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ORIGINAL (Red)

SITE SAFETY PLAN
FOR
SITE SECURITY AND
EROSION AND SEDIMENTATION CONTROL
C&D RECYCLING
FOSTER TOWNSHIP, PENNSYLVANIA

Prepared For:

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October 22, 1987

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SITE SAFETY PLAN

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FOR
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C&D RECYCLING
FOSTER TOWNSHIP, PENNSYLVANIA

Approved By:

Contractor Corporate Health & Safety Officer:

_____ _____
"Name of Corporate Health & Safety Officer" Date

Contractor Project Manager:

_____ _____
"Name of Project Manager" Date

Contractor Site Safety Officer:

_____ _____
"Name of Site Safety Officer" Date

EPA Project Coordinator:

_____ _____
"Name of EPA Project Coordinator" Date

R-S#39

4.1 INTRODUCTION

This Health and Safety Plan exists to protect employees from the potential hazards encountered during construction activities to be implemented at the C&D Recycling Site in Foster Township, Luzerne County, Pennsylvania.

It is intended to comply with Section III(c) of CERCLA, EPA Order 1440.1 - Respiratory Protection, EPA Order 1440.3 - Health and Safety Requirements for Employees Engaged in Field Activities, the December 19, 1986 OSHA regulations in 29 CFR Part 1910, the Occupational Health and Safety Act (OSHA) of 1970, 5 U.S.C. 7902(c)(1), the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities prepared by NIOSH, OSHA, USCG and EPA, October 1985 and any applicable Pennsylvania Health Statutes.

Although the degree and type of potential hazard encountered by construction teams varies greatly depending on the type of site and the detail of field activity, certain administrative policies and procedures must be adhered to. These include: the use of properly trained personnel who regularly participate in a health surveillance program, specific criteria for organization and size, site characterization to establish hazard level, proper selection, use and maintenance of personal protective equipment and basic safety procedures. The following sections detail the health and safety requirements for all personnel who will be working at the C&D Recycling Site, which must be adhered to during the performance of the work as specified in the Work Plan.

In accordance with Paragraph XIX of the Administrative Order on Consent, USEPA Docket Number III-87-31-DC, AT&T Nassau Metals Corporation does not admit liability for any purpose or admit any issues of law or fact or any, responsibility for any alleged release or threat of release of any hazardous substance into the environment.

4.2 ACTIVITY HAZARD ANALYSES

The five basic activities at the site, as discussed in the Work Plan, are:

1. Installation of additional chain link fence.

2. Application of seed, fertilizer, and mulch blanket over the devegetated area.

3. Installation of silt fencing.

4. Improvement of the existing drainage channel.

5. Regrading and covering the four (4) ash piles.

These activities, which will be conducted more or less simultaneously, share a number of similar potential hazards. These potential hazards include:

1. Exposure to soils containing lead and copper.

2. Cold and/or heat stress due to wearing protective clothing.

3. Common construction site hazards - electrical, motorized equipment, fire, excavation, etc.

Site conditions have been evaluated based on available information to identify potential effects upon site workers and the surrounding community during proposed activities. The evaluation has considered five major factors:

1. Properties of lead and copper.

2. Lead and copper concentrations in soil, air and water.

3. Location of elevated lead and copper concentrations at specific site areas.

4. Exposure potential for personnel during site activities.

5. Known effects of lead and copper on human beings.

The hazards posed by chemicals present at the site depend on the relative abundance of these chemicals (i.e., concentrations in air, soil, waste, groundwater, and surface water), and the potential for workers or the public to be exposed to the chemicals and their intrinsic hazards (e.g. severity of toxicity).

The chemicals known at the site are discussed in Table 4-1 of this document. The levels of these materials may pose a potential hazard from chronic exposure (Table 4-1).

Lead and copper are known to be both on the surface and below it, based on work done previously at the site. Vaporization from the near surface soils is not expected to be a substantial hazard. There is very little evidence of significant volatile organics. Dust containing lead, copper, and low levels of semivolatile organics (fluoranthene, Phthalates) may be generated during site activities.

To mitigate all of the above potential hazards, the combination of protective clothing, safer work practices and engineering safeguards are proposed in subsequent sections of this plan.

4.3 CONSTRUCTION TEAM ORGANIZATION

A construction team must be organized to efficiently and safely carry out the objectives of the project. These objectives will include such activities as chain link fence installation, silt fence installation, and channel excavation. In addition to performing its work activities, the team must provide for its own safety to prevent injury or exposure to materials that may be hazardous. This can be accomplished by assignment of specific roles and responsibilities to members of the construction team.

There are a number of roles which are required for the safe and competent operation of a construction team. The five roles which are necessary at every site where a construction team will be working are: Project Manager, Construction Team Leader, Site Safety Officer, Equipment Specialist and the Work Party. Additional roles, such as Command Post Supervisor, Personnel Decontamination Station Operator and an Emergency Response Team, are added to the construction team when the scope, magnitude or hazard of the activity justifies the need for them. A team member may take on more than one role, but the roles must be clearly assigned and must cover all those required rather than describe one team organization for all the different types of field investigations. Guidelines are presented here for assignment of responsibilities to team members to ensure safety.

