspections are performed and documented.
3. Daily inspections and review of employee performance and safety practices.
4. Evaluate and ensure resources are available and maintained in good condition.
5. Ensure the schedule is maintained.
6. Review and implement QA/QC procedures.
7. Evaluate and ensure the constant and smooth flow of material through each phase of remediation.

SITE HEALTH & SAFETY OFFICER:

ITS' Site Health and Safety Officer will be responsible for the safety and protection of all site personnel, the public and the environment while adhering to the remediation goals, project specifications and approved Health and Safety Plan (HASP). He will coordinate with Site Supervisor and Project Manager and operating personnel to ensure the safe and successful completion of the project, selection of PPE and the potential upgrade or downgrade of PPE during the course of daily activities. The SHSO will perform and document daily tailgate meetings and conduct frequent inspections during the course of the remedial action to ensure worker and public safety. Any deficiencies will be corrected immediately and documented in the daily activity report. Other responsibilities will include:

1. Ensure compliance of all personnel and subcontractors with the HASP.
2. Investigation, review and reporting of all safety incidents.

3. Daily communication and reporting with the Site Supervisor, Project Manager and Health and Safety Manager

HEALTH AND SAFETY MANAGER:

The Health and Safety Manager is responsible for the regulatory compliance of the HASP for the project. He may amend and modify the HASP according to changes encountered at the project site. The Health and Safety Manager will answer directly to the Vice President of Operations for ITS and will be available by phone to discuss site-specific conditions with the Site Health and Safety Officer as well as perform periodic site inspections.

QUALITY CONTROL - DAILY REPORT ACTIVITIES

At the end of each working day, ITS' Site Supervisor and Site Health and Safety Officer shall complete a daily report briefly outlining the day's activities, personnel onsite, equipment utilized, site conditions and incidents or decisions affecting Health and Safety or the progress of work. In addition, a project logbook will detail the day's activities and tasks. Each morning a field safety meeting (tailgate meeting) will be held with all workers to review the upcoming day's activities and hazards and to discuss any incidents or hazards identified on previous workdays that may still be present. Daily safety meetings and related decisions will be documented on daily reports.

Prior to commencing with daily activities, ITS' Site Supervisor shall complete a work order form. This work order will provide a brief but concise description of the days anticipated tasks and goals. This form will be given to O&R's onsite representative. ITS recommends that at the end of each working day, the Site Supervisor reviews with O&R's onsite representative the tasks completed that day as well as the following day objectives. All daily activities and events will be documented in writing and presented to O&R's onsite representative.

3.0 MOBILIZATION AND SITE PREPARATION

3.1 SUPPORT FACILITIES

Mobilization will commence with the set-up of all field support facilities, utilities, initial equipment mobilization and material staging. Set-up and staging areas will be evaluated with O&R's on site representative and approved prior to mobilization activities beginning.

The following is a list of temporary facilities that may be mobilized during this phase:

1. Storage box.
2. Sanitary facilities.
3. Temporary utility services.
4. Spill response materials.
5. First Aid station materials.
6. Office materials/supplies.
7. Misc. support materials.

3.2 WORK ZONE DELINEATION

In conjunction with ITS' Site Supervisor and GEI's On-Site Representative, initial work zones such as contamination reduction zone, clean zone and exclusion zones shall be delineated at the site. The

contamination reduction and exclusion zones will be continually re-assessed with regard to location and levels of protection based upon specific tasks completed and being performed by the field crews.

ITS' Site Supervisor shall establish decontamination zones, first aid station and fire prevention stations. Included with the first aid and fire prevention station will be a portable eyewash emergency station, 30-man first-aid kit, fire blanket and Twenty (20) pound ABC fire extinguishers.

3.3 PERSONNEL DECONTAMINATION

A personnel decontamination station will consist of the following equipment and materials:

1. Boot wash (clean and rinse)
2. PPE debris bin
3. PPE re-use bin
4. Hand brushes
5. First-aid & fire prevention materials
6. Air horn

The decontamination station will be setup along the edge of the equipment decontamination pad on 10-mil poly sheeting and geotextile fabric to contain any spills if they should occur. The poly and fabric can be picked up at the end of each day or replaced when needed, and along with the other decontamination equipment can be easily picked up and relocated by hand in only a few minutes, making relocation when needed a simple process.

3.4 EQUIPMENT DECONTAMINATION

An equipment decontamination station will be setup where indicated on the contract documents to prevent offsite migration of exclusion zone soil by equipment. If a piece of equipment enters an exclusion zone it will not be permitted to leave without first being decontaminated. ITS will construct a decontamination station near the edge of the excavation limits.

ITS will set-up a decontamination station located between Property 91 and 93. This station will be incorporate on the existing asphalt pavement with a 40-mil liner, non-woven fabric, and 1-1/2" crushed stone. Curbs will be established on the perimeter boundary with 6"x6" timbers and with asphalt overlying the two open ends. Srayshields will be installed on each side. A schematic of the decon pad is attached. An access road will be constructed of 2-1/2" clean stone. The access road will extend from the point of the excavation in the enclosure where loading of the trucks will occur to the edge of the decon pad. This stone road will serve as a tire scrub to remove any excessive soil. A section of geotextile will be placed over the decon pad to prevent mud from being tracked off site. The fabric will be maintained and replaced on an as-needed basis. This will prevent dry trucks leaving the enclosure from potentially crossing a wet and muddied decon pad.

When equipment enters the decontamination area it will first be manually cleaned of loose soil with scrappers and brushes. In the event that the equipment needs additional decontamination a pressure washer will be used to wash residual materials from the surfaces of the equipment. A final rinse with the pressure washer and clean water will complete the process. The equipment will be visually inspected to determine the effectiveness of the cleaning process. If clean, it will then proceed out of the decontamination pad on to the next task. If not clean, the above process will be repeated.

Once the work is complete and the decon station is no longer needed, ITS will remove the equipment decon station by first pumping off all fluids and manually removing all sediment that has accumulated. The fabric and liner will be folded up and disposed of along with other contaminated material and all wood timbers salvaged and removed from the site.

Decon stations will be continually maintained by pumping off decon water into temporary storage vessels for pretreatment and discharge into the on-site water treatment plant and by inspecting and cleaning of the station to make repairs and remove excess sediment buildup if this should occur. The solid waste that is generated from the decon process will be collected with brooms and shovel and placed in a soil stockpile in the enclosure destined for disposal.

3.5 UTILITY LOCATION

Once initial mobilization and preparations have been completed and before any intrusive excavation work begins, ITS will notify the utility markout service and review any utilities identified by O&R. A review of all identified utilities will be performed to identify those that require confirmatory excavation and location. ITS will employ mechanical and hand excavation methods to uncover and identify utilities that pose a concern to soil excavation operations.

3.6 AIR MONITORING

The primary concern for air contaminates would be from dust generated during site activities, volatile organic compounds and nuisance odors resulting from soil excavation activities. AirLogics will monitor air quality along the perimeter of the site utilizing a real-time air monitoring system. ITS' Site Health and Safety Officer will perform periodic air monitoring inside the exclusion zone (building enclosure) in accordance with the HASP to ensure worker safety. All site personnel will be instructed to immediately report any conditions that are developing dust or odor problems to the Site Supervisor so that the condition can be evaluated and corrective measures immediately implemented. In the event of a vapor excedence ITS will place foam over the contaminated soil inside of the enclosure and the work procedures will be evaluated in order to determine if changes need to be implemented. Foam will also be used to control vapors during hot spot excavations and drilling/installation of earth support system.

3.7 DUST AND ODOR CONTROL PROCEDURES

Due to the high ground water level, we anticipate the majority of the work to be completed in this project will be in moist soil areas of the site that may require dewatering. The possibility of dust in these areas is likely to be minimal. However, since this work will be taking place inside of a temporary enclosure some activities could still result in dust problems, ITS will make provisions to minimize this hazard. ITS shall utilize water to spray the surface of work area and dust generating materials to prevent a dust nuisance form occurring. The frequency and amount of water required to control the dust will be determined by the characteristics of the area, the ambient temperature and the visual evaluations made by ITS and O&R personnel. ITS will secure a hydrant permit from the Haverstraw DPW. The hydrant water will be utilized for dust control.

In areas of concentrated vehicular traffic such as the site entry/egress points, vehicle storage or staging areas, exposed soil and stone pavements shall be wetted in order to prevent dusting of the neighboring properties and public streets.

Maple Avenue, Tor Avenue, the Alley, and all other off-site areas shall be kept free of dirt, dust, contaminated materials, or other construction materials. If such materials are deposited, spilled, spread on a public street, it will be removed immediately.

ITS will mobilize and have ready prior to any dust generating activities, a portable pump, hoses, sprayer and poly tank to perform spraying of problem area.

As required in the contract documents, a foam application machine and supply of foaming agent will be mobilized and maintained at the site to facilitate odor control if and when necessary. The application of foam will be initiated when volatile organic compound levels exceed the levels provided in the contract

documents at the site perimeter. During these events work will be suspended and the foam application initiated. The foam will be applied to the exposed surface of the excavation until air monitoring results indicate work may resume. The foam will continue to be applied as the excavation proceeds until the problem area is remediated and air monitoring results are no longer exceeding the levels permitted at the site perimeter.

3.8 PHOTOGRAPHIC EVENTS

2. ITS shall provide color prints and the negative for every photograph taken during the project period. The photographs will be of suitable quality to accurately depict and record the important features of the site prior to the commencement of work, during work, and after the work has been completed.

2. Prints shall be 3" x 5" color prints of standard commercial quality and be of single weight glossy paper. Prints will illustrate the condition and location of work areas and the state of progress. ITS will consult with O&R during each session of photography for recommendations regarding desired views. At a minimum photography sessions will be as follows:

3. One session during mobilization and before any work has begun.
- Weekly sessions during work performance to document significant events and work accomplishment.
- During any major changes in work conditions.
- One session following substantial completion of work.

A pre-construction survey will be conducted at the following properties: 87, 93B, 93A, and 91 Maple Avenue, lot 75 on Maple Avenue and 6 Tor Avenue, and lots 62, 63, 64, and 65 located between West Street and the alley. The survey will consist of video and photographic documentation of existing conditions of each structure pertaining to structural and cosmetic damage. The survey will be conducted prior to the use of heavy equipment at the site. ITS will notify O&R of the date for the survey in order to gain access to the properties.

4.0 TECHNICAL APPROACH

4.1 EROSION AND SEDIMENTATION CONTROL

During mobilization operations for this project, erosion and sedimentation controls will begin to be installed. Silt fence will be installed inside the temporary security fencing along the north,west, and south perimeter. The silt fence will be outboard of the temporary enclosure and surrounding drainage swale. -A thorough evaluation of all areas of the property will be made by ITS' Site Supervisor and O&R's onsite representative. The purpose of this evaluation is to identify and determine the effectiveness of newly installed silt fence and to identify any areas requiring repair, modification, or additional installation of new silt fence or other methods of erosion control.

Silt fence will be installed utilizing a small walk-behind trencher and hand placement and backfilling. Following the proposed layout for the silt fence the trencher will excavate a shallow trench approximately 6-inches deep. The silt fence and posts will be set and hammered into the soil along one side of the trench. The bottom layer of silt fence will be laid into the bottom of the trench and backfilled with the removed trench soils (see Figure 1 for detail).

Additional methods of erosion and sedimentation control that may be utilized during the course of this project can include hay bales, soil berms, seeding & mulch. These will be discussed and evaluated on an as needed basis.

Erosion and sediment control will be an ongoing task during the execution of this contract. As work is completed or new tasks begin it may be necessary to evaluate and modify erosion controls utilized on this project. Storm water runoff will be constructed and maintained to ensure that the discharge of rainwater does not come into contact with impacted soils. Periodic inspections following changes in work and after precipitation events will be made by ITS and O&R's onsite representative.

