ADA CONSULTANTS

PLAN TITLE/APPROVAL COVER SHEET

DECONTAMINATION PLAN FOR ENGELHARD CORPORATION
PAVEMENT AND SOILS AREAS SURROUNDING BUILDING G-1
1000 HARVARD AVENUE, CLEVELAND, OHIO

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1.0 GENERAL INFORMATION

This Decontamination Plan is prepared in accordance with the stipulations of the U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 3.65, "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR Parts 30, 40, and 70" (Reference 1-1).

1.1 Purpose

The purpose of this plan is to detail the services that will be provided by the contractor, to Engelhard, Inc. (Engelhard) in support of the decontamination of pavement and soil surrounding Building G-1 located at 1000 Harvard Avenue, Cleveland, Ohio. This plan includes an outline of the decontamination activities, a listing of the health and safety measures that will be in place during the decontamination activities, and a description of the planned Final Radiological Status Survey of the site.

1.2 Licensee Information

The Engelhard facility is not governed by a (NRC) Radioactive Materials License. However, this plan is written to comply with all applicable federal regulations as though the facility contained licensed radioactive material and the purpose of the decontamination activities is to terminate that license. Engelhard will store the waste until it is disposed of as Naturally Occurring Radioactive Material (NORM) waste.

1.3 Facility Description

The area to be decontaminated is the pavement and soil area surrounding Building G-1. Building G-1 is owned by Chevron Chemical Company and will be decommissioned by Chevron.

1.4 References

Reference 1-1 U.S. Nuclear Regulatory Commission Regulatory Guide 3.65, "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR Parts 30, 40, and 70," August, 1989.

2^ DESCRIPTION OF PLANNED DECONTAMINATION ACTIVITIES

Radiological assessments performed in Building G-1 and the immediate vicinity by Argonne National Laboratory identified the presence of normal uranium and its decay daughters on building surfaces and in soil in excess of radiological release criteria.

This Decontamination Plan outlines the methods for returning the pavement and soil surrounding Building G-1 to an acceptable condition for future use such that occupants will not be subjected to unacceptable risks from residual radioactivity. This Plan will safely remove radioactive and other materials that pose a hazard to human health and will prepare the property for subsequent use by removing contaminated pavement and excavating contaminated soil. Upon completion of the decontamination activities, the site will be suitable for use without radiological restriction.

A scoping survey has been performed on pavement and soil surrounding Building G-1 and the immediate vicinity by Argonne National Laboratory. This survey identified the presence of normal uranium (refined uranium which is neither enriched nor depleted in the ^{235}U isotope including its short half-life daughters - ^{234}Th and ^{234}Pa) on pavement and in soil in excess of values specified in Reference 2.5 Option - 30 pCi/g (it is assumed that normal uranium is no more hazardous that enriched uranium; therefore the limit of 30 pCi/g should be more than adequate to meet the exposure guidelines).

30 pCi/g unacceptable w/o further justification

? Not listed

No such reference

2.1 Decontamination Objectives, Tasks, and Schedule

2.1.1 Decontamination Objectives

The primary objectives of decontaminating the area surrounding Building G-1 are to reduce residual radioactive contamination on pavement to a level below the current release criteria (5,000 alpha dpm/100 cm^2 and 1,000 alpha dpm/100 cm^2 removable) and to reduce soil contamination to a level below the current guidelines (30 pCi/g).

Although an NRC license for the pavement and soil area is not involved, this Decontamination Plan is written as though the area was an NRC-licensed facility. The following radiological release criteria reflect this approach:

Residual Radioactive Surface Contamination

The following surface contamination limits were obtained from the NRC white paper entitled "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material" (Reference 2-1).

- 5,000 disintegrations per minute (dpm)/100 cm^2 fixed and removable alpha contamination averaged over an area no greater than 1 m^2,
- 15,000 dpm/100 cm^2 fixed and removable alpha contamination at any location, and
- 1,000 dpm/100 cm^2 removable alpha contamination at any location.

Residual Radioactivity, in Soil

A limit of 30 picocuries (pCi)/g of total uranium (^{234}U + ^{238}U) is allowed as residual radioactivity in soil, based upon guidance in "Disposal or Onsite Storage of Residual Thorium or Uranium from Past Operations" (Reference 2-2).

General Area Exposure Rate Levels

The guideline value for general area exposure rate measurements will be 5 microrem (μrem)/hr above background at 1 m from the surface being measured. This guideline is to be applied as an average over a maximum area of 100 m^2, provided no discreet area of residual radioactivity results in levels exceeding 10 μrem/hr above background.

2.1.2 Decontamination Tasks

Table 2-1 lists the major decontamination tasks described below.

Prior to mobilizing on-site, the contractor will prepare, review, and approve the following documents: a Site Safety and Health Plan, a Radiological Characterization Survey Plan for pavement and soil surrounding Building G-1, and specific work instructions for performing decontamination tasks. These documents will also be reviewed and approved by Engelhard before the contractor mobilizes to the site.

Upon mobilization, the contractor will set up mobile office trailers, break/lunch/meeting trailers, change trailers, storage trailers, sanitation facilities, communications provisions, and utilities. After setting up basic facilities and services, the contractor will conduct site-specific training and orientation.

Radiologically Controlled Areas (RCAs) will be established to facilitate prop access and egress controls before other activities in the area surrounding Buildi G-1 commence. A gridding team will mark a one meter by one meter referen grid system on all the paved and soil areas. An initial grid will be establish on all pavement surrounding the G-1 Building and outward to a distance of meters.

Teams of Radiological Control Technicians will begin performing a detailed Radiological Characterization Survey as the gridding team progresses. The Radiological Characterization Survey will locate all surface areas that are contaminated with radionuclides in excess of guideline values. The survey will commence at the outer walls of G-1 Building and continue outward until a perimeter of one-meter grid blocks that do not read significantly above background have been established. If such has not occurred before a distance of 50 meters is reached, additional grids will be established. The Radiological Characterization Survey will be performed in a manner such that the results can be used in the Final Radiological Status Survey for areas in which no contamination is found. Results of the Radiological Characterization Survey will be reported to the NRC upon completion.

The Radiological Characterization Survey Plan will include the data quality objectives for the survey, as well as the quality assurance and quality control measures that will be implemented. Additionally, the Radiological Characterization Survey Plan will include any samples for hazardous materials regulated by RCRA.

Decontamination of pavement surface will begin as soon as enough characterization data are accumulated to support the formulation of an efficient remediation plan. Pneumatic needle scalers and floor scrubbers will be employed for decontamination. Engelhard will require the contractor to use equipment fitted with integral shrouds for attaching High Efficiency Particulate Air (HEPA) filters. Since the equipment will be fitted with HEPA filters, it will not be necessary to construct containment enclosures for contamination control.