4.3.1 Project Manager

The Project Manager is responsible for the overall effectiveness of construction activities. The specific responsibilities of the Project Manager include preparing and organizing all project work assignments, briefing team personnel on specific duties, obtaining permission for site access from the owner or responsible party, completing reports and maintaining the evidentiary file, and coordinating with government representatives and subcontractors.

4.3.2 Construction Team Leader

The Construction Leader is accountable for the organization, operation and safety of the Work Party. This role may be filled by the Project Manager. The Construction Leader is responsible for proper field operations, completion of the objectives of the site work plan, compliance with document control procedures, proper field documentation of activities and operating procedures and determining the level of personal protection necessary to ensure the health and safety of the Work Party. If subcontractors or outside observers are present, the Construction Leader must ensure that the people abide by health and safety procedures.

4.3.3 Site Safety Officer

The Site Safety Officer has primary responsibility for all safety procedures and operations on-site. This role may be filled by the Project Manager or the Construction Leader. The Site Safety Officer is responsible for the following: finalizing the site safety plan; upgrading or downgrading, if necessary, the level of personal protection based upon observations and changing circumstances during the field operations; enforcing the buddy system (personnel working in pairs); posting and briefing the construction team of an approved safety plan which outlines locations, routes and telephone numbers of the closest medical facilities and poison control centers; posting other emergency telephone numbers, such as the fire and police department and Health and Safety Director; notifying local public emergency personnel; verifying that construction team members have met the health and safety requirements for field assignment; controlling site entry and exit at the personnel decontamination station; and, monitoring the work party for signs of stress such as changes in complexion, coordination, demeanor or speech patterns through observation. During adverse weather conditions, the Site Safety Officer will implement special precautions to guard against heat stress or cold exposure as described in EPA's "Standard Operating Safety Guides" (November 1984). The Site Safety Officer has the authority to halt any operation that threatens the health or safety of the team.

4.3.4 Equipment Specialist

The Equipment Specialist is responsible for obtaining and inspecting all equipment and maintaining all equipment in proper operating order. This role may be filled by the Project Manager or the Construction Leader. This requires specialized training in maintenance of equipment, such as self-contained breathing apparatus.

4.3.5 Work Party

The work party is ultimately responsible for the safe and successful completion of the work assignment. The members of the work party share many active and important functions which are necessary to fulfill the objectives of the investigation. These include setting up the personnel decontamination station, performing the various work tasks and decontaminating the entire work party prior to leaving the site.

4.4 TRAINING AND MEDICAL SURVEILLANCE

4.4.1 Training

4.4.1.1 Introduction

All workers at the C&D Recycling Site will participate in a training program that will provide initial indoctrination and continued safety training. This program will help ensure that no person will work under conditions that are unsafe or dangerous.

4.4.1.2 Initial Training

The Health and Safety Officer or his designee will be responsible for providing occupational hazard training to all employees as required by OSHA 29 CFR 1910.120 and specifications prior to the commencement of work. The length and content of training programs shall be consistent with the requirements of OSHA Standard 29 CFR 1910.120. This training includes:

a) Potential hazards,
b) Biology, chemistry and physics of hazardous materials,
c) Rights and responsibilites of workers under OSHA,
d) Standard safety operating procedures,
e) Types of monitoring equipment to be used,
f) Site Safety Plan,
g) Internal and External Communications,
h) Medical surveillance program,
i) Personal protective clothing and equipment,
j) Respiratory equipment including training and qualitative fit-testing for half and full facepiece respirators and use of self contained breathing apparatus,

k) Air monitoring program,
l) Decontamination procedures,
m) Evacuation, first aid and emergency procedures dealing with fire and medical situations,
n) Work zones established at the site,
o) Safe work practices associated with employee's work assignment, including dust control measures, hazardous materials recognition, and use of the buddy system,
p) Basic operation safety, emphasizing hazards expected on site, and,
q) Prohibitions (inside exclusion and contaminant reduction zones), including:

(i) Glasses or facial hair, such as beards or long sideburns, which interfere with respirator fit,
(ii) Contact lenses,
(iii) Eating, drinking, smoking, chewing in the Exclusion or Contaminated Reduction Zone,
(iv) Personal articles, e.g. watches, rings, etc., and,
(v) Working when ill.

4.4.1.3 Visitor Training

The Contractor will be responsible for training visitors to the site, to inform them of the hazards associated with the site, to explain emergency procedures and instruct them in the use of protective gear required during the visit. No visitors or employees will be permitted in the Exclusion and Contamination Reduction Zones without documented training and inclusion in a medical surveillance program.

4.4.2 Medical Surveillance

The Construction Contractor must have a Medical Surveillance Program which is designed to monitor the health of employees whose work regularly poses the possibility of exposure to toxic materials. It shall provide for an initial (baseline) health evaluation and periodic follow-up examinations.