A drainage swale and French drain will be placed around the sides of the temporary enclosure in order to collect stormwater from running off the temporary structure. The swale will be constructed at a distance of 1-2' from the sides of the temporary enclosure. The swale will be 12" wide at the base with a height of 12". The swale will be excavated with a backhoe, hand tamped, and filled with ¾" clean gravel. A 4-inch slotted, corrugated plastic pipe will be buried in the stone in order to collect and drain the stormwater. The plastic pipe will covered with a nylon sock in order to prevent sediment accumulation. The storm runoff will be directed to drain in the Village of Haverstraw storm drainage system located along the north perimeter/alley(see Figure 2 for detail). Based on the existing site drainage it is not anticipated that the side of enclosure adjacent to the driveway or the side of the enclosure adjacent to 93B Maple Avenue will need stormwater collection. The Haverstraw DPW has granted approval for the discharge of storm water runoff to be directed to storm sewer manholes. Storm water runoff from the enclosure will be directed to the storm sewer manhole located in the far north corner of the project site. Two rows of hay bales will be placed around the manhole and double staked into the ground. The NYSDEC on-site representative will be given the opportunity to evaluate the E&S controls and offer recommendations. Should the manhole be unsuitable then a lateral pipe would be installed into the existing 54"-storm main. Any areas identified as requiring repair or additional installation will be immediately addressed.

4.2 CONTRACTOR'S SURVEYOR

ITS will subcontract a New York licensed surveyor, Borbas Surveying and Mapping, Inc. to perform all the required surveying on this project. Licensing information for Borbas Surveying's will be submitted separately. -The surveyor's responsibilities will include, but are not limited to, layout of the various areas of work, locating the temporary security fence, establishing temporary excavation support perimeter, silt fence layout, excavation layout, grade stake installation to establish excavation depths and backfill elevations, confirmation of final grades and development of as-builts. Also, the surveyor will install and measure the deformation monitoring points. Copies of all documents prepared by the surveyor will be submitted to O&R in hard copy and electronically.

4.3 SITE CLEARING

ITS will remove large trees and brush within the project site. For clearing of these areas ITS will utilize a combination of heavy equipment and hand methods. Once an area to be cleared has been delineated, ITS personnel will begin to clear brush and trees from the area using primarily chain saws and brush knives. Using a grapple trackhoe, the 4 to 5 larger trees will be removed and cut for offsite disposal. Smaller trees and brush may be moved by hand. A tree chipper will be mobilized and positioned near the stockpile to chip the bulk of the removed vegetation. Any oversized tree trunks that cannot be chipped will be cut into sections and loaded onto transport trucks for offsite disposal. All chipped material will be loaded and disposed offsite at a pre-approved disposal facility. All disposal facilities will be pre-approved by the NYDEC and Orange and Rockland prior to off-site removal. The larger diameter trees will be removed utilizing a bucket truck working from the top of the tree down to the base. The trunk of the tree will be removed utilizing a tracked excavator.

4.4 SITE ACCESS

ITS shall access Phase I and II excavations via Maple Avenue using a paved area between building house #91 and house #93A. A second access will be located at the northwest corner of the work area at the back alley. The second access will be for an emergency/second exit and as an ingress for importing backfill.

4.5 FENCE REMOVAL

ITS will perform fence removal with our own personnel and will salvage any reusable fence materials for reinstallation following soil remediation tasks. All metal fencing not salvaged for reuse will be recycled at an approved recycling facility. Non-metal fencing will be loaded into containers for offsite disposal. ITS will mobilize rolloff containers to the site which will be used to contain and subsequently transport the fence materials to the recycling or disposal facilities. Fence fabric will be cut from the posts in manageable lengths and rolled up for easy handling before being stored for reuse or placed into the rolloff containers. The fence posts will be pulled with a post puller or backhoe and then placed into the rolloffs. If the existing fence posts are concreted in, we will cut the concrete end from the fence post using either a cut-off saw or torches. All the concrete fence bases will be disposed along with other contaminated materials.

Temporary fencing will be provided and installed by Construction Rentals, Inc. around the work zones to provide security and prevent unwanted access to the project site. ITS estimates 175 linear feet of temporary fence with gates.

The fence will be six-foot high chain link. The fence will enclose all work areas inside and outside of the temporary enclosure, wastewater-handling equipment, and storage areas. There will be three gates associated with the fence and they will be located at the Alley and one on each side of building# 91 on Maple Avenue.

All equipment will be left secured in the fence enclosure during non-working hours.

4.6 WATER MANAGEMENT

The estimated depth of groundwater is approximately 6-feet bgs in the excavation areas. The sump will be excavated to a depth of a minimum one-foot deeper than the targeted depth in order to keep the excavation dewatered. Water generated from the dewatering activities will be considered impacted and will be treated prior to discharge to the local POTW. ITS is in the process obtaining a discharge permit from the POTW. All discharges to the sanitary sewer will be in accordance with the Haverstraw Code of Regulations and, at a minimum, meet the following discharge limitations set forth in the Haverstraw Code of regulation. All decontamination liquids will also be treated prior to discharge. A copy of the permit will be submitted to the NYSDEC and O&R upon issuance from the POTW. In addition a copy of the analytical will be provided upon receipt from the laboratory.

ITS will mobilize one 3" trailer mounted pump with all associated suction and discharge piping to remove water accumulating in excavation areas. The pump will be capable of self-priming and dry running, which will allow continuous operation without fear of pump burnout or loss of prime. All suction hoses, fittings and discharge pipe will be connected and checked during operation to ensure leak proof operation.

For small volume pumping requirements ITS will have available onsite a 2" and/or 3" gasoline operated pump with all associated suction and discharge hoses. These pumps will be available for use in areas where limited volumes of surface water have collected or where water recharge volumes are very low. The pumps are easily handled by one or two people and can be carried into areas inaccessible to vehicles and consequently the trailer mounted pumps.

Primarily, ITS will provide and install pumping sumps (approximately six) to facilitate water removal while minimizing the volume of silt and sediment in the water being pumped. The sumps will be drilled during the solidier pile drilling. The sumps will be constructed of a section of 18-inch pipe with slots and/or holes cut into the pipe to allow water to flow through. The pipe will be wrapped with a layer of fabric to minimize the flow of silt into the pipe interior. The soils generated from this excavation will be disposed with other contaminated materials. The pipes will be installed in an upright position with a piece of fabric

positioned under the bottom end and clean crushed stone placed around the pipe to anchor and aid in silt removal (See Figure 5). Following installation of the sump, the pump suction hose will be positioned into the sump and the water removed. Four sumps will be positioned in Phase I area's corners (9-foot cut) plus (2) within the gas holder (20-foot cut) of the excavation. The sumps will be continually dewatering the excavation in order to keep the dewatered level at least 1-foot below any excavated line.

Once work in an area is completed and it is no longer necessary to perform dewatering the sump and fabric will be pulled out and the stone removed for offsite disposal with other contaminated materials.

ITS will provide two 4,000 gallon vertical tanks manifolded in series. As water is removed from the excavations it will be pumped into the temporary storage tanks to allow for initial settling of any suspended solids and equalization with the onsite water treatment plant. The water will be pumped from the Frac tanks trough a bag filter prior to a 1,000-lb carbon canister. Prior to any discharge into the POTW sewer inlet a batch sample will be taken. The analysis will be reviewed prior to discharge in order to ensure that the discharge limitations are fulfilled. The bag filters and separator will be inspected regularly and changed/serviced as needed. The wastewater sampling will be conducted in accordance with the conditions of the discharge permit. The discharge of wastewater will be metered and all gallons discharged will be reported on a daily basis.

4.7 TEMPORARY ENCLOSURE INTERIOR AIR HANDLING SYSTEM

The carbon treatment system will consist of three components: Carbon Unit, skid mounted fan, and ducts (See Figure 4 for design). The carbon unit will be capable of treating up to 6000 CFM of air. The unit will hold 6,000 to 12,000 pounds of vapor phase carbon. The carbon is contained in a roll-off box. The unit features open-air plenum for top and bottom, which allows for the best carbon utilization. It will include four ¾" threaded plugs for the use of saturation indicators. The fan is designed to pull up to 10,000 ACFM at 30"WC of air. The design vacuum is based on pressure drop through the carbon unit as well as reasonable amount of ducting connecting the temporary structure to the carbon unit and the carbon unit to the fan. An induced draft arrangement will eliminate any vapor leakage from the system. The fan consists of Aluminum Spark resistant (AMCA B) Fan Wheel, Carbon Steel housing, Outlet Damper, TEFC Motor, Drain, 75 HP TEFC Motor, V-Belt Drive, OSHA guards on belts and shaft, Teflon Shaft seal. Fan and Motor to be mounted on a unitary sub-base with motor slide base for adjusting motor. The system will be capable of producing three change outs per hour in the temporary enclosure. The system will be located in Building# 93B. The exhaust duct will have a sampling port at base for confirmatory air sampling. The intake duct will exit the southeast side of the enclosure and enter through the existing opening for the man door located on the side of building. The intake duct will be run from the enclosure to the blower unit. The exhaust duct is 22" diameter and it will exit the carbon vessel and run through the existing man door and extend up to the roof of the building at an approximate height of 18' for discharge of exhaust. Sampling port will be installed in the exhaust duct to allow the engineer to perform confirmation sampling to ensure that the emissions are in compliance with all state, federal and local regulations. The blower will be placed inside of Building 93B first and the carbon vessel will then be placed in building through the overhead door allowing for change out access. ITS will utilize carbon saturation indicators for the purpose of identifying the need for carbon change out. Prior to break through ITS will schedule for a carbon change out of the vessel. A carbon change out will take approximately 4 hours and will require work to stop inside of the enclosure. Due to the limited work area only one vessel will be provided.

4.8 INTRUSIVE SOIL ACTIVITIES

Once soil site preparation activities are completed such as clearing, sheeting/shoring and erosion control measures, ITS shall commence with the erection of the temporary building. ITS shall enclose both Phase I and Phase II areas under one enclosure. Acier Hurtsteel, Montreal, CN will provide the enclosure. ITS will provide an air management system.

The temporary enclosure will be 89' wide by 115' long by 36' high (see Figure 3). At the completion installing the "H" piles for the shoring system the erection of the temporary enclosure will commence. The enclosure will have the following:

- 80'W x 115'L (9,600sq. ft.), trusses are 20' o.c.
- Duraweave FR coated fabric. White translucent roof membrane.
- (2) Complete Flat Gable Ends
- 16' x 16' Duratrac Fabric Roll-Up Type OH Doors (manual)
- (1) Single Metal Personnel Doors c/w Panic Hardware
- (2) Framed Penetrations in Side or End walls for Air System
- A viewing window for outside supervision
- Earth Anchors and Stakes for "foundation"
- Termination of Fabric w/ sandbags

ITS shall start the excavation from the rear of building, northeast corner of the structure. The excavation, loading and backfilling operation will move in quadrants from northeast to southeast direction. The excavation will proceed toward the exit/entrance of the enclosure. The excavation depths within the temporary enclosure range from a maximum depth of 20 feet bgs to 9 feet bgs as shown on the contract drawings. Shoring will bound the horizontal extent. The excavation will also include the demolition and removal of the former manufactured gas holder including its foundation. All vibrations and noise levels will be monitored during this activity to ensure compliance with noise and vibration limits detailed in the contract documents. The impacted soils will be directly loaded into trucks for off-site disposal due to the limited storage area. The impacted soils will be handled in a manner to protect site personnel, the public, and the environment. The ITS Site Safety Officer will be in constant contact with the technician performing the perimeter air monitoring to ensure that there are no air excedences at the perimeter of the site. In the event an excedence does occur the excavation area will be foamed to mitigate any odors emanating from impacted soils. Trucks will be inspected prior to loading to ensure that their beds are structural sound in order to prevent leakage or spillage of materials. The beds of the trucks will be tarped and a 6-mil poly liner will cover the contaminated soil prior to exiting the temporary enclosure.

ITS will coordinate with the Engineer on soil excavation, confirmation sampling, and material load-out in order to backfill immediately upon post excavation confirmation sampling. The NYSDEC will be provided the opportunity to accept and observe all confirmatory soil samples. The NYSDEC's on-site representative will be given a 24-hour notice prior to conducting soil samples. This will enable the operation to flow with backfilling while continuing soil excavation operations. If possible, ITS shall use a rear doorway, along the alley, to accept clean fill trucks for backfilling operations. This decision will be made on a case-by-case basis depending upon scheduling restraints.

In conjunction with dewatering the excavation ITS will minimize the open excavation size in order to maintain the water table at least 1 foot below the excavation bottom during excavation and backfilling activities.

The excavation crew shall consist of a PC220 trackhoe, WA320 loader and backhoe with a four-man crew. At all times a flagman will be outside of the enclosure coordinating traffic control and shipping documents. The entire field crew will be on 2-way Motorola radio communication to insure precise coordination.