Preparation of the Final Radiological Status Survey Plan will commence during the Radiological Characterization Survey. This plan will be prepared using guidance from NUREG/CR 5249, "Manual for Conducting Radiological Surveys in Support of License Termination" (Reference 2-3). A Final Radiological Status Survey Plan will be written for the paved areas. The Plan will include the data quality objectives for the survey, as well as the quality assurance and quality control measures that will be implemented. During the decontamination efforts, the Final Radiological Status Survey Plan will be submitted to the NRC. Upon NRC concurrence with the Final Radiological Status Survey Plan, the Final Radiological Status Survey will be performed to demonstrate that all paved areas have been decontaminated such that no radioactive contamination exists in excess of guideline values. A Final Radiological Status Survey Report will be prepared and submitted to the NRC upon completion of the Final Radiological Status Survey.

The NRC may perform a Confirmatory Survey of the paved areas surrounding Building G-1 after reviewing the Final Radiological Status Survey results. The

paved area surrounding Building G-1 will be declared acceptable for unrestricted use following successful completion of the Confirmatory Survey. If no Confirmatory Survey is performed, the paved areas may be declared acceptable for unrestricted use after the review of the Final Radiological Status Survey results.

A contractor will remove all concrete and asphalt surrounding Building G-1 once it has been declared acceptable for unrestricted use. Radiological Control Technicians will monitor the activities of the demolition contractor to ensure that no unexpected radioactive contamination is uncovered during the removal of concrete and asphalt. The paving rubble that was exposed to potentially contaminated soil will be surveyed for radioactive contamination before being transported from the site.

After all pavement has been removed, the soil surrounding Building G-1 will undergo a Radiological Characterization Survey. Surface radiation scans will be performed, and surface and subsurface soil samples will be obtained and analyzed. Samples will be collected in two-inch increments of depth to a depth of six inches and in six-inch increments thereafter. The results will be presented in a Radiological Characterization Survey Report, which will be the basis for a work instruction governing the excavation of contaminated soil.

Excavations will be performed with bulldozers and backhoe excavators. The actual depth of excavation is not known at this time.

A Final Radiological Status Survey Plan will be written for the soil areas. This plan will include the data quality objectives for the survey, as well as the quality assurance and quality control measures that will be implemented.

Following excavation, a Final Radiological Status Survey of the remediated soil area will be performed. When the survey is complete, a Final Radiological Status Survey Report will be prepared and submitted to the NRC.

The NRC may perform a Confirmatory Survey of the remediated soil areas after reviewing the results of the Final Radiological Status Survey. The remediated area will be declared acceptable for unrestricted use following successful completion of the Confirmatory Survey. If no Confirmatory Survey is performed, the soil area may be declared acceptable for unrestricted use after the review of the Final Radiological Status Survey results.

When the NRC is satisfied that the entire site has been adequately remediated, any packaged radioactive waste remaining on-site will be disposed of and contractor personnel and equipment will be demobilized. The contractor will submit a Project Final Report shortly after demobilization.

Building G-1 decontamination tasks will be performed in accordance with the following documents:

- Decontamination Plan,
- Site Specific Health and Safety Plan,
- Radiological Characterization Plans for the paved and surface/subsurface soil areas surrounding Building G-1,
- Final Radiological Status Survey Plan for the excavated soil areas,

The contractor will prepare specific work instructions for project activities.

2.1.3 Decontamination Schedule

Figure 2-1 contains a general schedule of the decontamination tasks. The duration of each activity is shown in relation to other tasks since estimated durations for individual activities have not yet been determined.

2.2 Decontamination Organization and Responsibilities

The contractor will assemble adequate staffing to discharge the functions described. ***Job titles are generic; however, at the time the contract between Engelhard and the contractor is finalized, specific identities will be delineated. With the exception of the Engelhard Project Manager, all job titles outlined below refer to contractor personnel.*** Sections 2.2.1 through 2.2.4 detail the specific responsibilities of key personnel.

2.2.1 Engelhard Project Manager

The Engelhard Project Manager will function as the Engelhard representative for the decontamination project and will provide oversight for all project activities. The Engelhard Project Manager will coordinate cost and schedule reporting requirements with the Project Manager.

2.2.2 Project Manager

The Project Manager will maintain overall responsibility for the performance of project operations and will be on-site for the duration of the project. The Project Manager will report to the Engelhard Project Manager for all project related matters. The Project Manager will control all on-site professional, technical, and labor forces to ensure the adequate and timely completion of planned project tasks. The Project Manager will ensure the following:

- Maintenance of a single point of contact for Engelhard representatives on all project related activities (schedule, cost, safety, and technical matters, including the coordination of any required communications, meetings, or updates);

- Provision of sufficient staffing to support the scheduled completion of project tasks;

- Coordination of the project staff to assure that adequate safety and radiological controls plans and procedures are enforced and that project operations are conducted efficiently and in compliance with all appropriate regulatory requirements;

- Coordination of appropriate procurement and subcontract activities in support of project goals and schedules;

- Continuous monitoring of project status and performance and the initiation of any required corrective actions or reassignment of project personnel;

- Accurate reporting to Engelhard representatives of actual and projected project costs and up-to-date schedule status;

- Resolution of any cost or schedule related discrepancies or questions;

- Compliance with all required procedures, operating requirements, permits or restrictions; and

- Maintenance of all appropriate project data, documents, and records and the compilation of a final report that accurately reflects the work performed.

2.2.3 On-site Health Physicist

The On-site Health Physicist will participate in project planning and final reporting activities to ensure regulatory compliance, the adequacy of plans and procedures, and the appropriate development of project specific plans and work instructions. The On-site Health Physicist will also be responsible for assuring radiological safety in the design of processes and equipment for the decontamination activities. The On-site Health Physicist will be responsible for ensuring that radiation exposure to personnel and the environment are maintained As Low As Reasonably Achievable (ALARA) and are at all times within regulatory and administrative limits. The On-site Health Physicist will report administratively to the Project Manager and will perform the following duties:

- Act as the Authorized User and Radiation Safety Officer for this implementation of the Radioactive Materials License;

- Manage the radiological information obtained during the Radiological Characterization Surveys and Final Radiological Status Surveys, including performing all calculations to show compliance with project guidelines;

- Prepare the Radiological Characterization Survey Reports and Final Radiological Status Survey Reports;

- Oversee the bioassay program to ensure proper monitoring of internal and external exposures, and assisting in the training of individuals in the biological effects of radiation, as needed;

- Assist the Radiological Control Technicians in the performance of field surveys;

- Prepare and/or review project specific plans, procedures, and work instructions to ensure compliance with applicable guidelines, regulations, and ALARA policies;

- Provide radiological calculations for dose assessment, ALARA, and safety considerations.