The Health Surveillance Program is administered by the contractor's Health and Safety Director in consultation with a Medical Consultant. These persons will be responsible for establishing the specific medical testing program, selecting medical facilities to perform the examinations and establishing and administering procedures for the program. Medical examinations must be conducted or evaluated by a physician Board - certified in Occupational Medicine. Examination results and the physician's evaluation are submitted to the Medical Consultant for review.

4.4.2.1 Medical Examinations, Contents and Frequency

Participation in the Health Surveillance Program is mandatory for all employees involved in hazardous waste site investigations requiring on-site work. The first, or baseline examination, will be given to each new employee. The examination consists of a complete medical examination designed to screen for evidence of adverse effects of occupational exposure, particularly exposure to toxic substances.

4.4.2.2 Medical History

A complete medical history will be taken to include current symptoms, review of systems (including reproductive history and relevant aspects of behavioral history), hospitalizations, immunizations, medications, family history of significant diseases, allergies, use of alcohol and drugs, smoking history and previous compensation and disability claims. Review of systems will include a systematic inventory of past or present disorders of each major organ system. Particular attention will be given to behavioral or psychological conditions that may interfere with frequent travel, wearing confining protective gear, observing detailed safe work practices and interacting constructively with public officials, members of the public and

media representatives. Particular attention must also be given to previous episodes of possible heat injury, cardio-respiratory disorders, skin disorders that would preclude wearing burdensome protective clothing and respirators, renal disorders, back disorders, previous malignancies (including skin), pre-malignant conditions and reproductive history (especially reproductive failures such as infertility, miscarriages, still births, small-for-dates, prematurity, neonata deaths, birth defects and genetic disorders).

4.4.2.3 Occupational History

A complete occupational history will be recorded to identify a chronological account of every job ever held including dates, name of company, type of industry, toxic exposures and know adverse health effects.

4.4.2.4 Physical Examination

Each individual will receive a complete physical examination, which will include general appearance, vital signs, height, weight, skin, head, eyes, ears, nose, throat, hearing, vision, thyroid gland, lymph nodes, chest, respiration, heart, abdomen, extremities [including muscles, joint, hernias (ventral, inguinal and femoral)], veterbral column, rectal examination with stool testing for occult blood and complete neurological examination. Pelvic examination with Pap smear and breast examination is included for females.

4.4.2.5 Basic Laboratory Tests

Each individual will receive a basic group of blood tests to evaluate blood-forming, kidney, liver and endocrine/metabolic function. Other laboratory tests include: a routine urinalysis, electrocardiogram, chest x-ray, pulmonary function test, vision test and an audiogram.

4.4.2.6 Annual and Exit Examinations

Each individual will receive an annual medical examination similar to the pre-study examination with the exception of the chest X-ray which is taken based on the advice of the physician and/or medical consultants. In this way, any irregularities or trends can be easily detected and evaluated. Upon termination of employment or leaving the program, each employee who worked at hazardous sites is required to receive an exit examination identical to the annual examination.

4.5 SELECTION, USE AND MAINTENANCE OF PERSONAL PROTECTIVE EQUIPMENT

Proper selection, use and maintenance of respiratory protective equipment and other personal protective equipment is extremely important in protecting the health and safety of construction personnel. An inadequate level of protection may result in unnecessary exposure to toxic substances or other hazards. An excessively high level of protection may unnecessarily encumber the personnel and result in decreased efficiency, fatigue and other hazards. Improper use or maintenance of protective equipment also exposes field personnel to unnecessary risks.

The site hazard assessment will be based on a site characterization obtained from previous site investigations. The appropriateness of the level of protection will be assessed continually during all field investigative tasks. This level must be approved by both the Site Safety Director and Corporate Health and Safety Director. The selection is based on the potential for exposure to substances in air, splashes of liquids or other direct contact with material due to work being done, the toxicity of the suspected or measured chemical substances and professional experience and judgement. Criteria used to determine the level of protection are discussed below.

4.5.1 Respiratory Protection

The selection of adequate respiratory protection depends primarily on the type of regulated material which may be encountered. Proper respirator use requires formal training and continued maintenance of the equipment in accordance with 30 CFR Part 11 and provisions of the National Institute for Occupational Safety and Health. OSHA regulations pertaining to respiratory protection require a training program that encompasses user responsibilities, training for proper use and respirator maintenance. OSHA also requires qualitative fit testing of face-pieces. Facial hair (beards) and wearing contact lenses is prohibited.

At the C&D Recycling Site, a photoionization detector (PID) or flame ionization detector (FID) will be used to assess ambient organic concentrations in air before and during field activities. In addition, airborne particulate sampling and monitoring will be implemented to assess the potential for the migration of particulates and worker exposure to particulates containing lead and/or copper. This program will consist of two parts: ambient air and personal monitoring.