ITS anticipates approximately 250 to 350 tons per day of soil will be excavated and loaded out for offsite disposal. A separate dewatering technician will be dedicated to managing the dewatering, treatment and water discharge operations. ITS shall excavate the four hot spots located just outside of the temporary enclosure upon completion of excavation activities within the temporary enclosure. ITS will provide shoring details on the four hot spot areas in the Shoring plan. A foam unit will be on standby in the event odors must be mitigated.

The work hours will be from 7:30 am to 5:00 pm during the week. Heavy equipment will not begin operation until 8:00 am unless approval is given by the engineer to alter the work hours. No truck shall be allowed to park and idle along Maple Avenue or the Alley.

The trucks will be staged at the Tilcon quarry on the shoulder of Riverside road. ITS will communicate with the drivers by radio in order to have only one truck in the site at any given time. It will be only after the truck leaves the decontamination pad before the next truck will be summoned from the Tilcon parking area. Construction vehicles for hauling contaminated materials, clean fill materials, and supplies will enter the Town of Haverstraw via Short Clove Avenue. The vehicles will follow Short Clove Avenue to where it becomes Maple Avenue. If there are multiple vehicles they will be directed to the Tilcon Quarry where they will park and wait until the first vehicle departs the site. Trucks that will transport contaminated materials will access the enclosure via the 93A Maple Avenue driveway. Heavy equipment off loading will be done in the alley behind the site since entry to the site via 93A Maple Avenue will be limited due the size of the Truck transporting the equipment. Vehicles supplying fill material will also access the enclosure via the driveway or at times may access the enclosure via the alley. Vehicles leaving the site will retrace the site entry route to exit the town of Haverstraw. If necessary, ITS personnel will utilize the O&R parcel at their Clove and Maple site in order minimize the need for parking areas along Maple Avenue. It will be necessary to ensure that parking on both sides of Maple Avenue between 91 and 93 Maple Avenue will be prohibited in order to maintain truck access into the site.

4.9 SHORING

Due to the dense, cohesive native soils, conventional vibratory sheeting installation will not be considered. ITS will install soldier beams and wood lagging. Steel H-beams will be augured into the existing ground per the ITS design length and spacing. The soil spoils will be underlain and covered with a secured tarp prior to disposal. Wood lagging, wales, and corner braces would be installed as the excavation progresses. The steel H-beams and wood lagging would be left in-place along building 93B and the remaining H-beams will be removed after the excavation and backfill operations are complete. Seismographs will be used to monitor ground vibration. ITS will furnish a comprehensive Earth Support Structure design under a separate cover.

4.10 BACKFILLING

To perform backfilling and compaction operations, ITS will utilize a D-3 bulldozer to spread the clean fill soils and a roller to compact the soils. Imported clean fill will be delivered by truck to the project site. Soil will be trucked to the project site and dumped in piles along the edge of open excavations. The bulldozer will be used to spread the soil in approximately 12-inch compacted lifts and the roller will compact the soils to achieve the minimum compaction required by the contract documents. ITS will enlist the services of an independent testing firm to perform compaction testing of placed clean fill soils. Successive layers of clean fill will be placed until the excavations are backfilled to within 4 inches and 24 inches of finished grade to allow for the placement of topsoil, stone or asphalt.

ITS shall analyze fill material, crush stone and topsoil in accordance with Section 02105, page 2. One sample from each source will be analyzed for the following parameters:

- RCRA 8 Metals
- VOC Method 95-1
- SVOC Method 95-2
- PCBs Method 8082

A total of three (3) samples will be analyzed. The initial sample will be analyzed and the results will be submitted for review prior to receipt of backfill at the site.

4.11 FINAL COVER PLACEMENT

Imported topsoil will be provided and installed in one 24-inch layer over all areas of work to be re-vegetated. Topsoil will be spread and finish graded using a bulldozer over all accessible areas of the site. In confined areas around structures or along the site we will use hand placement and raking to achieve finish grade thus avoiding damage to these site improvements. Topsoil placement will be performed in conjunction with seeding and other site restoration activities to ensure minimum exposure and erosion of the finished grades before vegetative stabilization can be established. Due to the limited volume of topsoil one representative soil sample will be analyzed in accordance with Contract Specification Section 2105 3.2. Located in the Phase I excavation, 4 inches of crushed stone will be placed in accordance with Drawing 8.

Location	Topsoil	Crushed Stone	Asphalt	Concrete	Misc.
Lot 80, 86.1	3400 s.f.	0	0	Up to 600 s.f.	200' fence
Lot 78	0	6400 s.f.	0	0	80' fence
Lot 76/77	0	0	2200s.f.	20' curb apron	Landscaping
Lot 79	3000 s.f.	0	0	20' curb/sidewalk apron	0
Alley	0		0 Repaired as necessary	0	

4.12 SITE RESTORATION - ESTABLISHMENT OF VEGETATION

ITS will enlist the service of a subcontractor to perform curb and paving installation as well as new fence installation. Once these items of construction are completed, an inspection will be made by ITS and O&R's on-site representative to evaluate and approve the area for final restoration.

Additional topsoil will be installed where needed and areas regraded and raked to remove any surface debris and to loosen the surface prior to seeding. The hydro seeding subcontractor will install soil amendments, seed and mulch to the requirements specified in the contract document. Seeding around structure will be performed by hand to avoid damage to newly installed site improvements. Site restoration establishing vegetation will be conducted during the spring months when seeding will be optimum. During the interim between project completion and site restoration ITS will place straw and tack across the areas where re-vegetation is required.

4.13 SITE CLEANUP AND DEMOBILIZATION

Once the entire project is completed to the satisfaction of O&R, ITS will conduct the following activities under the direction of O&R.

1. All garbage and rubbish generated from the site activities shall be collected and placed into a rolloff for off-site disposal.

2. All temporary equipment enclosures and services will be disconnected and removed form the site.

3. All equipment such as bulldozers, excavators, dump trucks, and other equipment used on the site shall be decontaminated and inspected prior to demobilization offsite.

4. All support facilities, such as office trailer and sanitary facilities and mobile decontamination materials, will be packed and removed offsite.

5. All shipping document records will be provided to O&R for all waste leaving the site.

6. ITS will perform a final photo or video documentation of the site following final clean-up and demobilization, a copy of which will be provided to O&R. This will provide both ITS and O&R documentary of the final outcome of the site activities.

4.14 PROJECT CLOSEOUT REPORT

In order to document construction activities, ITS' Project Manager shall submit status reports to O&R's Project Manager. Those status reports in conjunction with shipping documents, as-builts, pertinent data, and photographs depicting the progress of the project shall be included in the final report. This report shall be submitted to O&R's Project Manager within 4 weeks of demobilization from the project site. O&R has the option to request additional information related to the project to be included in the final project report. Once completed, this report shall be the property of O&R and shall not be disclosed to any agencies, unless expressed written consent is given to ITS by O&R.

5.0 OFFSITE MATERIAL DISPOSAL

5.1 MATERIAL STAGING AND LOADOUT

ITS will perform direct loading for offsite transportation of all contaminated materials to the extent possible. However, minimal stockpiling of concrete/asphalt debris and tree stumps will likely be performed to enable us to generate full truckloads of these materials and facilitate disposal at the approved disposal facility. Staged materials will be placed in areas designated for excavation and covered with poly sheeting to avoid any possible cross contamination of clean area. If an excavation area is not available for staging, such as toward the completion of excavation operations, we will place the material into rolloff boxes or onto poly sheeting to avoid cross contamination of clean areas.

Smaller materials such as PPE and used poly will be placed into drums and later dumped into rolloff containers. ITS will mobilize rolloff containers to the site to facilitate direct loading of the waste materials into the containers for subsequent offsite disposal. When the quantity of material merits disposal, and any necessary waste disposal approvals are received, transportation will be scheduled. ITS will arrange for transportation of the various materials that will require offsite disposal during preliminary stages of this project to minimize the wait time between waste collection/generating and disposal activities.

5.2 TRANSPORTATION AND DISPOSAL

ITS will provide a list of disposal facilities for all waste at the site prior to any intrusive work at the site. Once the approved disposal facilities have been accepted by O&R, ITS will coordinate scheduling and removal of designated materials to the approved offsite facilities. ITS will utilize licensed haulers with valid Part 364 permits to perform the transportation and disposal of contaminated materials to approved offsite disposal facilities. ITS will provide copies of Part 364 permits to O&R for all trucks providing transportation during this project prior to accepting trucks at the site. ITS will inspect each load of material following loading to ensure loads are not overweight and no material is protruding out of the container in a hazardous fashion. All loads will be securely tarped and poly sheeting will be secured over the soil before leaving the enclosure to prevent spilling of any materials while in transit to the disposal facility. ITS personnel will tarp all loads and the drivers will not be allowed to exit the vehicle during while their trucks are inside of the enclosure. The drivers will be given the opportunity to inspect their taped loads outside of the enclosure prior to leaving the site. Trucks leaving the exclusion zone will pass through the decon pad to remove any contaminated soils from undercarriages and wheels before leaving the site.

5.3 WASTE TRACKING

ITS recognizes the critical aspect associated with proper management of all waste streams generated during the successful completion of this project. With this in mind ITS will provide O&R a daily report including load counts, approximate volumes and copies of all disposal or recycling documents applicable to that days activities. All loads destined for thermal desorption will be tracked utilizing non-hazardous manifests. A copy of the manifest and load log will be provided to the O&R on-site representative daily. Load weight slips from receiving facilities will be provided to O&R on an agreeable schedule. At the completion of the project, a comprehensive final report shall be submitted to O&R to summarize waste disposal activities.

ORANGE & ROCKLAND
REMEDIATION OF FORMER MGP SITE
HAVERSTRAW, NEW YORK

SUBCONTRACTORS, VENDORS, AND TSD FACILITIES

SUBCONTRACTORS-ONSITE SERVICES:

Task	*Contractor*
Vibration monitoring	Vibra-Tech
General Surveying	Borbas Surveying
Temporary Building	Acier Hurtsteel
Geotechnical Testing	Fairway Testing
Laboratory Services	Aqua Pro-Tech Laboratories

Fill Material:

Task	*Vendor*
Clean fill	Tilcon, Inc. Haverstraw, NY

DISPOSAL FACILITIES:

Primary:	Clean Earth of Philadelphia, Inc.* Philadelphia, PA
	Clean Earth of New Castle, Inc.* New Castle, DE
C&D Material:	Monsey Carting, Inc. West Nyack, NY
MGP Piping:	To be determined

FIGURE 1

Manufacturers Advanced Composite Materials, Automotive and Apparel
Specialty Fabrics, Bias Binding, Electrical Insulation,
Narrow Fabrics, P.V.C. Film, Construction, Survey & Safety Accessories

MUTUAL INDUSTRIES INC.