- Perform site characterizations, develop the Site Safety and Health Plan, implementing the specific provisions of that plan, and ensure that all site employees, subcontractors, and visitors understand the requirements of the plan;

- Function as the Site Safety and Health Supervisor with responsibility for implementing the Site Safety and Health Plan;

- Assist the Project Manager and other project personnel in the preparation of work plans and procedures;

- Conduct appropriate surveys and inspections while ensuring that radiological and industrial safety hazards are appropriately identified and that necessary precautions are in place prior to the initiation of work activities;

- Specify appropriate safety and radiological control precautions for work permits and work procedures;

- Direct the day-to-day activities of radiological control personnel in the performance of project operations and the selection of instrumentation and

decontamination techniques appropriate for protecting personnel and reducing exposures;

- Monitor work in progress to ensure compliance with project plans and procedures, regulatory requirements, and good radiological work practices;

- Prevent the performance of work activities that may jeopardize the safety of personnel, violate approved plans, procedures, or practices, or that which could result in the release of contamination;

- Review and maintain all appropriate project personnel and radiological records, including survey data, training documentation, certification and qualification records, release survey records, permits, licenses, and instrumentation records;

- Maintain radiological supplies and instrument inventories; and

- Inspect and assist in the preparation of waste materials for shipment, including appropriate radiological survey and assay activities.

2.2.4 Project Supervisor

The Project Supervisor will report directly to the Project Manager and will be responsible for the day-to-day activities of the project. The Project Supervisor will also be responsible for ensuring that personnel are provided the correct health and safety resources as required. The Project Supervisor will coordinate of daily activities with the On-site Health Physicist to ensure proper planning, organizing, directing, and controlling of project activities in a manner that does not conflict with the safety and health of employees performing the work activities. Specifically, the Project Supervisor will ensure the safety and health of employees during all project activities and will allocate the necessary resources to ensure that required safety and health activities are carried out. The Project Supervisor will be responsible for enforcing all applicable plans, procedures, and instructions affecting safety and health. The Project Supervisor is further responsible for the day-to-day oversight of all subcontractor activities to ensure that those activities are being performed in a manner consistent with all health and safety requirements.

2.3 Training

The training program will meet the following goals:

- To meet the applicable training requirements specified by the NRC, Occupational Safety and Health Administration (OSHA), and Environmental Protection Agency;

- To ensure that all personnel are knowledgeable in the requirements of their jobs, are competent in the operation of equipment they use, safe in their work practices, and understand all risks associated with their work environment;

- To ensure that personnel meet all requirements specified by Engelhard;

- To ensure that personnel maintain a high level of competency in all qualified areas; and

- To indoctrinate new employees to ensure a full understanding of all requirements expected of them.

Any site-specific training requirements will be identified the Project Manager. All contractor and subcontractor personnel working on-site will be trained in accordance with the applicable requirements of 29 CFR 1910.120 before participating in the survey or decontaminating activities. Twenty-four hours of on-site training will be conducted upon mobilization of project personnel. Table 2-2 lists the specific training requirements for this project that have been identified and will be covered during this twenty-four hour training session.

Site-specific training records will be maintained by the On-site Health Physicist.

2.4 References

Reference 2-1 "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," NRC, April, 1993.

Reference 2-2 "Disposal or Onsite Storage of Residual Thorium or Uranium from Past Operations," NRC Branch Technical Position, October, 1981.

Reference 2-3 "Manual for Conducting Radiological Surveys in Support of License Termination," NUREG/CR 5849, June, 1992.

DECONTAMINATION TASKS
Table 2-1

(1) Procedure preparation, review, and approval

(2) Procurement of equipment/materials

(3) Mobilize

(4) Perform site set-up and conduct site training/orientation.

(5) Perform Characterization Survey of soil in the immediate vicinity of Building G-1

(6) Decontaminate pavement

(7) Remove pavement

(8) Excavate contaminated soil

(9) Perform Final Status Survey of remediated soil in the immediate vicinity of Building G-1

(10) Prepare and submit Final Status Survey Report for remediated soil area

(11) Support confirmatory survey of remediated soil area as necessary

(12) Dispose of remaining waste materials

(13) Demobilize remaining equipment and personnel

(14) Prepare Project Final Report

FIGURE 2-1. DECONTAMINATION SCHEDULE

Procedure preparation, review and approval	
Procurement of equipment and materials	
Mobilization	
Site setup, site training and orientation	
Removal of debris from surfaces to be surveyed	
Outline of reference grid on pavement to be surveyed	
Background survey	
Characterization survey of payment and surface soil	
Decontamination of pavement and surface soil where radioactive contamination exceeds radiological release limits	
Final Radiological Status Survey Plan	
Final Radiological Status Survey of Pavement and Surface Soil	
Preparation of Pavement and Surface Soil Radiological Status Report and submit to NRC	
Remove pavement	
Radioloigcal Characterization of soil below removed pavement	
Excavation of contaminated soil	
Final Radiological Status Furvey of remediated soil areas	
Preparation of Final Radiological Status Survey Report for the remediated soil areas and submit to NRC	
Confirmatory Survey of remediated soil areas as necessary	
Disposal of NORM waste	
Project Final Report	

TRAINING REQUIREMENTS
Table 2-2

(1) Requirements of this Decontamination Plan and guidance referenced by the Plan

(2) Requirements of the Site Safety and Health Plan and guidance referenced by that Plan

(3) Hazard communication training required by 29 CFR 1910.1200

(4) Lock-out/tagout training required by 29 CFR 1910.134

(5) Noise abatement training required by 29 CFR 1910.95

(6) Respiratory protection program training required by 29 CFR 1910.134

(7) Safety signs and tags training required by 29 CFR 1910.145

(8) Fork lift operations training required by 29 CFR 1910.178

(9) Fire extinguisher training required by 29 CFR 1910.157

(10) Fire emergency training required by 29 CFR 1910.38

(11) Basic radiation worker training required by 29 CFR 1910.96; 10 CFR 19; and 10 CFR 20

3.0 DESCRIPTION OF METHODS USED FOR PROTECTION OF OCCUPATIONAL AND PUBLIC HEALTH AND SAFETY

3.1 Radiological History Information of Facility

Argonne National Laboratory completed a radiological assessments in 1979 at the Building G-1 site.

3.1.1 Argonne National Laboratory Assessment

A DOE document entitled "Formerly Utilized MED/AEC Sites Remedial Action Program Radiological Survey of the Harshaw Chemical Company, Cleveland, Ohio" (Reference 3-1) is a report of a radiological assessment of what was then the Harshaw Chemical Company facility. This assessment was performed by Argonne National Laboratory (ANL) in several different campaigns from 1976 through 1979. The radiological condition of the entire facility was assessed during the course of those campaigns.

Reference 3-1 provides the best available historical information about Building G-1 and the surrounding property.