4.5.1.1 Ambient Air

Time-weighted-average measurement of particulate lead and copper will be taken over a period between 8 and 24 hours, depending upon the prevailing wind pattern. At this time, it is anticipated that particulate sampling will be limited to one event to assess any impacts from airborne particulates containing lead or copper. A program such as the following but not necessarily identical to it may be used.

General Metal Works high-volume samplers will be set at a height of four feet above ground surface at one upwind site and two sites downwind of the work area during a period of surface disturbance. The flow rate will equal approximately 60 cu. ft./min. Since a small number of particulate samples will be taken during the field study, the samplers will not be calibrated in the field. The samplers will be calibrated by the laboratory and shipped to the site with calibration sheets in well-padded shipping containers. Each sampler will either be fitted with a chart recorder that records pressure drop across the filter, or the sampler will be fitted with a constant flow controller. The units with recorders will be calibrated so that flow rate for any pressure drop will be available from the calibration graph. The recording will be analyzed to determine overall sample volume. The constant-flow controllers will automatically shut down and mark the elapsed time if the pressure drop is such that the unit cannot maintain the proper flow rate. All samples will be collected during a synchronous time period. Sampling locations will be selected based on prevailing meteorological conditions.

Gelman Scientific type A/E glass fiber filters (8 inches x 10 inches) will be conditioned, pre-weighed, and loaded into sampling cassettes by the laboratory. All filter samples, including one blank, will be shipped in cassettes under full chain-of-custody procedures back to the laboratory for analysis. All filters will be analyzed for total particulates and EPA Priority Pollutant metals.

A meteorological station is to be established to accurately record all data including horizontal wind speed and direction, temperature, relative humidity and barometric pressure. This data will be taken into consideration for daily air sampling.

4.5.1.2 Personal Monitoring

Personal samplers will be attached to one worker for 2 days. SKC pumps, Gilian pumps or equivalent, initially calibrated before and after each use with a primary standard, will be set at 0.2 L/min. The air sample will be collected on a filter cassette to determine TWAs after laboratory analyses. These monitors will be worn by personnel considered to be maximally exposed.

A Personal Particulate Monitor (PPM) will be used to assess the concentration of particulates in the air in the work space. The suggested PPM is known as a Miniature Real Time Aerosol Monitor (MINIRAN) Model PDM-3. These PPM's can be used to determine ambient concentrations of total particulate matter present within the atmosphere. Therefore, certain activities in which there is minimal disturbance of the surface soil can be undertaken using modified Level D protection while real time measurements of total particulates are obtained. These activities are the installation of the chain link fencing, the placement of riprap stones, and the seeding of devegetated areas.

Surface soil samples have already been taken in the area in which the chain link fence will be installed and the riprap placed. Surface soil samples taken by the Weston TAT in April 1986 report the highest level of lead in the shale pit at 13,400 ppm and the sample in the drainage area behind the barn at 3,235 ppm. Surface soil samples taken by NUS in April 1987 report the highest level of lead in the shale pit at 12,100 ppm and a sediment sample in the drainage area behind the barn was reported to be 60 ppm. Using the highest concentration reported in these samples (13,400 ppm) and expressing this concentration as a ratio (.0134) and dividing the TLV for lead (0.15 mg/m^3) by this ratio, a total particulate concentration of 11.19 mg/m^3 is identified as the action level. A sustained reading of 11.19 mg/m^3 total particulates in the breathing zone will necessitate the upgrading to Level C protection.

A surface soil sample for lead taken within the existing fenced area to be vegetated was reported during the June 1984 sampling by PADER to be 141,025 ppm. Using the above procedure a total particulate concentration of .94 mg/m^3 is identified as the action level. A sustained reading of .94 mg/m^3 total particulates in the breathing zone will necessitate the upgrading to Level C protection.

The following factors are generally used to select adequate respiratory protection: exposure limits, oxygen level, warning properties, protection factor, maximum use limit and service concentration limit. These factors are discussed below.

4.5.1.3 Self-Contained Breathing Apparatus (SCBA)

It is not expected that a SCBA will be used at the C&D Recycling site during construction activities.

4.5.1.4 Air-Purifying Respirator (APR)

The APR will be used at the site during all earth moving activities, if permitted by the results of organic vapor monitoring and preliminary ambient and personal particulate monitoring at the site. APRs will have organic vapor or high efficiency particulate adsorption filters or both depending on determined site characteristics. The APR can be used only in atmospheres containing sufficient oxygen to sustain life (in open air this is usually not a problem) and when other criteria, discussed below, are met.

Specific organic vapor and particulate lead and copper concentration limitations exist for specific filter or cartridges. The chemical-cartridge respirator provides respiratory protection against certain gases, vapors and particulates in concentrations not to exceed those labeled on the cartridge. An APR can only be used in an area where minimal concentrations might occur and where a SCBA has been determined to be unnecessary. Ambient air organic concentrations at the site will be determined by monitoring with a photoionization detector (PID) or a flame ionization detector (FID) and time-weighted average measurement of particulate lead and copper will be taken over a period between 8 and 24 hours, depending on the prevailing wind pattern. Many types of APR cartridges are available and field personnel should select the appropriate one for the inorganic or organic constituent expected.