707 W. GRANGE STREET, PHILADELPHIA, PA 19120

800 523-0888 215 927-6000 FAX: 215 927-3388

CUSTOMER SERVICE LINE

SILT FENCE SPECIFICATIONS

WIDTH:	36" X 100'
SIZE OF STAKES:	1 ½ " x 1 ½ " x 48" (NOMINAL) OAK POSTS
CENTERS:	10' CENTERS
FABRIC:	MISF 180

GRAB TENSILE STRENGTH	LBS.	ASTM D4632	90
GRAB TENSILE ELONGATION	%	ASTM D4632	15
MULLEN BURST STRENGTH	LBS.	ASTM D3786	200
PUNCTURE STRENGTH	LBS.	ASTM D4833	50
TRAPEZOIDAL TEAR	+LBS.	ASTM D4533	40
APPARENT OPENING	US STD SIEVE	ASTM D4751	40
FLOW RATE	GPM/SQ.FT.	ASTM D4491	40
UV RESISTANCE After 500 hours	% STRENGTH RETAINED	ASTM D4355	80

PROPER INSTALLATION:

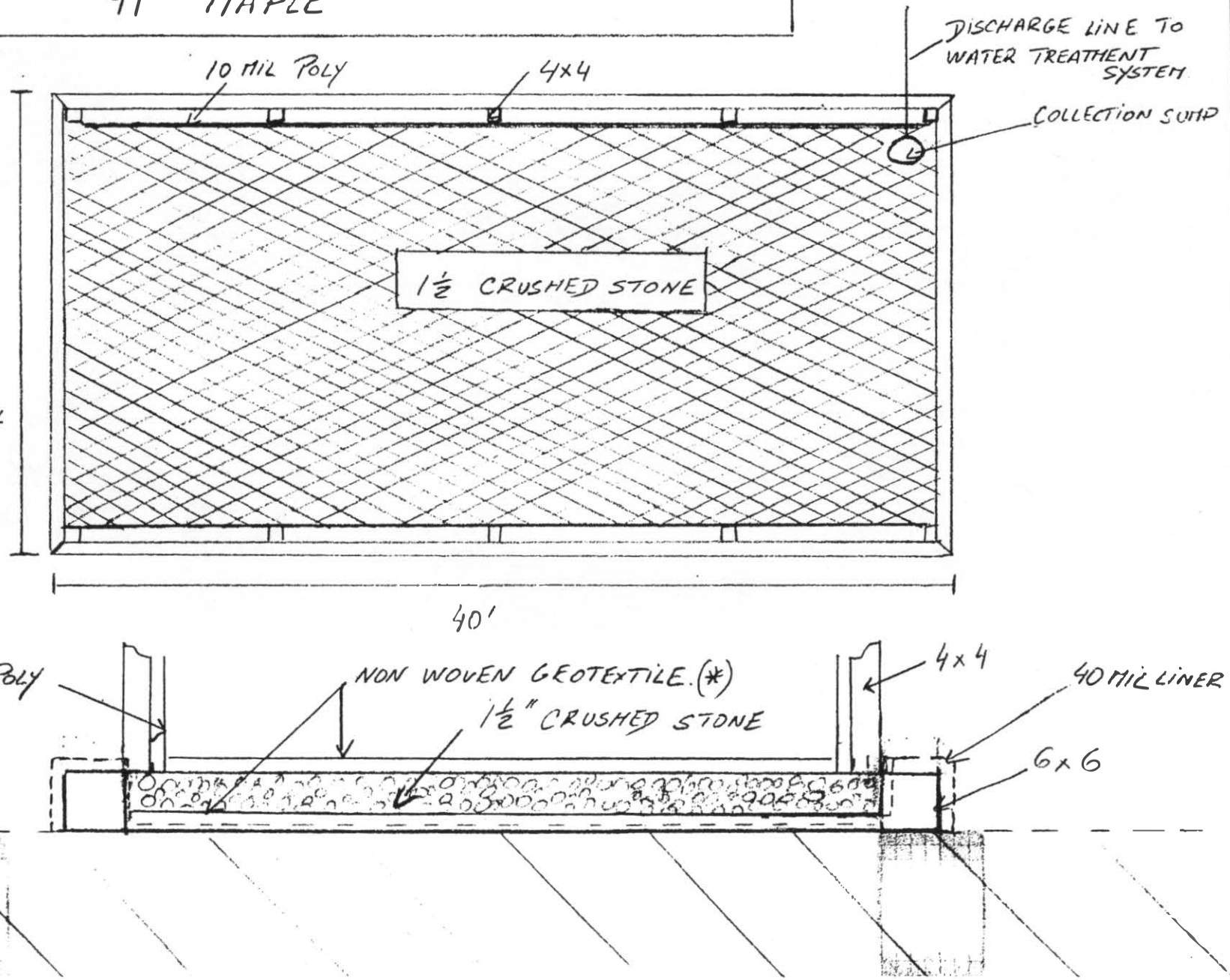
DIG A 6" DEEP TRENCH TO PREVENT SEDIMENT FLOW UNDERNEATH THE FENCE. UNROLL FENCE AND DRIVE STAKES IN CENTER OF TRENCH TO BOTTOM OF FABRIC. MAKE SURE ALL STAKES ARE ON THE DOWN LOPE SID OF FENCE

FIGURE 2

BY _____ DATE _____
CHECKED BY _____ FILE _____

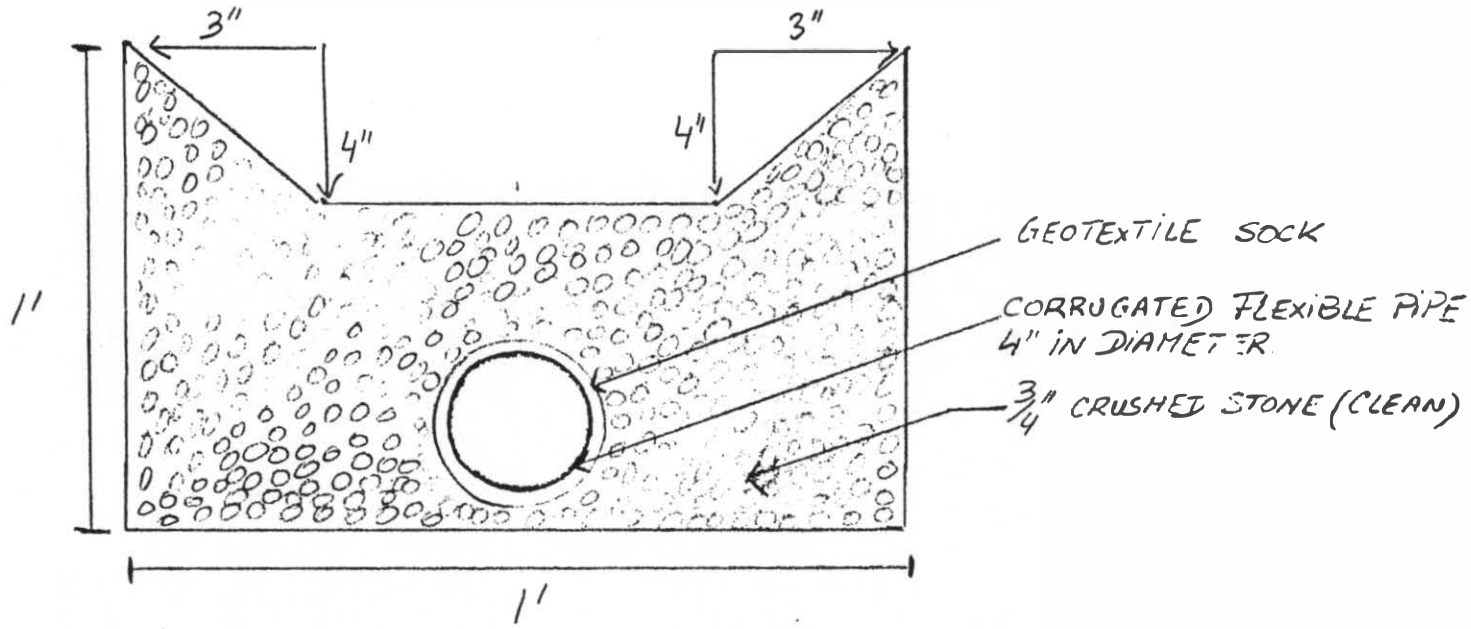
REVISIONS
BY _____ DATE _____

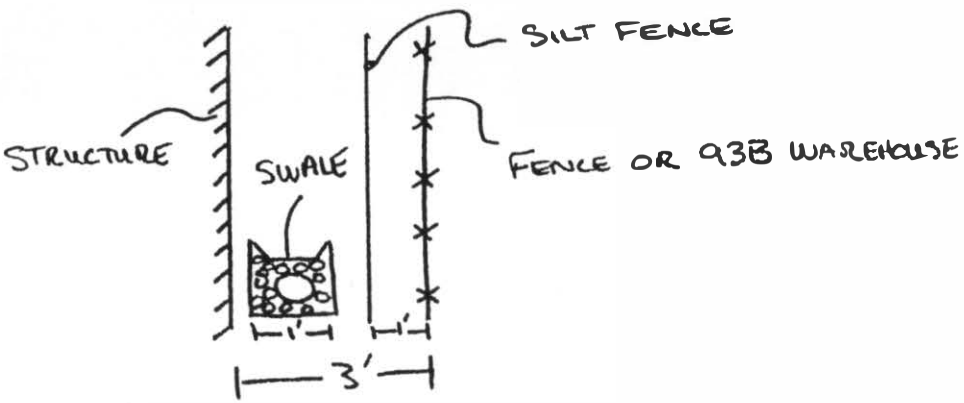
91 MAPLE



t) TOP LAYER OF GEOTEXTILE IS OPTIONAL PENDING ON WORK CONDITIONS.

Dames & Moore


3"
3"
4"
4"
1'
1'
GEOTEXTILE SOCK
CORRUGATED FLEXIBLE PIPE
4" IN DIAMETER
3/4" CRUSHED STONE (CLEAN)


SILT FENCE
STRUCTURE
SWALE
FENCE OR 93B WAREHOUSE
1'
1'
3'

PLATE

STANDARD AND SPECIFICATIONS FOR PERIMETER DIKE/SWALE

Definition

A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area.

Purpose

The purpose of a perimeter dike/swale is to prevent off site storm runoff from entering a disturbed area and to prevent sediment laden storm runoff from leaving the construction site or disturbed area.

Conditions Where Practice Applies

Perimeter dike/swale is constructed to divert flows from entering a disturbed area, or along tops of slopes to prevent flows from eroding the slope, or along base of slopes to direct sediment laden flows to a trapping device.

The perimeter dike/swale shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 5A.3 on page 5A.6 for details.

The perimeter dike/swale shall not be constructed outside the property lines without obtaining legal easements from effected adjacent property owners. A design is not required for perimeter dike/swale. The following criteria shall be used:

Drainage area - Less than 2 acres (for drainage areas larger than 2 acres but less than 10 acres see earth dike; for drainage areas larger than 10 acres, see standard and specifications for diversion).

Height - 18 inches minimum from bottom of swale to top of dike evenly divided between dike height and swale depth.

Bottom width of dike - 2 feet minimum.

Width of swale - 2 feet minimum.

Grade - Dependent upon topography, but shall have positive drainage (sufficient grade to drain) to an adequate outlet. Maximum allowable grade not to exceed 20 percent.

Stabilization - The disturbed area of the dike and swale shall be stabilized within 10 days of installation, in accordance with the standard and specifications for seed and straw mulch or straw mulch only if not in the seeding season.

Outlet

1. Perimeter dike/swale shall have an outlet that functions with a minimum of erosion.
2. Diverted runoff from a protected or stabilized upland area shall outlet directly onto an undisturbed stabilized area.
3. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap, sediment basin, or to an area protected by any of these practices.
4. The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.