During the Manhattan Engineering District (MED)/Atomic Energy Commission (AEC) era, Harshaw processed large quantities of normal uranium to produce both oxide and fluoride compounds. Only a few of the many Harshaw Complex buildings were actually involved with the use of radioactive materials. The principle building involved with the uranium processing activities was the refinery building - identified as Plant C (Building G-1). Essentially all of the equipment used in Building G-1 operations was government-owned. Building G-1 was used primarily for the refining of yellowcake into uranium orange oxide, although the plant was capable of reducing orange oxide (UO_3) to brown oxide (UO_2), fluorination of brown oxide to green salt (UF_4), and fluorination of green salt to hexafluoride (UF_6). This work was done under contract to MED and its successor, AEC.

Records indicate that at the time the AEC contract was terminated, the facility was decontaminated by Harshaw and released from AEC control in 1960. However, a search of AEC records indicates that documentation is insufficient to determine whether the decontamination work was adequate by the then-current guidelines. Hence, the ANL radiological assessment of the site was initiated in 1976. The entire grounds and all buildings were surveyed using surface survey instruments to detect surface contamination and radiation exposure ratemeters to determine general radiation levels.

Alpha and beta/gamma survey results on pavement and soil area surrounding the G-1 Building ranged up to 1,000 dpm/100 cm^2 and 400,000 dpm/100 cm^2

respectively. Several soil samples were taken from around the site some of which revealed concentrations above the current release criterion (30 pCi/g). Based on review of the ANL assessment, Engelhard determined that levels of contamination at the site were above current guidelines for release of the site for unrestricted use.

The information obtained from the ANL assessment is adequate to define the potential contaminants and to define the general extent of residual radioactive contamination.

3.2 Ensuring that Occupational Radiation Exposures are As Low As Reasonably Achievable

As a part of this plan Engelhard will make every reasonable effort to maintain radiation exposures As Low As Reasonably Achievable (ALARA). The implementation of the Engelhard ALARA policy is the responsibility of the ALARA Committee. This Committee consists of the Engelhard Project Manager, the Project Manager and the On-site Health Physicist. The Engelhard Project Manager serves as Chairperson of the Committee; any two of the members can act as the committee.

At least one member of the Committee is required to review procedures, plans, or work instructions involving radiation safety. Designs or design changes for facilities or equipment that may cause radiation exposure are reviewed by a member of the Committee prior to fabrication, construction, or procurement. The design is approved by a member of the Committee before the facility or equipment is released for use.

3.2.1 Project Manager

The Project Manager is responsible for ensuring that criteria affecting potential radiation exposure and contamination are considered in the design, operation, and construction of facilities and equipment. Other Project Manager responsibilities in regard to ALARA include:

- ensuring adherence to the radiation protection program by all personnel assigned to the project; and

- ensuring that ALARA reviews are performed for procedures, programs, policies, new equipment, or facility designs and equipment changes.

3.2.2 On-site Health Physicist

The On-site Health Physicist is responsible for implementation of the radiation protection program for decontaminating the area surrounding Building G-1, the radiation protection program and those procedures written specifically for decontaminating the areas that have radiological requirements. As a member of

the ALARA Review Committee, the On-site Health Physicist is responsible for the following:

- participating in design reviews for procedures, facilities, and equipment that can affect potential radiation exposures;
- prescribing goals and objectives to be achieved in the area of radiological protection;
- reviewing data and information obtained from radiological surveys and monitoring activities to determine compliance with ALARA policy;
- developing methods, plans, procedures, and work instructions to keep occupational exposures ALARA;
- reviewing training programs related to work in radiation areas or involving radioactive materials;
- reviewing exposure records to develop methods to reduce exposures;
- reviewing the supervision, training, and qualifications of the radiological controls staff.
- ensuring adequate radiation protection coverage for all personnel, including visitors;
- supervising, training, and documenting the training of the radiation protection staff;
- identifying sources or operations having the potential for causing significant exposures to ionizing radiation;
- implementing the radiation protection and exposure control programs;
- reviewing draft procedures and proposed changes in equipment to ensure that provisions are included for maintaining exposures ALARA; and
- overseeing the collection, analysis, and evaluation of data and information obtained from radiological surveys or radiological monitoring activities used in determining hazards to occupational or public health.

3.2.3 Individual Employees

Each individual involved with the project is subject to the Engelhard ALARA and Health Physics practices.

Any employee may attend an ALARA Review Committee meeting. Such attendance shall be arranged by notifying the Chairperson or any member of the Committee to assure adequate time and company representation is allotted for addressing the employee's suggestions, questions, or problems.

3.3 Health Physics Program

3.3.1 Administrative Occupational Exposure Limits

Occupational exposures to ionizing radiation for project personnel will be administratively limited to 50% of the applicable regulatory limits.

3.3.2 Dosimetry

Dosimetry methods will be applied by the On-site Health Physicist to all project personnel who require access to Radiologically Controlled Areas (RCAs).

Visitors to the project site will be issued dosimetry as deemed appropriate by the On-site Health Physicist after considering radiation and contamination levels to be encountered by the visitor, the duration of the visit, and the nature of the visit. A visitor may be exempted from the requirements of the dosimetry, bioassay, and training programs at the discretion of the On-site Health Physicist provided that the visit is expected to be a one-time occurrence and the visitor is escorted by an individual who has proper dosimetry, received the required training for access to the site, and is familiar with site operations.

The primary dosimeter to be employed is the thermoluminescent dosimeter (TLD). TLDs will be processed quarterly. The On-site Health Physicist will maintain records of exposure to ionizing radiation for those individuals wearing dosimetry.

Urine bioassay samples will be collected from all personnel who participate in the project dosimetry program. A baseline sample will be collected from appropriate project personnel upon mobilization, and an exit sample will be collected upon demobilization. Other samples will be collected as deemed necessary by the On-site Health Physicist and the Project Manager.

Urine bioassay samples will be analyzed by a laboratory selected from the contractors list of approved vendors. It is the responsibility of the On-site Health Physicist to interpret the bioassay data and perform any dosimetry calculations that may be necessary.

Whole-body counting for determining personnel uptake of radionuclides is not expected to be routinely employed during the pavement/soil decontamination.

Whole-body counting may be employed as prescribed by the On-site Health Physicist for extenuating circumstances.

3.3.3 Radiation Work Permits

The On-site Health Physicist shall issue a Radiation Work Permit (RWP) as necessary for any work in a Radiologically Controlled Area. In cases where no written procedures exist for an operation, a RWP may be issued with sufficient specific instructions to allow the RWP to take the place of written procedures. The RWP is a tool used to control personnel exposures to ionizing radiation and radioactive material by establishing minimum requirements for dosimetry, personnel protective equipment, etc., for work to be performed and by providing specific information about radiological and other hazards in the area to be accessed.