Air purifying respirators or cartridge respirators are worn when:

- Any unidentified and potentially hazardous odor is detected.
- Regulated materials in the air are not greater than 10 times the permissible exposure limit (PEL) and have good warning properties.

- The Safety Officer judges that respirators are needed as a precaution against generation of low levels of toxic substances in air due to excavating, handling, decontaminating or other operations.

- The capacity of the cartridge will not be exceeded by extended periods of use on-site. (If used for extended periods, cartridges must be changed.)

Users of air purifying respirators must comply with the following:

- At least 19.5 percent oxygen must be present for respirator use, or unprotected breathing.

- Air purifying respirators must be NIOSH-approved.

- Cartridges must also be NIOSH-approved and should be matched to the respirator by the manufacturer.

- Cartridges must not be used past the expiration date.

- Air purifying respirators will provide adequate protection only if they have good face seals. A qualitative fit test is required for each employee using these respirators.

- Upon experiencing any warning property such as difficulty with breathing, dizziness or other distress or strong taste or smells, the user must immediately leave the site. The Construction Team Leader or Site Safety Officer may require that a user of an air purifying respirator carry an emergency escape air mask.

- Users of air purifying respirators must follow the manufacturer's instructions on the donning and use of the equipment.

- Cartridges must sometimes be replaced as often as each hour of use or when the user senses or smells a vapor. If the vapors of interest do not have warning properties, the APR cartridge must not be used.

4.5.2 Protective Clothing

Protective clothing must be worn by all personnel at the C&D site to prevent skin exposure and to minimize spread of contamination. All on-site operations require protective clothing. Protective clothing may include, but is not limited to chemical-resistant pants and jackets or coveralls, disposal coveralls, steel toe and shank boots, protective gloves, hard hats, face shields or chemical safety glasses (if a full face respirator is not worn). Once adequate protective clothing is chosen, employees must also note that alertness is a significant safety factor. Since protective clothing is cumbersome, it hastens the onset of fatigue and heat exhaustion, it can decrease alertness and it limits stay-time.

The following sections described Level B, C and D protective equipment.

4.5.2.1 Level B

It is not anticipated that Level B protective clothing will be required for any of the activities to be conducted at the C&D Recycling Site. The USEPA Field Team (NUS Corp.) used a PID survey instrument during its previous Site inspection. This survey indicated no detectable levels of organic vapors. Nevertheless, a similar survey instrument (PID or FID) will be used during Site activities. If detected organic vapor concentrations in air consistently exceed 5-10 parts per million (ppm) above background within the breathing zone in any area at the Site, Level B protective clothing will be considered for work that is to be conducted within that (those) area(s).

Level B protection consists of:

- Open-circuit pressure-demand SCBA;
- Chemical protective overalls and long-sleeved jacket or tyvek coveralls;

- o Gloves, inner, surgical type;
- o Gloves, outer, chemical protective;
- o Boots, chemical protective steel toe and shank;
- o Booties, chemical protective; and
- o Butyl rubber apron or rain gear.

4.5.2.2 Level C

Level C protective equipment will be required during all soil disturbance and fence hole boring operations. Furthermore, Level C protection will be required during all activities involved with the installation of the silt fencing, the covering of the ash piles, and when real time monitoring indicates that particulate levels necessitate the use of respirators. Prior to conducting any of the activities, the safety officer will perform a walk through using a PID or FID to determine ambient organic vapor concentrations in air. If detected organic vapor concentrations consistently exceed 5-10 ppm above background within the breathing zone in any area at the site, the need for upgrading respiratory protection beyond Level C will be considered. A PID or FID will also be used to continuously monitor concentrations of organic vapors within the breathing zone during earthmoving or fencehole boring operations.

Level C protection consists of:

- o Full face or half face air-purifying respirator (previously described) with appropriate cartridges organic with HEPA filters;
- o Tyvek coveralls;
- o Boots/shoes, safety, with steel toe and shank;

- o Hard hat with optional face-shield;
- o Gloves, inner, surgical type; and,
- o Gloves, outer, chemical protective.

4.5.2.3 Modified Level D

Based upon a review of the types and concentrations of inorganic and organic constituents which may be present on the Site, at least Modified Level D protective clothing will be required for all activities to be conducted at the Site. Level D is the basic work uniform and is used where significant exposure regulated materials is unlikely. Field personnel must not be permitted to work in civilian clothes.

As discussed previously, modified Level D protection is planned for certain activities in which there is minimal disturbance of the surface soil and real time measurements of total particulates are to be obtained.