Figure 5A.3
Perimeter Dike/Swale Details

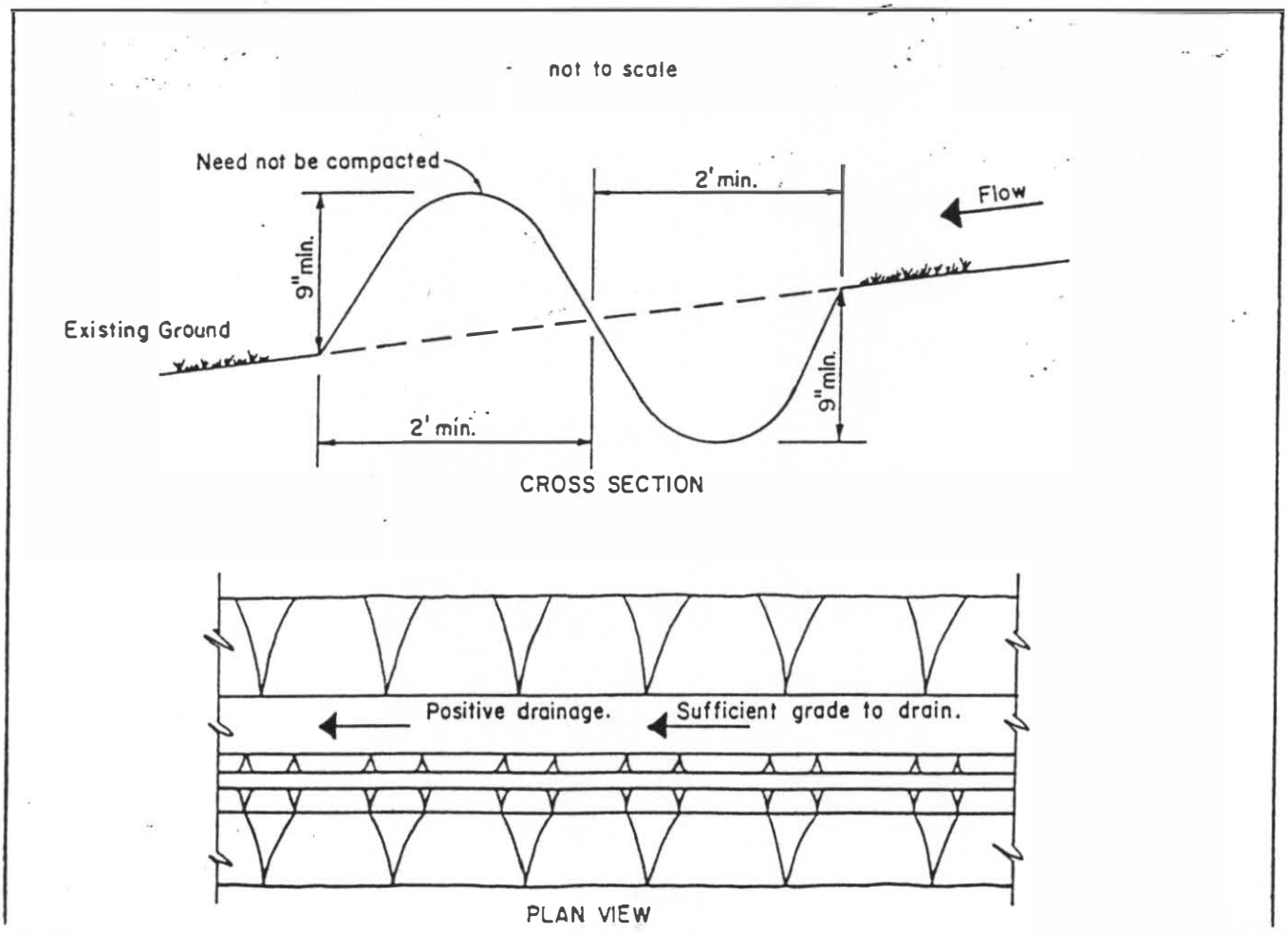
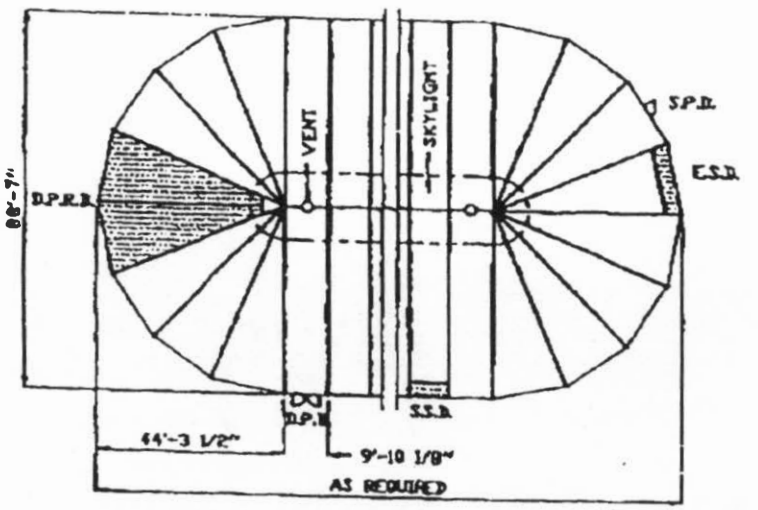
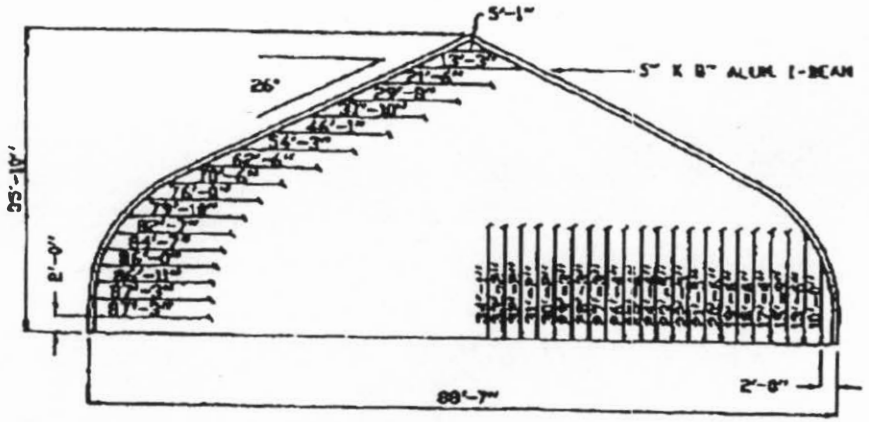


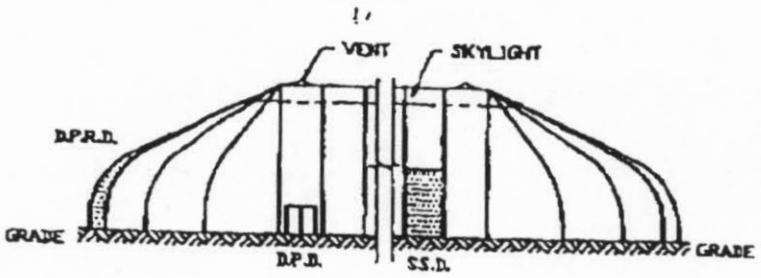
FIGURE 3



PLAN



SECTION
SCALE: 1"=20'-0"



ELEVATION

END ELEVATION

NOTES:
1. DOOR SIZES AVAILABLE.

	HEIGHT	BASE WIDTH	TOP WIDTH
E.S.D. - END SLIDING DOOR	16'-0"	36'-10"	14'-3"
S.S.D. - SIDE SLIDING DOOR	16'-0"	9'-6"	9'-6"
D.P.R.D. - DOUBLE PANEL ROLLING DOOR	32'-0"	33'-0"	5'-0"
D.P.D. - DOUBLE PERSONNEL DOOR	6'-8"	6'-0"	6'-0"
S.P.D. - SINGLE PERSONNEL DOOR	6'-8"	3'-0"	3'-8"
T.P.R.D. - TRIPLE PANEL ROLLING DOOR	32'-0"	47'-6"	6'-3"

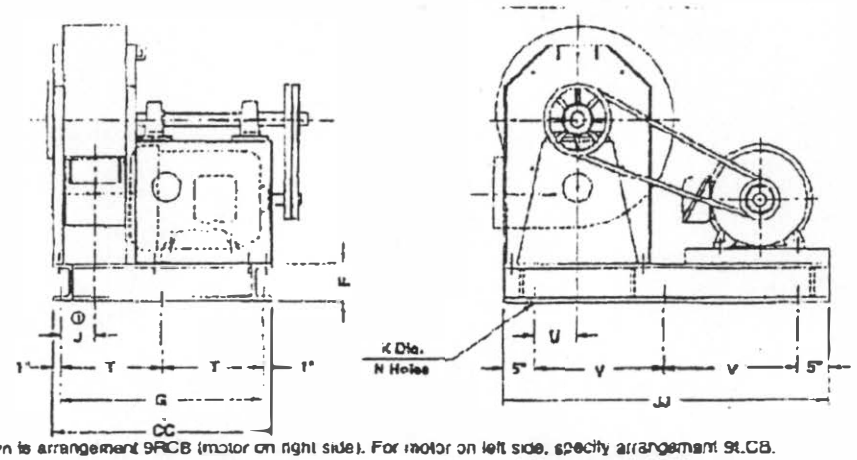
88'-7" STRUCTURE

FIGURE 4

DIMENSIONS and SPECIFICATIONS

4/4

Arrangement #9RCB or #9LCB Channel Base, Belt Drive



Unit shown is arrangement 9RCB (motor on right side). For motor on left side, specify arrangement 9LCB.

DIMENSIONS IN INCHES ±1/8" DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE

MODEL	SERIES	MOTOR FRAME	F	G	J	K	N	T	U	V	CC	JJ
RBE-7	18-25	182T-215T	4	24 7/8	4 1/16	9/16	6	—	3	13 15/32	26 7/8	36 15/16
RBE-9	18	213T-215T	4	30 5/8	4 13/16	9/16	6	—	4 5/8	17 3/4	32 5/8	45 1/2
	25	213T-284T										
RBE-11	18	213T-256T	6	33 7/8	5 11/16	9/16	6	—	6 3/4	21 3/16	35 7/8	52 3/8
	25-32	213T-286T										
RBE-13	18-25	213T-286T										
	32	254T-324T	6	38	6 1/2	9/16	6	—	9 1/8	26 11/16	40	63 3/8
	40	254T-365T										
RBE-15	18	254T-286T		39 3/4						28	41 3/4	66
	25	254T-324T	6		7 3/8	9/16	6	—	10 3/8			
	32	254T-365T		46						26 5/16	48	62 5/8
	40	284T-405T										
RBE-17	18-25	254T-326T		43 7/8						29 1/2	45 7/8	69
	32	254T-405T	6	47 5/8	8 3/16	9/16	6	—	11 7/8	27 13/16	49 5/8	65 5/8
	40	284T-444T										
RBE-19	18	254T-326T										
	25	254T-364T	6	49 1/8	8 15/16	9/16	6	—	13 5/8	31 1/4	51 1/8	72 1/2
	32	284T-405T										
	40	324T-444T										
RBE-21	18	254T-326T										
	25	254T-364T	6	53 1/4	10 7/8	3/4	8	26 5/8	10	32 11/16	55 1/4	75 3/8
	32	284T-444T										

Operating Requirements

Volume, ACFM	10,000
Static Pressure, In. W.G.	28.0
Density, lb./ft³	0.0697
Operating Temperature, °F	70
Site Altitude, ft. ASL	0
Relative Humidity, %	0
Specific Gravity	1.000
Inlet Pressure, in. W.G.	-28.0
AMCA Arrangement No.	#9 (Belt)
Motor Frequency, Hz	60
Start-Up Temperature, °F	70

Fan Selection and Specifications

Model	RBE-21
Fan RPM	2,020
Wheel Description	Alum. Shrouded Radial
Wheel Width, %	100%
Wheel Diameter, in.	36.50
Inlet Diameter, in.	21.00
Outlet Velocity, ft./min	3,994
Fan BHP	71.6
Static Efficiency, %	61.5%
Cold Start BHP	71.6
Construction Class	Series 32

Fan Sound Data

Lp = Sound Pressure Level at a specific distance from the fan. Measured in decibels (dB) or A-weighted decibels (dB(A)) re 0.0002 microbar.

Lw = Sound Power Level of the fan. Measured in decibels (dB) or A-weighted decibels (dB(A)) re 1E-12 watt.

dB = Decibel, ten times the logarithm (base 10) of the ratio of a value to a reference value.

dB(A) = A-Weighted decibel. A-weighting corrects the spectrum for human hearing response.

Sound Directivity Factor, Q : 2 - HemiSpherical radiation
Fan Inlet Ducting: Ducted
Fan Outlet Ducting: Not Ducted

Calculated Octave Band Sound Data (dB)

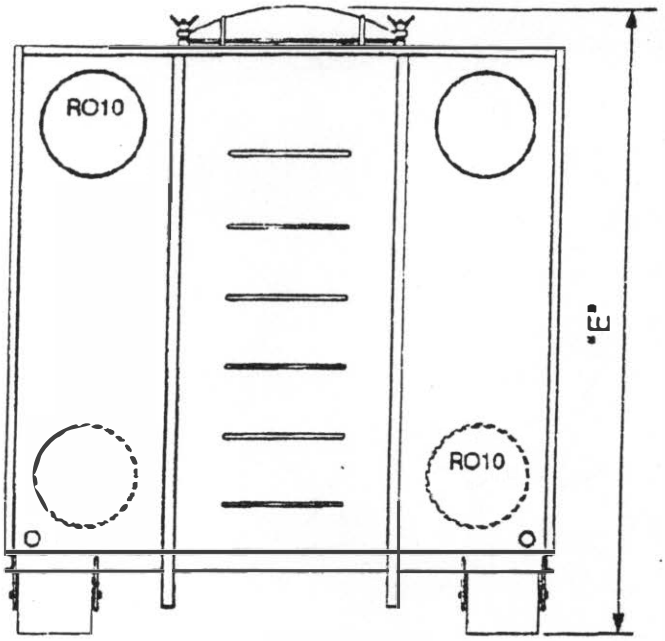
Quantity	63 Hz	125 Hz	250Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000Hz
Lw Total	136	135	122	113	108	105	101	96
Lw Inlet	133	132	119	110	105	102	98	93
Lw Outlet	133	132	119	110	105	102	98	93
Lp Total	125	124	111	101	97	94	89	85
Lp Inlet	107	106	94	84	80	77	72	68
Lp Outlet	124	123	111	101	97	94	89	85

Total A-weighted Sound Pressure Level, Lp dB(A) 110 at 3.2 feet from fan
Total A-weighted Sound Power Level, Lw dB(A) 121
Blade Passage Frequency, Hz 202

- Sound Pressure values are calculated based upon assumed environmental conditions. Actual values may vary for specific installations due to environmental factors (other noise sources, walls, duct design, etc.)
- Noise from the driver is not included in these data.
- Sound Pressure Level calculations assume free field propagation occuring outdoors.
- Duct End Corrections applied (AMCA 300-85 Appendix C).