A RWP may be initiated by any individual responsible for a given operation or activity to be performed. The On-site Health Physicist reviews RWPs, makes any necessary changes, then approves the RWP for use.

Personnel performing the work covered by a RWP participate in a pre-job briefing in which the requirements of the RWP are presented by a responsible individual and discussed by the work group. Personnel attending the briefing sign the RWP before entering the Radiologically Controlled Area to indicate that they understand the requirements of the RWP.

A RWP is terminated by the On-site Health Physicist when radiological conditions change, the scope of work changes, or a specified period of time has elapsed. Since RWPs are task-specific, it is likely that several RWPs will be in effect at any given time during the course of the pavement/soil decontamination.

3.3.4 Controlled Access Area Entry Requirements

Controlled Access Areas are established for the purpose of controlling radiation exposures to site workers, visitors, and the general public, and to control the spread of contamination.

Signs at points of entry to the area surrounding Building G-1 will instruct visitors and other individuals unfamiliar with decontaminating operations to register at the contractor project office. Upon reporting to contractor personnel in the office trailer, the individual can be escorted to any area to which he/she may need access. Subcontractors and other personnel who will perform work on the site will be given orientation and training that will make them aware of areas that they may access and the requirements for entering such areas.

RCAs include Controlled Surface Contamination Areas (CSCAs), Radiation Areas, Airborne Radioactivity Areas, and Radioactive Material Storage Areas.

It is anticipated that there will be no High Radiation Areas nor Very High Radiation Areas posted during the course of the decontamination activities. RCAs will be posted with radiation warning signs that will normally be suspended from yellow and magenta colored rope or ribbon. Some of the requirements for entering an RCA are listed on the posted radiological warning signs applicable to a given area. The remainder of the requirements for entering a given RCA will be contained in the active RWPs.

There will be no eating, drinking, smoking, chewing, or application of cosmetics within RCAs. The need for respiratory protection shall be evaluated and documented for all personnel entering an Airborne Radioactivity Area.

3.3.5 Clean Area Requirements

High traffic areas outside of RCAs, especially paths to and from RCA accesses, restrooms, break/lunch rooms, and field office spaces, will be frequently surveyed for radioactive surface contamination to ensure that these areas are maintained essentially free of radioactive contamination above background levels. The frequency of these routine surveys will be determined by the On-Site Health Physicist. Clean areas shall be promptly decontaminated or controlled as RCAs if surface contamination levels are found to exceed guideline values.

The potential for an internal uptake of radioactive material remains relatively small based on Reference 3-1. High Efficiency Particulate Air (HEPA) filtered exhaust ventilation shall be evaluated and used inside all containments in which airborne radionuclides may present a hazard. If air sampling indicates the need for respiratory protection, full-face negative pressure respirators with HEPA filters shall be the first choice. If air samples indicate airborne contamination levels are sufficiently high, air supplied respirators shall be used to work in the affected areas.

NORM waste will be stored in strong, tight containers in designated Radioactive Material Storage Areas after it is removed from an RCA. Radioactively contaminated tools, equipment, and other materials will be marked with yellow and magenta colored tape or equivalent and will be stored in RCAs until decontaminated or otherwise disposed of as NORM waste. Radioactive materials transported through uncontrolled areas will be wrapped or packaged as necessary to prevent the spread of contamination while being moved through these uncontrolled areas.

Packaging, labeling, manifesting, and transportation of radioactive waste will be performed in accordance DOT regulations.

Spread of contamination will be minimized by:

- posting areas with removable contamination in excess of guideline values as CSCAs;

- requiring personnel who enter CSCAs to wear anti-contamination clothing specified by the applicable RWP;

- ensuring that personnel remove contaminated clothing properly and place used anticontamination clothing in designated receptacles upon exiting a CSCA;

- monitoring personnel, materials, and equipment for the presence of radioactive contamination upon exiting or removal from a CSCA, and decontaminating personnel or equipment, or controlling items as radioactive material, as appropriate;

- performing contamination surveys frequently inside CSCAs, along the perimeters of CSCAs, and at the exits of CSCAs; and

- using HEPA-filtered ventilation equipment and HEPA-filtered vacuum cleaners for operations likely to cause significant airborne radioactive contamination or to spread contaminated dusts.

3.3.6 Airborne Monitoring

Airborne particulate monitoring is performed to:

- demonstrate compliance with the intake limits for workers specified in 10 CFR 20;

- determine whether precautionary measures such as process or engineering controls, increased surveillance, limitation of working times, provision of respiratory protective equipment, or if other precautions should be considered; and

- determine whether exposures to radioactive materials are being maintained ALARA.

The system used for monitoring airborne radioactivity shall have a Minimum Detectable Activity (MDA) not greater than 10% of the applicable Derived Air Concentration (DAC).

Airborne particulate surveys shall be performed with portable air samplers as follows:

- at least every four hours and when airborne radioactivity is expected to be maximized;

- in RCAs when radiological work is performed;

- during radiological work that has been known to cause or is expected to cause airborne radioactivity;

- whenever airborne radioactivity levels above the regulatory or administrative limits are suspected; and

- in occupied areas where removable contamination exceeds 10,000 dpm/100 cm^2 beta/gamma.

Personnel air samplers (lapel samplers) will be employed whenever general area air samples indicate levels greater than 0.1 DAC (or when breathing zone grab samples indicate levels greater than 0.1 DAC) to more accurately measure actual concentrations of airborne radioactivity in the breathing zones.

Portable air particulate sampling equipment will be immediately available during abnormal conditions. Site specific airborne particulate surveys will be performed as identified in the project ALARA briefing.

3.3.7 Respiratory Protection Program

Respiratory protection requirements will be specified in the applicable RWP. The On-site Health Physicist will specify appropriate respiratory protective equipment based upon measurement of actual airborne radioactive contamination, suspicion/likelihood of airborne contamination in excess of applicable limits.

Prior to using respiratory protective equipment, employees will be physically examined to determine their fitness for using respiratory equipment and will be fit tested to ensure that a proper seal can be obtained between the individual's face and the respirator selected. These physical examinations will be updated annually.

Personnel required to wear respiratory protective equipment will be trained in the proper use and care of the respiratory protective equipment to be employed. This training will contain the following minimum elements:

- when and why respiratory protection is required;

- the operating principles of the selected respiratory protective equipment and its limitations;

- procedures to ensure proper fit of the respirator;
- proper care and maintenance of the selected respirator; and
- emergency actions to be carried out by individuals who experience respirator failure or malfunction, physical or emotional distress, procedural or communication failure, significant deterioration of operating conditions, and any other condition that might require relief.

3.3.8 Personal Protective Clothing Requirements

The On-site Health Physicist will determine the appropriate requirements for personal protective clothing for a given operation or activity and will include these requirements on the applicable RWP.