The modified Level D protection will consist of:

- o Tyvek coveralls;
- o Boots/shoes, safety with steel toe and shank;
- o Safety glasses;
- o Hard hat;
- o Air-Purifying respirator (readily available)
- o Gloves

4.6 CONTINGENCY PLAN

A Site Contingency Plan will be prepared before work starts, which describes procedures to be implemented in the event of a site emergency. This complex plan will designate the following information at a minimum:

1. Site manager and safety officer.

2. Incident notification information.

3. Emergency procedures for injuries or fire.

4. Emergency equipment present on-site.

5. Warning systems on-site.

6. Action levels for site evacuation.

7. Summary first aid information.

4.7 BASIC SAFETY PRACTICE AND RECORDKEEPING

Field personnel will observe basic safety practices. The Health and Safety Officer will be responsible for informing all field personnel of these practices. They will include, but not be limited to, the following:

- o Observe the buddy system (work in pairs);
- o Eating, drinking and smoking are prohibited on-site;
- o Contact lenses cannot be worn with any respirators;
- o Practice contamination avoidance by avoiding obviously contaminated objects/areas and by not sitting or kneeling on the ground;
- o Do not climb over drums or obstacles; and,
- o Maintain contact with the Site Safety Officer.

The Contractor will also provide the following safety protocols:

- o Rules for safe operation of heavy equipment.
- o Safety inspect checklist.
- o Accident prevention program.

In addition, a tailgate safety meeting will be conducted at the beginning of each shift or whenever new employees arrive at the job site once the job commences. This meeting discusses daily operational activities and the health and safety considerations for that day's activities, and outlines protective equipment necessary. The Project Manager and Site Safety Officer will conduct these meetings.

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4.7.1 Recordkeeping

Certain records will be maintained on-site. These include:

1. Accident/Incident Reports - All accidents will be reported to the Site Safety Officer who will then investigate the accidents and make recommendations to prevent its reoccurrence.

2. Site Inspection Lists - The contractor will provide a site inspection list to be completed daily by the Site Safety Officer. The list will include information on the presence or appropriate use of:

   a. respirator usage
   b. emergency equipment
   c. protective clothing
   d. portable/hand tools
   e. electrical equipment
   f. heavy equipment
   g. air monitoring instruments

4.8 SITE SAFETY PLAN

A specific Site Safety Plan has been prepared based on limited information. This plan provides information about the site, an evaluation of the hazards present and the plan developed to protect the field personnel and to prepare for emergency action. The plan must be approved by the Project Manager and the Health and Safety Director prior to the operation.

The Site Safety Plan has five parts. The first part provides general information including the name and location of the site and the objective(s) of the activities. The second part provides information on the site and waste characteristics, including a description of the facility and its history. The third part of the form is a hazard evaluation which assesses the potential hazards to site construction personnel based on available information. The fourth part of the form is the work plan itself. It establishes the work area, the personal protection (level of protection and equipment) to be used, decontamination procedures, site entry procedures, the site entry team members and their responsibilities and work limitations. The last part of the form provides emergency information, including emergency contacts and resources and emergency routes to hospitals or other facilities.

The Site Safety Plan contains specific information describing the safety precautions and procedures to be used and justification for them. The hazard evaluation is a key part, since the plan must be developed on the basis of the evaluation of known or potential hazards.

4.8.1 Reporting Incidents Involving Personal Injury or Exposure to Hazardous Materials

All incidents involving personal injury or exposure to potentially hazardous materials during any field activity must be documented and reported immediately to the Health and Safety Director. A standardized incident report is used for this purpose.

It is important to report all exposures and injuries, even though the incident is not considered serious or no adverse health effects or symptoms are apparent at the time. Often exposure to a toxic agent may have delayed or latent effects which may only be detected by specific diagnostic tests. Documenting an exposure may aid in identifying the cause of symptoms or changes in health status indicators (diagnostic blood tests or pulmonary function, for example) at a later time. Likewise, an injury, such as an eye injury caused by dust particles, may result in delayed damage to the eye.

4.8.2 Site-Specific Safety Plan

A Site-Specific Safety Plan for the C&D Recycling site is detailed in Table 4-1. The safety plan provides general information, site/waste characteristics information, hazards information, work plan information and emergency/contingency information.

The Site-Specific Safety Plan shown in Table 4-1 requires certain information to be supplied by the contractor performing the construction activities. This information must be supplied prior to the onset of field activities for EPA approval.

TABLE 4-1

FIELD CONSTRUCTION TEAM
SITE SAFETY PLAN

A. GENERAL INFORMATION

SITE: C&D RECYCLING PROJECT NO._____

LOCATION: Foster Township, Pennsylvania

CONTRACTOR PERFORMING THE CONSTRUCTION ACTIVITIES:

CONTRACTOR PROJECT MANAGER:

CONTRACTOR CORPORATE HEALTH AND SAFETY OFFICER:

CONTRACTOR SITE SAFETY OFFICER:

OBJECTIVE(S): Perform site construction activities including installation of chain link and silt fencing, drainage channel improvements, drainage pipe outlet protection, regrading and covering the four (4) ash piles and revegetation. Operations are designed to deter entry of unauthorized persons and minimize site soil migration.