CFSWin Version: 4.0.0 Database Version: 4.0.1

110 - 24.4 = 85.6 @ 50 feet

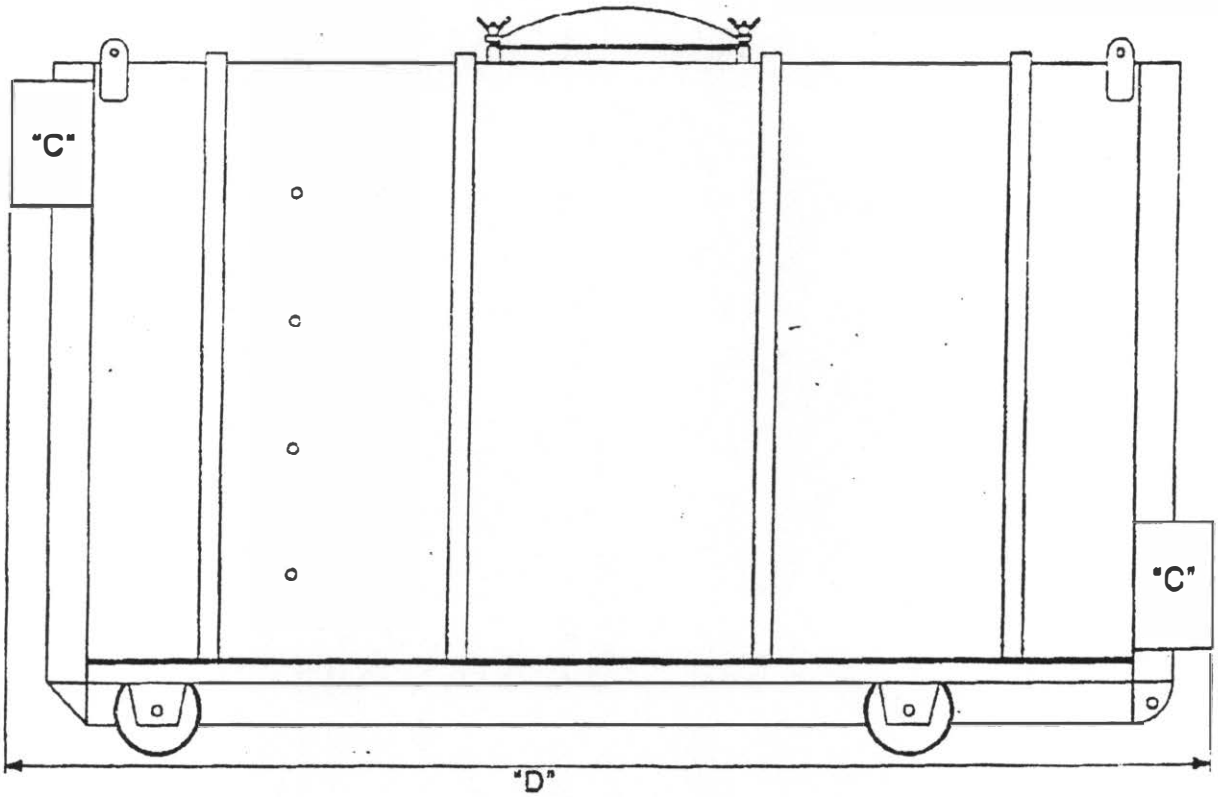


Available Options:

- Internal Lining
- Carbon Saturation Indicator
- Custom Linings
- Custom Colors
- Stainless Steel Construction
- Flanged Inlet/ Outlet
- PRV
- Higher Operating Pressures and Vacuums
- Call for Your Custom Configuration

For more information
Call 1-800-300-2844

Drawings not to scale.
Design and specifications subject to change without notice.



Model #	Cross Sectional Area	No of Inlet/Outlets	Inlet/Outlet "C"	Overall Length "D"	Overall Hgt. "E"	Overall Width
RO-6	100 ft²	1	18"	15'-0"	8'-10"±	8'-6"±
RO-10	150 ft²	2	20"	22'-0"	8'-10"±	8'-6"±

Product Bulletin

WATERLINK
Barnebey Sutcliffe

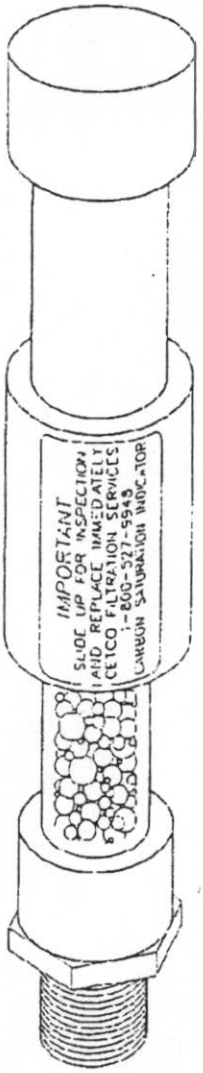
PROTECT™ Carbon Saturation Indicator

Barnebey Sutcliffe Corporation has developed the unique **PROTECT™ Carbon Saturation Indicator** as a monitoring device to compliment **PROTECT™ Vapor Series Adsorbers**. The Carbon Saturation Indicator provides a simple inexpensive method to determine when our activated carbon needs to be replaced.

This device works similar to a litmus test, indicating when volatile organics have saturated the activated carbon bed and breakthrough has begun. When the carbon can no longer adsorb the organics, the media in the indicator changes color from purple to brown. This indicator is a qualitative test for the presence of organic compounds.

The exterior cover of the Saturation Indicator houses the clear internal cylinder which contains the media, and protects it from ultraviolet light and premature contamination.

PROTECT™ Carbon Saturation Indicator is a cost effective approach for monitoring VOC break-through where sophisticated equipment is too expensive or impractical.



Installation on PROTECT™ MX Series Drum Adsorber

- Remove the threaded cap from the bottom of the indicator.
- Removed the ¾" threaded plug from the drum lid and thread the indicator into the opening.
- Remove the green sealing tape from the top and bottom of the indicator.
- Lift the protective cover for inspection and replace. Leave the protective cover down in between inspections.

The indicator should be checked as frequently as the particular application of the adsorber requires. When the bright purple color of the media changes to a dull brown, it is time to replace the activated carbon and **PROTECT™ Carbon Saturation Indicator**.

WATERLINK
Barnebey Sutcliffe

PROTECT™ RO SERIES
High Volume Vapor Adsorbers

Barnebey Sutcliffe Corporation offers a complete line of Roll Off vapor phase adsorbers. The **PROTECT™ RO Series** is designed as a portable adsorber that can easily be put into service where high flow rates are expected.

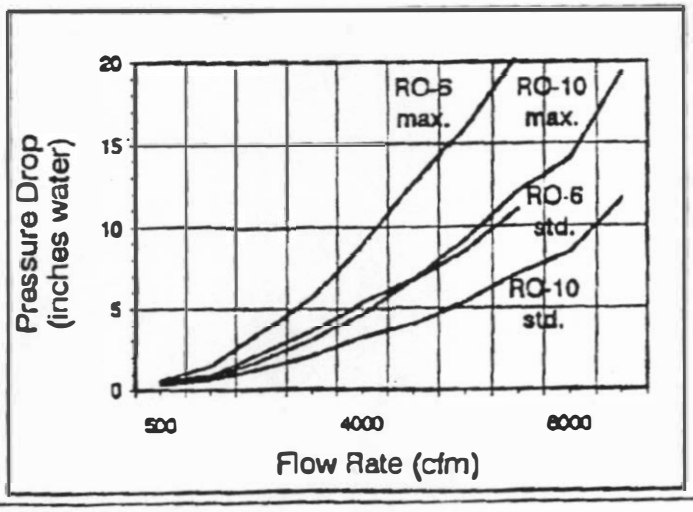
With a media capacity of up to 18,000-lbs., the **PROTECT™ RO Series** can handle flow rates up to 10,000-cfm, are designed for a maximum pressure of 10-psi, a maximum vacuum of 10" mercury, and a max. operating temp. of 150°F.

Model #	Standard GAC ft³/lbs	Maximum GAC ft³/lbs	Recommended Maximum Flow Rate	Estimated Empty Weight
RO-6	200/6,000	400/12,000	6,000-cfm	9,500-lbs.
RO-10	340/10,000	600/18,000	10,000-cfm	13,000-lbs.

Important Features

- Durable carbon steel construction.
- Upper and lower open-air plenum area designed for maximum carbon utilization.
- Large 30" manway for easy access.
- Built-in ladder rungs.
- Can be shipped by flatbed or roll off truck without special requirements or permits.
- (4) ¾" threaded plugs for optional Carbon Saturation Indicator.
- Lifting lugs.
- 18" inlet/outlet opening at each end for upflow or downflow operation.
- Condensate drain.
- Exterior protected with a rust-inhibitive epoxy urethane for a durable finish.
- Can be filled with any of Barnebey's virgin or reactivated granular or extruded activated carbons.
- Shipped with carbon and ready for service.
- All models available for rent.

For more information
Call 1-800-300-2844



Volume and weight based on vapor phase bituminous carbon @ 30-lbs/ft³.

Estimated pressure drop based on virgin 4x10 carbon.

Design and specifications subject to change without notice.

Warning: Some compounds and/or high concentrations can lead to heat buildup in GAC and potential bed fire. Contact BSC for information.

FIGURE 5

STANDARD AND SPECIFICATIONS FOR SUMP PIT

Definition

A temporary pit which is constructed to trap and filter water for pumping to a suitable discharge area.

Purpose

To remove excessive water from excavations.

Conditions Where Practice Applies

Sump pits are constructed when water collects during the excavation phase of construction. This practice is particularly useful in urban areas during excavation for building foundations.

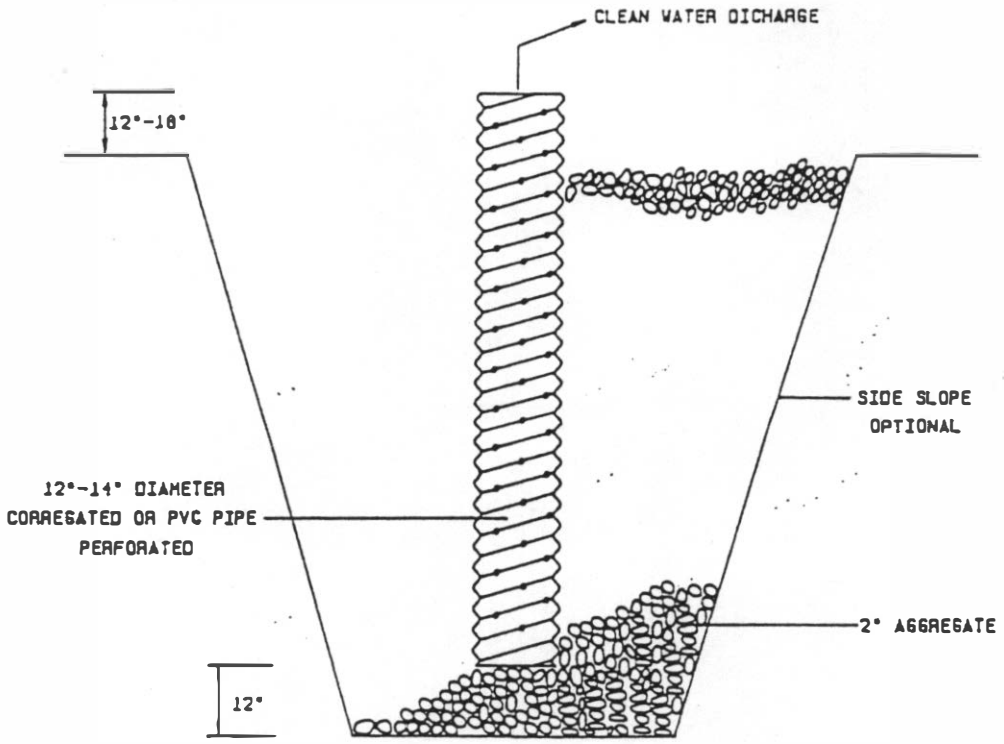
Design Criteria

The number of sump pits and their locations shall be determined by the contractor. A design is not required but construction should conform to the general criteria outlined on Figure 5A.42 on page 5A.88.