When working in RCAs with low levels of removable contamination, an ensemble of personal protective clothing consisting of as few items as shoe covers and rubber gloves may be adequate to protect against contamination of personnel. In such cases, precautions should be observed to prevent contaminating personal clothing.

A full set of personal protective clothing will be worn when working in RCAs with high levels of removable contamination, such as $>1,000$ dpm/100 cm^2 alpha or beta/gamma.

A double set of personal protective clothing will be worn when working in RCAs with very high levels of removable contamination, such as $>50,000$ dpm/100 cm^2 alpha or beta/gamma. A double set of anti-contamination clothing decreases the likelihood of radioactive contamination penetrating clothing material during work and helps minimize the possibility of spreading contamination.

It is anticipated that disposable personal protective clothing will be employed during the decontamination of the area surrounding Building G-1. Soiled disposable clothing will be packaged into steel drums, or other appropriate containers, so that it can be efficiently volume-reduced.

The use of launderable anti-contamination clothing will also be considered. If selected, launderable anti-contamination clothing will either be laundered on-site or processed regularly by an off-site vendor.

3.3.9 Quality Assurance

During the course of the project, one or more audits of project activities and records will be performed by the Engelhard Project Manager. Results of audit findings will be addressed by the Project Manager.

Calibration of all portable radiological instruments will be performed semi-annually, or more frequently if specified by the instrument operating manual, and after repairs or maintenance that could have invalidated the instrument's current calibration. The On-site Health Physicist will determine whether or not a given instrument requires calibration more frequently than semi-annually. Radiological field survey equipment and laboratory analysis equipment shall be calibrated by qualified personnel using standards traceable to the National Institute of Standards and Technology (NIST).

Portable survey instruments, counter-scalers, and air sampling equipment will have a current calibration prior to use. The On-site Health Physicist is responsible for ensuring that all such equipment used maintains a current calibration label and that records of the current calibration are on file. In addition to records of calibration, the On-site Health Physicist will maintain a copy of the operating manual provided by the manufacturer for each type of instrument in use at the project site.

3.4 Radioactive Waste Management

Radioactively contaminated paving material and soil will be packaged in steel drums, steel boxes or heavy-duty fabric bags. Soiled protective clothing will be packaged in steel drums to facilitate volume reduction.

All NORM waste from the area surrounding Building G-1 is expected to be NORM, Class A-Unstable waste. It is not anticipated that any mixed waste will be generated during the course of decontaminating the area surrounding Building G-1.

In the event that a quantity of mixed waste is discovered around Building G-1, the Site Safety and Health Plan will be revised to include provisions for handling the waste; mixed waste will be segregated from other radioactive waste containers to simplify management of the waste.

Packaged radioactive waste awaiting disposal will be stored in a segregated area within the Engelhard facility. The exact location for the temporary storage area has not yet been determined. The area selected will be relatively free of radioactive contamination (below guideline values) and will be out of the way of planned decontamination activities.

Gamma radiation levels associated with the stored waste should not be more than 5 millirem (mrem)/hr above background. Appropriate dosimetry will be required for access within the radioactive materials storage area.

The area selected for temporary storage of radioactive waste will be posted with signs warning that the area is a radioactive material storage area. The warning signs will state requirements for entering the posted area.

Packaging, labeling, manifesting, and transportation of radioactive waste will be performed in accordance with DOT regulations. A disposal facility will be selected for receipt of radioactive waste generated from decontamination of the area surrounding Building G-1.

3.5 Site Safety and Health Plan

A Site Safety and Health Plan will be prepared before mobilization of the contractor project team. The purpose of the Site Safety and Health Plan is to establish methods of protecting employees and the public from hazards associated with the decontamination of the area surrounding Building G-1.

One week after on-site work starts, the Site Safety and Health Plan will be reviewed and revised as necessary to contain provisions for protection against unanticipated project hazards. Other changes to the Site Safety and Health Plan will be made throughout the life of the project as circumstances dictate.

The Site Safety and Health Plan will identify the following elements:

- A safety and health risk or hazard analysis for each operation identified in this Decontamination Plan;
- Employee training to ensure compliance with 29 CFR 1910.120 and any additional site requirements;
- Personal protective equipment to be used by employees for each operation;
- Medical surveillance requirements;
- Frequency and types of air monitoring, personnel monitoring, environmental sampling techniques, and instrumentation to be employed, including requirements for maintenance and calibration of sampling equipment;
- Site control measures;
- Decontamination procedures;
- Emergency response plan for safe and effective responses to emergencies; and
- Spill containment.

3.6 Contractor Personnel

All personnel involved in the decontamination activities will meet the requirements of the project-specific Site Safety and Health Plan, which include applicable requirements from the ALARA Program, Health Physics Program, Industrial Health and Safety Program, Training Program, and Quality Assurance Program.

3.7 References

Reference 3-1 "Formerly Utilized MED/AEC Sites Remedial Action Program - Radiological Survey of the Harshaw Chemical Company, Cleveland, Ohio," DOE/EV-005/48, April, 1984.

Reference 3-2 "Manual for Conducting Radiological Surveys in Support of License Termination," NUREG/CR 5849, June, 1992.

Reference 3-3 Engelhard Corporation Procedures for the Packing, Shipment and Disposal of NORM Waste, 1994.

4.0 FINAL RADIOLOGICAL STATUS SURVEYS

The purpose of the Final Radiological Status Surveys is to demonstrate that the radiological conditions of the area surrounding Building G-1 and its underlying soil satisfy the guidelines approved for use (Section 2.1.1 of this Decontamination Plan), and that the site should, therefore, be released from restrictions for future use without the need for radiological controls. These surveys will be performed with guidance from NUREG/CR 5849, "Manual for Conducting Radiological Surveys in Support of License Termination," (Reference 4-1). The specific objectives of the Final Radiological Status Surveys are to demonstrate the following:

Residual Surface Activity of Building Surfaces and Structures

- Average surface contamination levels for each survey unit are within the authorized guideline values;
- Small areas of residual activity (hot spots) do not exceed the authorized guideline value for maximum residual surface activity;
- Reasonable efforts have been made to clean up removable activity, and remaining removable activity does not exceed the authorized guideline values; and
- Average exposure rates resulting from residual activity are less than 5 μrem/hr above background and no discrete point exceeds 10 μrem/hr above background (exposure levels are measured at 1 m from floor and lower wall surfaces and are averaged over areas not to exceed 10 m^2).

Volume Activity of Soil

- Average concentrations of normal uranium are within the authorized guideline value (soil radionuclide concentrations are averaged over a maximum area of 100 m^2);
- Reasonable efforts have been made to identify and remove areas of elevated soil activity that may exceed the guideline value by greater than a factor of (100/A) where A is the area (in m^2) of the elevated activity; and
- Exposure rates resulting from residual activity are less than 5 μrem/hr above background with maximum exposure rates over any discrete area not to exceed 10 μrem/hr (exposure levels are measured at 1 m from the surface of the soil and are averaged over areas not to exceed 100 m^2).