PROPOSED DATE(S) OF CONSTRUCTION: [to be inserted by contractor]

BACKGROUND REVIEW COMPLETE: PRELIMINARY: X

DOCUMENTATION/SUMMARY: OVERALL HAZARD: SERIOUS MODERATE LOW X UNKNOWN

B. SITE CHARACTERISTICS

WASTE TYPE(S): LIQUID SOLID X SLUDGE GAS

CHARACTERISTIC(S): CORROSIVE IGNITABLE RADIOACTIVE
VOLATILE TOXIC X REACTIVE UNKNOWN OTHER (NAME):

TABLE 4-1
(continued)

SITE DESCRIPTION: C&D Recycling is an inactive site at which copper recovery from lead and polyethylene cased telephone cables was conducted for a period of 15 to 20 years. Additional information can be found in Section 2.0 of the Site Security and Erosion and Sedimentation Control Work Plan, Background Information.

PRINCIPAL DISPOSAL METHOD (type and location): Lead ash derived from the incineration of lead cased telephone cables was stockpiled on-site. Polyethylene scraps derived from the mechanical stripping of polyethylene casing from telephone cable was also stockpiled on-site.

STATUS (active, inactive, unknown): Inactive

HISTORY: See "Site Description", "Principal Disposal Method" and Section 2.0, Site Background, in the "Site Security and Erosion and Sedimentation Control Work Plan".

C. HAZARD EVALUATION

In April of 1987, NUS for USEPA conducted sampling of surficial soils, sediment and surface water at the C&D site and split these samples with Fred C. Hart Associates, Inc. Nine surficial soil samples, including a replicate and background soil sample, two sediment samples and two surface water samples were obtained. Analyses were performed on split samples obtained by Fred C. Hart Associates, Inc. (HART) by Century Laboratories, Inc. of Thorofare, New Jersey according to Contract Lab Program (CLP) protocols.

TABLE 4-1
(continued)

Inorganic analyses performed on soil, sediment and surface water included Hazardous Substance List (HSL) Metals and cyanide. The metals include lead and copper. Lead concentrations in surficial soil ranged from 14 mg/kg to 65,100 mg/kg. Lead concentrations in sediment samples were 141 mg/kg and 1180 mg/kg. Lead concentrations in one unfiltered surface water sample was 127 ug/l and undetected in the other sample. Copper concentrations in surficial soil ranged from 21 mg/kg to 13,900 mg/kg. Copper concentrations in sediment were 55 mg/kg and 414 mg/kg, and concentrations in unfiltered surface water samples were 24 ug/l and 50 ug/l.

Lead compounds can produce poisoning when they are swallowed, but absorption from the digestive system is slow and inefficient, so that to produce an effect, large doses of most lead compounds are necessary and poisoning develops slowly. In the respiratory system, on the other hand, most lead compounds are absorbed rapidly and completely so that poisoning will develop from much lower doses. It is not even necessary that the compound penetrate deeply into the respiratory system. It has been demonstrated experimentally that lead compounds are absorbed rapidly and completely from the nasal passages; they do not have to penetrate the digestive system or go deeper into the respiratory system.

Prevention of lead poisoning is almost entirely a matter of good housekeeping and dust control. To prevent ingestion, food or drinks should not be taken on site where lead compounds may be found.

TABLE 4-1
(continued)

The poisoning produced by inhalation of solid inorganic lead compounds commonly causes symptoms of lead colic and lead anemia. Stipple cells (or other readily stained cells in the circulation blood) are good indicators of lead absorption, although not so good as the direct measurement of lead content of the blood or urine. Lead in blood will be measured for site workers.

Effect of short exposure is not known quantitatively, but is a factor of dosage X time.

Atmospheric concentration immediately hazardous to life is not known, in cases of inorganic compounds. The minimum lethal dose of a soluble salt, by ingestion, is about 10 g.

Copper, in small amounts, is indispensible to life and is not harmful. Relatively large doses (10 to 20 g) have an acute toxic action when taken orally. Inhalation of copper dust has been reported to cause changes in the gums and mucous membrane lining of the mouth. This is probably local action directly on the tissue rather than general toxicity.

Organic analysis performed on two surficial soil samples (consisting of one shale pit sample and one background sample), surface water samples and one sediment sample included a complete organic Priority Pollutant scan. Positively identified compounds with supporting QA/QC documentation include base/neutral semi-volatiles and a pesticide in surficial soil samples only. Di-n-butylphtalate was detected in concentrations of 240 ug/kg and 460 ug/kg for the shale pit and background surficial soil samples, respectively. Fluoranthene and bis (2-ethylhexyl) phthalate were detected in the shale pit surficial soil sample in concentrations of 97 ug/kg and 270 ug/kg, respectively. The pesticide compound 4,4-DDT was detected in the shale pit surficial soil sample in a concentration of 3.05 ug/kg. Due to the presence of some semi-volatiles, one pesticide, and two metals in on-site soils, the potential exists for on-site personnel to ingest or inhale contaminated particulate matter during soil disturbance activities.