A perforated vertical standpipe is placed in the center of the pit to collect filtered water. Water is then pumped from the center of the pipe to a suitable discharge area.

Discharge of water pumped from the standpipe should be to a sediment trap, sediment basin or stabilized area. If water from the sump pit will be pumped directly to a storm drain system, filter cloth (Mirafi 100 X, Poly Filter GB or a filter cloth with an equivalent sieve size between 40-80) should be wrapped around the standpipe to ensure clean water discharge. It is recommended that 1/4 to 1/2 inch hardware cloth be wrapped around and secured to the standpipe prior to attaching the filter cloth. This will increase the rate of water seepage into the standpipe.

Figure 5A.42
Sump Pit Details



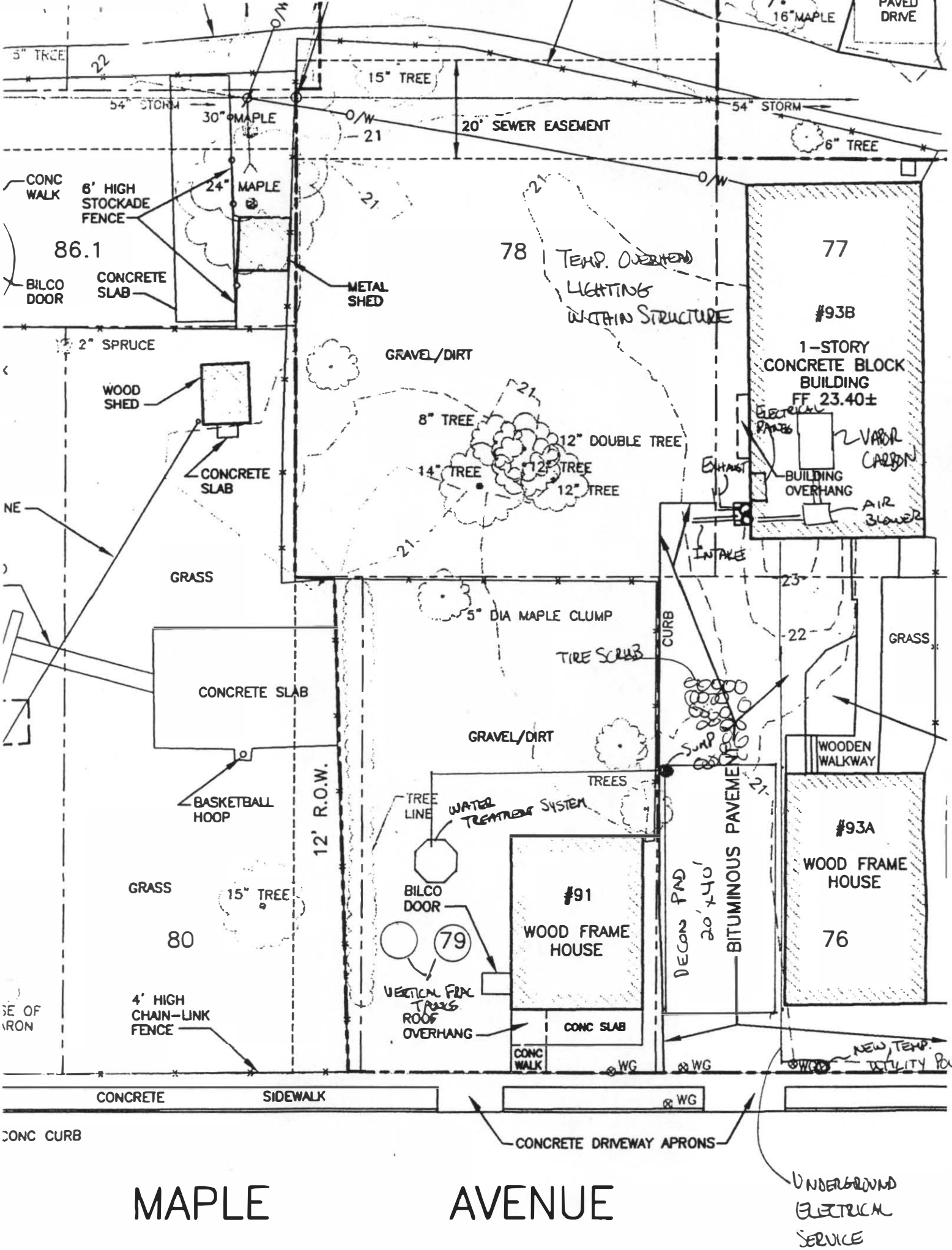
CONSTRUCTION SPECIFICATIONS

1. PIT DIMENSIONS ARE OPTIONAL.
2. THE STANDPIPE SHOULD BE CONSTRUCTED BY PERFORATING A 12"-24" DIAMETER CORREGATED OR PVC PIPE.
3. A BASE OF 2" AGGREGATE SHOULD BE PLACED IN THE PIT TO A DEPTH OF 12". AFTER INSTALLING THE STANDPIPE, THE PIT SURROUNDING THE STANDPIPE SHOULD THEN BE BACKFILLED WITH 2" AGGREGATE.
4. THE STAND PIPE SHOULD EXTEND 12"-18" ABOVE THE LIP OF THE PIT.
5. IF DISCHARGE WILL BE PUMPED DIRECTLY TO A STORM DRAINAGE SYSTEM, THE STANDPIPE SHOULD BE WRAPPED WITH FILTERCLOTH BEFORE INSTALLATION.

   IF DESIRED, 1/4"-1/2" HARDWARE CLOTH MAY BE PLACED AROUND THE STANDPIPE, PRIOR TO ATTACHING THE FILTERCLOTH. THIS WILL INCREASE THE RATE OF WATER SEEPAGE INTO THE PIPE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	SUMP PIT	STANDARD SYMBOL

DRAWING 1


16" MAPLE
PAVED DRIVE
5" TREE
22
15" TREE
54" STORM
30" MAPLE
O/W
21
20' SEWER EASEMENT
54" STORM
6" TREE
CONC WALK
6' HIGH STOCKADE FENCE
24" MAPLE
86.1
BILCO DOOR
CONCRETE SLAB
METAL SHED
78
TEMP. OVERHEAD LIGHTING WITHIN STRUCTURE
77
#93B
1-STORY CONCRETE BLOCK BUILDING
FF 23.40±
ELECTRICAL PANEL
VAPOR CARBON
EXHAUST
BUILDING OVERHANG
AIR BLOWER
INTAKE
2" SPRUCE
GRAVEL/DIRT
WOOD SHED
CONCRETE SLAB
8" TREE
12" DOUBLE TREE
14" TREE
12" TREE
12" TREE
NE
GRASS
5" DIA MAPLE CLUMP
23
22
CURB
GRASS
TREE SCRUB
CONCRETE SLAB
GRAVEL/DIRT
SUMP
WOODEN WALKWAY
TREES
TREE LINE
WATER TREATMENT SYSTEM
BASKETBALL HOOP
12' R.O.W.
#93A
WOOD FRAME HOUSE
76
BITUMINOUS PAVEMENT
DECON PAD 20'x40'
GRASS
15" TREE
80
BILCO DOOR
79
#91
WOOD FRAME HOUSE
VERTICAL FRAC TANKS
ROOF OVERHANG
CONC SLAB
CONC WALK
WG
WG
NEW TEMP. UTILITY POLE
4' HIGH CHAIN-LINK FENCE
CONCRETE SIDEWALK
WG
CONC CURB
CONCRETE DRIVEWAY APRONS
MAPLE AVENUE
UNDERGROUND ELECTRICAL SERVICE

DRAWING 2

RESUMES

MICHAEL PIRNER

PROFESSIONAL EXPERIENCE:

PROJECT MANAGER
Integrated Technical Services, Inc.

Responsible for site management and administration of various remediation projects for Integrated Technical Services, Inc. and a sister company, Consolidated Technologies, Inc.

EXPERTISE:

Site Remediation
Hazardous Waste Management and Remediation
Remedial Construction Management

EXPERIENCE:

Project manager for former manufactured gas plant located in Hamilton, NJ. The project included the installation of groundwater collection system.

Project Manager for a former manufactured gas plant located in Harrison, NJ. Project includes the installation of earth support, excavation of 70,000 tons of impacted soils, installation of slurry wall, installation of utilities, ground water collection system and 30-acre asphalt cap of the site.

Project Manager for a former manufactured gas plant located in Trenton, NJ. The project involved the excavation of 198,000 tons of MGP impacted soil. Responsible for the transportation of soil to a thermal desorption facility for treatment. The treated soil was returned to the site for reuse as backfill material. The project included 750 linear feet of shoring including tiebacks as earth support for the protection of a major highway. Work included the removal and installation of existing utilities.

Project Manager for an MGP project located in Dover, DE. The project included the excavation of three former gasholders. All contaminated soil was rendered to non-hazardous standards and transported for disposal to a thermal desorption facility.

Project Manager for an Army Corp of Engineers landfill cap located in Valley Forge, PA. The project included the relocation of RCRA contaminated incinerator ash and the capping of the landfill with 40 mil HDPE liner. The project included the installation of groundwater collection trenches and gas vents.

Site Manager for a PADEP site cleanup in Edinboro, Pennsylvania. The project involved delineation, classification and disposal of 2,000 tons of TSCA soils and 15,000 tons of contaminated soils along with the installation of 1 acre of wetlands. The site was cleaned up to residential standards and approved by the PADEP.

Site Manager at McGuire Air Force Base where approximately 81,000 cubic yards of soil was excavated, characterized, loaded, transported and disposed of at a thermal desorption facility. In conjunction with this operation, over 1,000,000 gallons of contaminated surface water and groundwater was containerized, characterized and transported offsite unless the water was not above the cleanup criteria for the site in which case the water was pumped directly into the base's storm water system. In addition, 3250 linear feet of transit pipe containing asbestos was excavated, loaded, transported and disposed of at an appropriate landfill.

Site Manager at a former manufactured gas plant and was responsible for the rendering of RCRA hazardous coal tar contaminated soil, tar and debris mixture to non-RCRA/DOT contaminated concentration levels. Utilizing a Pugmill, in series and inside a temporary Spring Structure to create an automated treatment process, 5000 tons of material was rendered non-hazardous and transported to a thermal desorption facility. A vapor carbon treatment system was installed, as a means of odor control, inside the temporary Spring Structure, which contained the rendering equipment. Approximately 200 tons of steel from the Gas Holders was removed, pressure steamed and recycled at a local recycling facility. The Gas Holders were backfilled and the entire site restored and seeded.

Responsible for the cleaning and removal of 11 underground storage tanks containing various petroleum products ranging in size from 550 to 10,000 gallons located at 7 different sites for the New Jersey Department of Military and Veterans' Affairs. Services were conducted in accordance with the State and local laws related to proper closure of UST's. The services included all aspects of removal, excavation, post-excavation sampling, and staging of all contaminated soils. Development and implementation of the waste pile sampling and analysis plan including disposal, backfilling and final restoration.

Conducted a site assessment of the SEPTA-Midvale site in Philadelphia. The site assessment was conducted to determine the existence of contaminants on the surface and at various depths. Responsible for excavation of approximately 78,000 tons of contaminated soil. Soil was transported offsite for disposal.

EDUCATION: LaSalle University, Philadelphia, Pennsylvania 1992
Bachelor of Arts Degree, Geology

MARK J. TALARICO

PROFESSIONAL EXPERIENCE:

10/2001 – 10/2002

Project Manager – WRS Infrastructure & Environment, Inc.

- Project Manager for a low-permeability cover system for the General Electric Company in Florence, SC. Project scope included the demolition and excavation of existing pavement and underlying soils, installation of geotextile/40-mil liner cover, placement of 400 cy of reinforced concrete for pavement and loading ramp. On-site responsibilities included field design and survey control for finished concrete grades and field change order negotiations.

- Construction Supervisor for three, concurrent landfill remediation project in Orlando, FL. Project scope involved the excavation and separation/processing of approximately 60,000 cy of construction/industrial debris and electroplating waste/sludge. Duties included on-site supervision of employees, health and safety supervision, quality control of waste handling & disposal, cost and revenue tracking, cost estimating and invoicing.