The radiological conditions described above will be demonstrated at a 95% confidence level for each survey unit as a whole.

The number of samples collected per survey unit will be stratified based upon the potential for residual radioactivity. Contamination potential will be based upon a review of the results of the Radiological Characterization Survey and surveys taken during decontamination operations.

4.1 Background Determinations

Background values for use in comparing actual measurements of the area surrounding Building G-1 radiological conditions to guideline values will be determined during the Radiological Characterization Survey. Measurements determining background values will be taken in areas unaffected by radiological work at the site.

4.2 Area Classification

For purposes of establishing the sampling and measurement frequency and pattern, the area surrounding Building G-1 will be divided into Affected and Unaffected areas. The bases for these classifications are:

Affected Areas - Areas that have potential radioactive contamination (based on plant operating history) or known radioactive contamination (based on actual radiological surveys).

Unaffected Areas - All areas not classified as Affected Areas. These areas are not expected to contain residual radioactivity based upon survey information. These are areas where characterization and decontamination surveys detected no residual activity in excess of guideline values.

4.3 Reference Grid System

A reference grid system will already have been established during the Radiological Characterization Survey. This grid system will also be used for the Final Radiological Status Survey. Portions of the grid system will have to be re-established as a result of decontamination activities that destroyed grid markings on original surfaces. Using the reference grid system established for the Radiological Characterization Survey saves the time that would be spent marking off a new grid scheme.

The area surrounding Building G-1 shall be subdivided into many individual survey units having common contamination potential so that the radiological condition of the property is evaluated section-by-section. A survey unit is a grouping of contiguous surfaces or areas with similar use history that have the same classification of contamination potential. In no case shall Affected and Unaffected Areas be included within the same survey unit. When dividing areas into survey units, areas that are naturally distinguishable from other areas, in addition to sharing a common contamination potential, will be grouped into individual survey units. Survey units shall be sized to assure a minimum of thirty measurement locations.

4.4 Surface Scans

Scans of paved surfaces will be performed for beta/gamma radiation. Soil surfaces will be scanned for gamma radiation only.

The instruments having the lowest detection sensitivity will be used for the scans wherever physical surface conditions and measurement locations permit. Scanning speeds will be no greater than one detector width per second for beta/gamma detection instruments and 0.5 meters per second for gamma instruments. Instruments with audible indicators will be used to identify locations having elevated levels of directly-measured radiation exceeding two times background. Locations of surface activity exceeding twice background shall be marked for further evaluation.

4.5 Surface Activity Measurements

4.5.1 Direct Measurements

Direct measurements of beta, or beta-gamma surface activity will be performed at selected locations using instrumentation similar to that selected for the same measurements performed during the Radiological Characterization Survey. Unless precluded by surface condition or physical parameters, the most sensitive of the instruments available will be used for direct surface measurements. Measurements will be performed by integrating counts over a sufficiently long period of time to achieve a satisfactorily low MDA. Count times will be determined on-site based on background levels and detector efficiency.

4.5.2 Removable Surface Activity Measurements

A smear sample for removable contamination will be collected from each location where a direct surface activity measurement is made. These samples will be analyzed for beta/gamma contamination.

4.6 Exposure Rate Measurements

Gamma exposure rates will be measured at a distance of one meter above the surface, using a gamma scintillation instrument detector calibrated for normal uranium radiation energies. Measurements will be uniformly spaced according to the following pattern:

Pavement

Affected Areas:	one measurement per 20 1m^2 gridblocks
Unaffected Areas:	one measurement per 50 1m^2 gridblocks

Soil areas

Affected Areas:	four measurements per 100 m^2 gridblock
Unaffected Areas:	one measurement per 100 m^2 gridblock

4.7 Soil Sampling

4.7.1 Sampling of Surface Soil

Samples of surface soil will be systematically collected from the four points midway between the center and each gridblock corner for each 100 m^2 gridblock in Affected Areas. In Unaffected Areas, one sample will be collected from each 100 m^2 gridblock. At each surface sampling location, contact gamma radiation levels before and after sampling will be measured to determine whether subsurface contamination is present. Soil samples will be analyzed to determine radioactivity concentrations.

4.7.2 Sampling of Subsurface Soil

Locations of potential subsurface radiological contamination will be sampled in two-foot increments until the depth of contamination is bounded. These locations will be chosen based on the contact gamma radiation readings described in Section 4.7.1. Soil samples will be analyzed to determine radioactivity concentrations.

Underground hazards such as energy sources or obstructions will already have been identified during the Radiological Characterization Survey. Markings established prior to the Radiological Characterization Survey that show the locations of any underground hazards will be verified prior to beginning the Final Radiological Status Survey subsurface soil sampling.

4.8 Sample Analyses

Smears and swabs for removable contamination will be counted for gross alpha and gross beta activity. Soil will be analyzed for normal uranium concentration by gamma spectrometry. Chain-of-custody procedures will be observed for all sample analyses.

4.9 Data Interpretation

Radiological measurement data will be converted to units of dpm/100 cm^2 (surface activity), μrem/hr (exposure rates), and pCi/g (soil radionuclide concentrations) for comparison to guideline values. Values will be adjusted for contributions from natural background. Individual measurements and soil concentrations will be compared to guideline values for maximum activity locations. Average values for survey unit radiological parameters will be determined and compared to guideline values for average activity. Data collected during the Final Radiological Status Survey for each survey unit

will be tested against the confidence level objective of 95% using guidance and procedures described in Reference 4-1.

Additional remediation and/or further sampling and measurements will be performed where guidelines are not met or cannot be demonstrated to the 95% confidence level. Computations and comparisons will be repeated as necessary.

4.10 Final Radiological Status Survey Report

The contractor will prepare a Final Radiological Status Survey Report that will provide a complete record of the radiological status of each survey unit at the area surrounding Building G-1. This report will conform to the guidance presented in Reference 4-1.

4.11 References

Reference 4-1 "Manual for Conducting Radiological Surveys in Support of License Termination," NUREG/CR 5849, June, 1992.

5.0 FUNDING

As Environmental Reserve Fund has been set aside to address all activities required to complete the proposed work plan. Through the duration of the project, projected cost and actual cost will be compared against this reserve to assure that sufficient funding exists to execute the work plan. If a short fall of funding develops, the reserve fund will be supplemented.

6.0 PHYSICAL SECURITY AND MATERIAL CONTROL PLAN AND ACCOUNTING PROVISIONS IN PLACE DURING DECONTAMINATION

The previous radiological assessment of the area surrounding Building G-1 did not identify any special nuclear material at the site. Therefore, a Physical Security and Material Control Plan will not be developed or implemented during the decontamination.