TABLE 4-1
(continued)

D. SITE SAFETY WORK PLAN

PERIMETER ESTABLISHMENT: MAP/SKETCH ATTACHED No SITE SECURED? No

PERIMETER IDENTIFIED Yes ZONE(S) OF CONTAMINATION IDENTIFIED? No

PERSONNEL PROTECTION

LEVEL OF PROTECTION: C X D X

MODIFICATIONS: Level C is anticipated for all soil moving and fence hole boring activities to be conducted at the site and may be modified after preliminary ambient and personnel particulate monitoring for certain activities. Modified Level D is anticipated for certain activities in which there is minimal disturbance of the surface soil.

SURVEILLANCE EQUIPMENT AND MATERIALS: Photoionization Detector or Flame Ionization Detector, High Volume Pump samples and personal particulate samples monitors.

ACTION LEVELS:

PID or FID: If concentrations of organic vapors consistently exceed 5-10 ppm over background in the breathing zone, it may be necessary to upgrade respiratory protection.

Copper - TLV of 1.0 mg/m^3; recommended action level at boundary is 0.5 mg/m^3

Lead - TLV of 0.15 mg/m^3; recommended action level at boundary of 0.075 mg/m^3

TABLE 4-1
(continued)

Total Particulate - 11.19 mg/m^3 during installation of chain link fencing and placement of riprap stones.

- .94 mg/m^3 during seeding of devegetated areas

WORK AND SUPPORT ZONES:

Work and support zones will be established to contain potential contamination within the smallest area possible. The contractor will ensure that each employee has the proper personnel protective equipment for the exclusion zone (work area).

The exclusion zone includes all areas in which soils will be handled and surface areas adjacent to those areas. The exclusion zone will be delineated with red tape easily visible at waist height . Access into the exclusion zone will be controlled through the contamination reduction zone. This zone will be surrounded by yellow flagging.

The support zones will include the remaining areas of the job site, change rooms, lunch and break areas, operational direction and support facilities, including supplies, equipment storage and maintenance areas, will be located in this area.

The support zone will be clearly delineated with green tape and procedures will be implemented to prevent active or passive contamination from the work site. The function of the support zone includes:

i) An entry area for personnel, material and equipment to the Contamination Reduction Zone;

ii) An exit area for decontaminated personnel;

iii) The housing of site special services; and,

iv) A storage area for clean, safety and work equipment.

TABLE 4-1
(continued)

PERSONNEL DECONTAMINATION PROCEDURES: At the completion of each day's activities, disposable protective clothing will be discarded, outer gloves and rubber over-boots will be washed in soapy water and rinsed in clean water, and other protective clothing will be stored on-site for the next days use. Boots will be hung to dry after use. All respirators will be cleaned and properly maintained by the contractor at the end of each day according to a written respiratory program that complies with OSHA 1910.134. No personnel shall ever be permitted to leave site in their work clothes.

EQUIPMENT DECONTAMINATION PROCEDURES: All construction tools will be decontaminated before leaving the site using detergent and water wash. A separate area on site will be established for decontamination and steam cleaning of earth moving and fence hole boring equipment. (See Site Map included in Site Security and Erosion and Sedimentation Control Plan).

SPECIAL EQUIPMENT, FACILITIES, OR PROCEDURES: N/A

WORK LIMITATIONS (time of day, etc.): Daylight hours, Extreme weather conditions.

AMBULANCE: (Minor, Non-Life Threatening Medical Emergency): White Haven Ambulance Squad - (717) 443-8033

PARAMETIC UNIT: (Major, Life-Threatening Medical Emergency): Hazelton General Hospital Parametic Unit - (717) 455-7000

HOSPITAL EMERGENCY ROOM: Hazelton General Hospital - (717) 454-4357 Extension 232

POISON CONTROL CENTER: Telephone Hazelton General Hospital Emergency Room for Direct line to Danville Poison Control Center

POLICE: (State Police) (717) 459-3890

TABLE 4-1
(continued)

ORIGINAL (Red)

FIRE DEPARTMENT: Fearnots Fire Department (717) 636-2525

AIRPORT: Wilkes Barre-Scranton (717) 457-3445

EXPLOSIVES UNIT: State Police

WATER SUPPLY: To be supplied by Contractor
TELEPHONE: To be supplied by Contractor
RADIO: N/A
OTHER: N/A

CONTRACTOR CORPORATE SAFETY DIRECTOR:
CONTRACTOR SITE SAFETY OFFICER:
CONTRACTOR PROJECT MANAGER:
CONTRACTOR CONSTRUCTION LEADER:
EPA PROJECT COORDINATOR:

(Telephone numbers to be inserted by the contractor)

F. EMERGENCY ROUTES

HOSPITAL: From site take site access road either north or west to Rt. 940. Make a left onto 940 and proceed west-southwest approximately 10 miles to Rt. 309 (junction is approximately 1/2 mile past the town of Harleigh). Make left onto 309 and proceed south into city of Hazelton. Make a left onto Broad Street and proceed east approximately 1 mile to Hazelton General Hospital on right side of road.