2/2001 – 8/2001

***Project Controls* – GMBA Consulting**

- Project Control Consultant for a manufactured gas plant in Newark, NJ. Prepared and implemented operations plan for the remediation of an existing 33-acre facility. Construction activities included excavation, blending, and disposal of 40,000 tons of coal tar soil and installation of 40,000 sf of steel, sheet piles. Prepared and updated P3 schedule with cost and resource loading reports.

1/1999 – 12/2000

***Project Manager* – Clean Earth, Inc., Mount Laurel, NJ**

- Project Superintendent for a NYSDEC Superfund landfill in Glen Cove, NY. The project scope included the excavation and mechanical screening of 70,000 cy of debris; sampling and characterization of VOC and radioactive material; preparation of final grading plan. Managed union payroll of twenty operators, laborers, and teamsters. Provided schedule updates, submittal preparations, EEO utilization program for the City of Glen Cove's Community Development Agency.

- Facility Manager for the construction of a dredged processing facility in Jersey City, NJ. Coordinated the salvaging of 2,000 tons of scrap; grading, and placement of a 5-acre asphalt lot; installation of rail sidings; and erection of a pugmill rated at 5000

tons per day. Prepared erosion control plan, air monitoring permit, and beneficial reuse plan. Performed bench scale studies for various admixture ratios with raw dredge.

- Project Manager for the remediation and restoration of an existing mineral processing plant. Scope included riverbank restoration; excavation and disposal of lead soils; stormwater line replacement; milling, preparation, and placement of asphalt cap.

8/1996 – 12/1998

Project Manager **– Philip Services Corp., Hatfield, PA**

- Project Superintendent for an USEPA Superfund landfill in York, Pennsylvania. The US Army Corps of Engineers administered the construction. The 10-acre project included site grading, relocation of 60,000 cy of refuse, landfill cap construction with GCL, installation of storm water management system and site restoration. Responsibilities included on-site management of quality control system, safety and field personnel; cost tracking, payroll, Union negotiations, schedule updates, submittal preparations, subcontract negotiations, public relations and field negotiations for changed work conditions.

- Site Manager for a NYSDEC Superfund site in Watertown, NY. Project included the supervision for excavation, consolidation and disposal of PCB and RCRA contaminated soils; removal of scrap metal, installation of soil cover and riverbank restoration.

12/1992 – 7/1996

Water Quality Supervisor **– PA American Water Company, Norristown, PA**

- Supervised compliance with Federal and State SDWA regulations through proper reporting and monitoring which required ongoing evaluation of water treatment procedures, including process control and quality control.

- Developed and maintained regulatory compliance programs which met the requirements for NPDES, residual waste and other Clean Water Act regulations. Activated a permit for a drying bed impoundment and contracted the most economical disposal of residual waste.

- Coordinate comprehensive laboratory and monitoring programs, which include sample collection, written methodologies, recordkeeping, operator training and quality control/assurance measures to provide documentation that the potable water produced complies with all applicable standards.

- Maintain an aesthetically pleasing water through treatment optimization, recommendations for distribution system water quality concerns (bacterial, corrosion)

and effective customer communications. Optimized chloramination disinfection protocol and developed SOPs for all phases of treatment.

11/1989 – 12/1992

***Staff Engineer* – Dames & Moore, Willow Grove, PA**

- Site Supervisor for a hazardous waste landfill in Albany, NY. Managed the Level B field team in the removal of buried drums; coordinated the sampling characterization program and laboratory screening tests for the consolidation of various liquid waste streams; operation and maintenance of an on-site groundwater treatment system and vacuum extraction system; developed protocol for bioremediation lab studies.

- Site Manager for a steel mill decommissioning in Carnegie, PA. Scope included deconning of ASTs, vats, and the removal, transportation and disposal of associated waste streams. Project close out included the preparation of PADEP Closure Plans and the successful reward of new contracts.

- Industrial wastewater treatment plant operator for a Fortune 100 client in Kingston, NY. Included O&M manual preparation for the wet chemistry laboratory and quality control checklist along process line.

EDUCATION:	Clarkson University, B.S., Chemical Engineering, 1989
CERTIFICATIONS/ TRAINING:	USACE Quality Control Systems Manager Certification PA Certified Waterworks Operator Class A, Type 1 40 Hour HAZWOPER Training plus 8 Hour Refresher Advanced EXCEL PRIMAVERA, P3 Project Planner Training SURETRAK Project Manager Training

JOSE E. SILVA
HEALTH AND SAFETY OFFICER

HIGHLIGHTS OF EXPERIENCE

- **More than 10 years of experience** as a Project Manager / Health and Safety Officer on major residential and commercial construction projects.
- **Site Health and Safety Officer** during shutdown operations at Phillips 66's Bayway Refinery in Linden, NJ. Managed health and safety while total personnel more than tripled during a two-week time period.
- Managed and monitored **Level B supplied air operations** during confined space entry activities involving highly toxic substances.
- **Proficient instructor** in several environmental, health and safety topics, such as confined space entry, DOT HM-215 and respiratory protection.

SPECIFIC EXPERIENCE & AREAS OF EXPERTISE

- In-depth knowledge and understanding of environmental, construction and general industry OSHA regulations. Jose has also trained workers in Scaffold Safety and performed respirator fit testing in half and full faced APR's.
- Adept at performing Job Safety Analyses and preparing a daily Safe Plan of Action for workers under his supervision.
- Proficient in the calibration and usage of various monitoring instruments, such as: Photo Ionization Detectors, Dust Meters, 2 and 4-gas meters, personal sampling pumps and sound level meters.
- Has conducted numerous toolbox talks and site safety inspections, identifying hazards and implementing solutions to ensure total compliance with OSHA.
- Facilities where Tony has performed site health and safety services include Merck & Co., Rahway, NJ; Bristol-Myers Squibb, New Brunswick, NJ; PSE&G, Princeton and East Rutherford, NJ; and Con Edison, Lakewood, NJ.
- Jose has managed all phases of construction work on major construction projects, coordinating with Developers and Architects while ensuring subcontractors met required deadlines.
- Able to operate backhoe, bobcat and forklifts.
- Ability to read Blue Prints.
- Jose is particular skilled at managing large crews of workers, acting as the liaison between labor and management.

TRAINING / CERTIFICATIONS / LICENSES

- 40-Hour OSHA Hazardous Waste Operations training with current refresher
- 10-hour OSHA Outreach training in Construction Safety and Health
- Confined Space Entry
- DOT HM-215
- Merck Orientation and Safety training
- Fluent in English, Spanish & Portuguese.

PM's Copy D. Crosby

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Construction Services, 12th Floor
625 Broadway, Albany, New York 12233-7013
Phone: (518) 402-9814 • **FAX:** (518) 402-9819
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

NOV - 4 2002

FAX

Ms. Maribeth McCormick
Senior Environmental Engineer
Orange and Rockland Utilities, Inc.
1 Blue Hill Plaza
Pearl River, New York 10965

Dear Ms. McCormick:

RE: Haverstraw 93B Maple Avenue Former Manufactured Gas Plant Site
Haverstraw, Rockland County
Interim Remedial Measures

The New York State Department of Environmental Conservation has completed review of the "Project Plan, Orange and Rockland, Remediation of Former MGP Site, Haverstraw New York" and the "Health and Safety Plan," prepared by Integrated Technical Services, Inc., dated October 2002. The following comments are provided for your consideration.

1. Sampling: The plan must include a statement that the Department will be provided the opportunity to accept and observe all confirmatory soil samples. The contractor, to the extent practical, should provide the Department's on-site representative with 24 hour notice of such sampling.

ok ✓

2. It was discussed at the preconstruction meeting that the tri-axil trucks proposed by the contractor are not equipped with tarps which would completely enclose the top of the box. How was this issue resolved?

OK

3. Please provide the name of the project manager, site supervisor, and site health and safety officer and provide a resume.

OK

4. Section 3.6, Air Monitoring: Please note that if the community air monitor program indicates a concern that corrective actions at the work site need to be taken immediately to protect the community.

Perimeter Air Monitoring Plan

5. Section 3.7, third paragraph: The statement should be expanded to include all roads in the vicinity of the site where dust and dirt may accumulates from the construction activities, including the alley to the east of the site. A better statement is found in Specification 02370 "Public street shall be kept free of dirt, dust, contaminated materials or other building materials. If such materials are deposited, spilled, or spread on a public street, such material shall be removed quickly."

6. Section 4.1: The NYSDEC on-site representative should be involved in the evaluation and inspection of the erosion control systems so that we may provide acceptance and recommendation.

7. Section 4.1: The Department prefers to see hay bail place in conjunction with the silt fence.

8. Section 4.1: The plan seems to indicate that there will not be a berm placed on the driveway side of lot 93B. How will storm water in this area be managed? Where will the storm water coming off the structure go?

9. Section 4.1: If appropriate, the location where storm water enters the storm sewer should be protected with hay bails to prevent release of sediment to the storm sewer.

10. Section 4.10, Backfill: One of the three analytical samples of the clean backfill should be collected and analyzed prior to receipt at the site. The Department should be provided the results of the sampling.

11. Section 4.11, Final Cover Placement: The imported top soil should be sampled in a similar manner as the specifications in Section 4.10.

12. Section 4.14, Project Closeout Report: It is our understanding that the Department will receive a final engineering certification report which outlines the work performed. The report must include a certification that indicates that the work was conducted as per the approved work plan. The report must be signed and stamped by a professional engineer licensed to practice engineering in the State of New York. The report can be prepared by the contractor or the engineer.

13. Section 5.2: Prior to intrusive work, the Department requires a listing of all disposal facilities that will be used to manage all waste generated, including solid wastes.

14. Section 5.2: Prior to intrusive work, the Department requires a list of all transporters used.

15. Section 5.2: Trucks should be tarped within the structure, if possible. Further, the load of a truck when full should be considered a work zone and any person entering the box should have appropriate personal protective equipment. Real time air monitoring should also be conducted. It is suggested by the Department that only ITS remedial workers enter the box to tarp the trucks and not the truck drivers as truck drives often do not have the appropriate training.

16. Section 5.3, Waste Tracking: TAGM 4061 allows MGP wastes to be shipped as nonhazardous wastes if the material is destined for thermal treatment. However, the Department does require some type of waste tracking information to be with the vehicle when traveling to the disposal facility. At other MGP sites contractors have used a bill of laiding or non-hazardous waste manifests. Please clarify.

17. Section 4.12, Site Restoration: It is our understanding that the project schedule indicates that the excavation work will be completed in February 2003 and that site restoration will not be conducted until the spring of 2003. How will the site be protected in the month or two between the end of the excavation and site restoration efforts?

18. Figure 5A.3: Please explain what the plan view is showing.

19. Carbon Saturation Indicator: This appears to be a good approach to evaluating the carbon system. However, the Department requires additional measures to verify that the carbon indicator is accurate. Typically, a PID, detector tubes and analytical sampling are used to insure that the carbon has not been exhausted.

20. Water Management: When they are available, please provide the Department the discharge requirements required by the local POTW. In addition, the Department should be provided a copy of the appropriate analytical results.

21. Health and Safety Plan: The plan references the Orange and Rockland safety procedures. Further, the plan states that all contractors will work in accordance to the O&R plan. Should the O&R safety procedure be appended to the site specific HSP?

22. Health and Safety Plan: The Department requires that the Health and Safety Plan be certified by a CIH or other health and safety professional. Please provide credentials of the author of the HSP.

It is our understanding the Orange and Rockland wishes to mobilize at the site the week of November 4, 2002, as such, please respond to these comments as soon as possible. The Department appreciates Orange & Rockland's continued efforts to conduct a remedial program at the Haverstraw 93B Maple Avenue Former MGP site. If you have any questions, please feel free to contact me at 518-402-9813.

Sincerely,

David A. Crosby

David A. Crosby, P.E.
Senior Environmental Engineer
Central Field Services Section
Bureau of Construction Services
Division of Environmental Remediation

cc: Stephanie Selmer, NYSDOH-Troy
Tom Kahl, GEI Consultants
Mike Pirner, ITS

DAC:mm
bcc: R. Pergadia - NYSDEC, Region 3
J. Helmeset - DER-BWRA
S. Sellinger - NYSDEC, Region 3, Tarrytown
J. Van Hoesen - DER-BCS
D. Crosby - DER-BCS (2 copies)
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