The area surrounding Building G-1 is located within an area with controlled access. The only access is through a guard-gate.

7.0 RECORDS/REPORTS/NOTIFICATIONS

All project-related records generated through the performance of the pavement and soil decontamination activities will be maintained by Engelhard Corporation for a period of 5 years.

1/20/95

SITE DECOMMISSIONING STATUS REPORT

CHEVRON

SITE: CHEVRON/Engelhard Corp
(Harshaw Chemical Building C Site)
1000 Harvard Ave
Cleveland, OH 44112

License No.: None **Docket No.:** None

CONTACTS

Licensee:	Bill Potter	(510) 266-3349	(Sr Envir Proj Eng)
NRC Lead:	W. Snell	(708) 829-9871	
RIII Contact:	W. Snell	(708) 829-9871	

SITE DESCRIPTION

- Used natural uranium in production of uranium hexafluoride for the Manhattan Engineering District and AEC in 1940's and 1950's.
- Building C was the main processing building, and is made of brick & concrete with one, two and three-story sections, of 66,500 ft^2.
- Building C (and site) was deconned by Harshaw Chemical and released from AEC control in 1960.
- Engelhard owns the entire site except for Building C, which is owned by Chevron.
- DOE sponsored survey by Argonne from 1976 thru 1979. Survey identified residual natural uranium contamination in excess of NRC release limits within Building C, as well as elsewhere on site.
- β/γ measurements in Building C indicated up to 1,100,000 dpm/100 cm^2; α measurements indicated 300 to 900 dpm/100 cm^2.
- Chemical Waste Management conducted survey of Building C in 1992 for Chevron and confirmed existence of considerable natural uranium contamination in excess of NRC release limits.

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SITE DECOMMISSIONING STATUS REPORT

CHEVRON

KEY ISSUES & DATES

- March 1994 survey by NRC RIII. Confirmed contamination levels in excess of NRC release criteria. Building was sufficiently secured as to pose no immediate threat to worker safety.

- Chevron has responsibility for remediation of contamination found in Building C while Engelhard has responsibility for remediation of onsite contamination outside the "footprint" of Building C.

- Regional Inspector & Section Chief conducted site visit on August 24, 1994. No change observed in status of site conditions.

- Decommissioning plans from both Chevron and Engelhard have been recieved. Chevron plan has been reviewed and comments provided to Chevron by letter dated 1/13/95. Plan was not acceptable. Review of Engelhard plan in progress.

- Although a contractor has not been selected to perform the remediation, the intent is for Chevron and Engelhard to select the same contractor, and then perform the remediation of the soil and pavement surrounding Building C in conjunction with the remediation of Building C.

- Because of the timeliness of Chevron's remediation schedule, they will not be placed on the SDMP list.

- The goal is to commence with mobilization for remediation in March 1995; complete remediation by end of August 1995; and conduct NRC closeout inspection in September 1995. Complete demolition and removal of Building C is planned in conjunction with the remediation.

- Because there is no current licensee for the facility, the decommissioning contractor's license will be used to take possession of the facility for purposes of decommissioning.

This Report is current as of: January 20, 1995

TELEPHONE LOG

Call By: Bill Snell

Date: 1/31/95
Time: 1 PM

Caller: Name: Andy Kopas
Title: Manager, Environmental Services
Organization: Engelhard Corporation
Phone No.: (216) 329-2553

Others: Bill Potter - Chevron
Max Scott - Contractor to Engelhard

SUBJECT: DISCUSSION ON URANIUM CONTAMINATION

Discussion:

The purpose of the call was to discuss whether the uranium contamination at the Chevron/Engelhard site was natural uranium with it's daughters in equilibrium or whether it was uranium in which the daughters had been removed. Max Scott contended that because the uranium that had been used at the site was yellowcake (uranium oxide), that the daughters had been chemically stripped out during the mining/milling operation. I stated that the Argonne report referred to normal uranium while the Chemical Waste report referred to natural uranium. None of the data in either report provided specifics as to whether the decay daughters were present or not, except possibly the computer printouts attached to the Argonne report, but they were unreadable. Because of the uncertainty, and the criteria of 10 pCi/g for natural uranium, I stated they would need to provide a justification to support a value greater than 10 pCi/g for soil remediation.

I generally agreed that if they collected at least four samples, soil as well as concrete, and conducted gamma spec on each sample as well as an alpha spec on one sample, that that should be adequate to show whether the daughters are or aren't present. Engelhard agreed to this and said they would send us something in writing.

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TELEPHONE LOG

Call By: Bill Snell

Date: 2/08/95
Time: ~ 8 AM

Caller: **Name: Andy Kopas**
Title: Manager, Environmental Services
Organization: Engelhard Corporation
Phone No.: (216) 329-2553

SUBJECT: DISCUSSION ON SCOPE OF ENGELHARD REMEDIATION

Discussion:

The purpose of the call was to determine the planned extent of the remediation that Engelhard will do in conjunction with the remediation by Chevron of Chevron's Building C. The reason why this is important is because the State of Ohio has jurisdiction over Engelhard. The State has said they have no problem with the NRC assuming the lead for the Engelhard portion of the remediation that is done in conjunction with Chevron's Building C remediation. The question is, what about the rest of the site?

Currently, Engelhard's plan is to work outward from Building C until they no longer find any contamination. If they find contamination in the storm sewer, they will pursue it. They will remediate other areas onsite that have been previously identified as contaminated, to the extent they can. Some of these areas are currently being occupied by workers. Since the contamination is fixed in concrete, there is little health and safety threat. Their thought for most of these other areas onsite is to wait several more years until the present occupant's lease expires, and then conduct the final remediation at that time. Since they are not a licensee, it is there call. However, we did discuss, and he is well aware of the fact that the remediation limits may decrease in the future, that shipping costs may go up significantly in the future, and it would cost to remobilize for another remediation effort.

Other items discussed included storm drains. There are storm drains onsite and they do drain to the Cuyahoga River. I said that I would expect sediment samples to be taken at the outfall of the drain at a minimum. Based on my experiences at other sites, I also recommended they take sediment samples in the river all along the site, as much to show there is (hopefully) no contamination as to determine if there is.

I also asked about the extent of surveys throughout the rest of the site. He said that it had been considered. Argonne did do some of the

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site, but was unsure of the extent. They were looking at doing 1% of the unaffected areas, but wasn't clear how much of the site was to be considered unaffected.

It appears they have been doing a good job. When they put up the fence that currently surrounds Building C, they had an HP there to check the soil for radioactive contamination from boring the post holes. He also recognizes there were drains in Building C that run somewhere undergrcund that need to be dug up and checked.