



**OHM Energy
Services Corporation**
A Subsidiary of OHM Corporation

**Rocky Flats Environmental Technology Site
Contract No. KH800156MW
AE/CCM Project**

**Construction Health and Safety Plan for Solar Ponds Plume
Treatment System**

REFERENCE ONLY

Table of Contents

ACRONYMS		3
1 0	INTRODUCTION	4
1 1	Scope of Work	4
2 0	PROJECT ORGANIZATION AND RESPONSIBILITIES	6
2 1	Organization Chart	6
2 2	OHM Project Manager Responsibilities	6
2 3	OHM Project Superintendent Responsibilities	6
2 4	Safety Professional Responsibilities	7
2 5	Safety Designee Responsibilities	7
2 6	Task Site Personnel Responsibilities	8
2 7	Lower-Tier Subcontractor Responsibilities and Control	8
2 8	Radiological Control Technician Responsibilities	8
2 9	Quality Control/Quality Assurance (QA/QC) Inspector Responsibilities	8
2 10	Engineer Responsibilities	9
3 0	PERSONNEL TRAINING	10
3 1	Pre-Construction Safety and Health Orientation	10
3 2	Construction Bulletin Board	11
3 3	Worksite and Task Specific Training	11
3 4	Daily/Weekly Pre-Work Meetings	11
4 0	SITE SPECIFIC REQUIREMENTS COMPLIANCE	12
4 1	Personal Protective Equipment	12
4 2	Ladders	12
4 3	Seatbelts	12
4 4	Imminent Danger	12
4 5	Cursory Equipment Inspections	12
4 6	Flammable and Combustible Liquids	13
4 7	Portable Generators	13
4 8	Ground Fault Circuit Interrupters	13
4 9	Modification of Tools and Equipment	13
4 10	Demarcation of Construction Areas	13
4 11	Housekeeping	13
4 12	Energy Isolation and Lockout/Tagout	13
4 13	Unusual Conditions and Unexpected Hazards	14
4 14	Spill Control	14
4 15	Health Hazard Monitoring and Medical Surveillance	14
4 16	Job Site Safety and Health Inspections	15
4 17	Chemical Control	15
4 18	Emergency Response	15
5 0	HAZARD ANALYSIS	19

APPENDIX

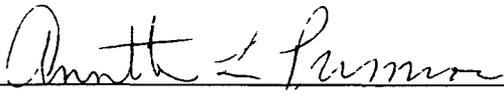
Appendix 1 OHM Safety and Health Professional/Safety Designee Qualifications

APPROVAL SIGNATURES

OHM Project Manager  Date 6/10/99

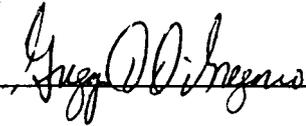
OHM Safety Manager  Date 6/10/99

OHM QA/QC  Date 6/10/99

RMRS Project Manager  Date 6/10/99

RMRS Health and Safety  Date 6/10/99

RMRS Radiological Engineering  Date 6/10/99

RMRS Quality Assurance  Date 6-10-99

ACRONYMS

AHA	Activity Hazard Analyses
ANSI	American National Standards Institute
CHASP	Construction Health and Safety Plan
CHMM	Certified Hazardous Materials Manager
CFR	Code of Federal Regulations
CSP	Certified Safety Professional
CTR	Contractor Technical Representative
DOE	Department of Energy
EC	Emergency Coordinator
HAZMAT	Hazardous Materials
IWCP	Integrated Work Control Program
KH	Kaiser Hill, L L C
OHM	OHM Energy Services
OMP	Occupational Medical Program
OSHA	Occupational Safety and Health Administration
P G	Professional Geologist
PPE	Personal Protective Equipment
QA/QC	Quality Assurance/Quality Control
RCT	Radiological Control Technician
RFETS	Rocky Flats Environmental Technology Site
RMRS	Rocky Mountain Remediation Services, L L C
RSP	Radiological Safety Practices
SOP	Standard Operating Procedures
TBD	To Be Decided

1 0 INTRODUCTION

This construction health and safety plan (CHASP) establishes the procedures and requirements that will be used to minimize health and safety risks to persons involved with the construction of the reactive barrier for the Solar Ponds Plume Project. The plan contains information about the hazards involved in performing the tasks and the specific actions and equipment that will be used to protect persons working at the Solar Ponds Plume Project.

This CHASP will govern all work (including inspections) at the Solar Ponds Plume Project performed by employees of OHM Energy Services (OHM), Rocky Mountain Remediation Services, L L C (RMRS), Kaiser Hill, L L C (KH) and OHM subcontractor employees.

1 1 Scope of Work

The Solar Ponds Plume Project involves the installation of a reactive iron system for collection and treatment of the Solar Ponds Plume. The treatment system consists of a subsurface barrier, a long-term monitoring system, and a treatment system including treatment media identified in development studies. The following sections briefly review the procedures for installing the treatment system. Details of system installation can be found in the Field Implementation Plan. Work associated with this project is expected to be performed during daylight hours, Monday through Friday from 0700 to 1730. Work hours will be modified as necessary to maintain schedule but will not be adjusted when safety may be compromised. No employee will be allowed to work in excess of 70 hours per week as dictated by the RFETS Conduct of Operations Manual.

OHM will mobilize the field crew, health and safety materials, vehicles, and small equipment primarily from the office in Denver, Colorado. All heavy equipment, support equipment, and subcontractor services will be obtained from vendors in the local area. Key personnel for the project include the Project Manager, Safety Professional, the Safety Designee, Project Superintendent, and field labor.

The barrier wall alignment and the treatment system will be surveyed prior to performing any intrusive activities. Control points will be established outside the work area and referenced during installation of the treatment system to ensure all elevations are per the design specifications. There will be no intrusive activities performed as part of the site survey task.

The first 12 inches of surface soils will be scraped from the work area. Topsoil will be appropriately segregated and stockpiled.

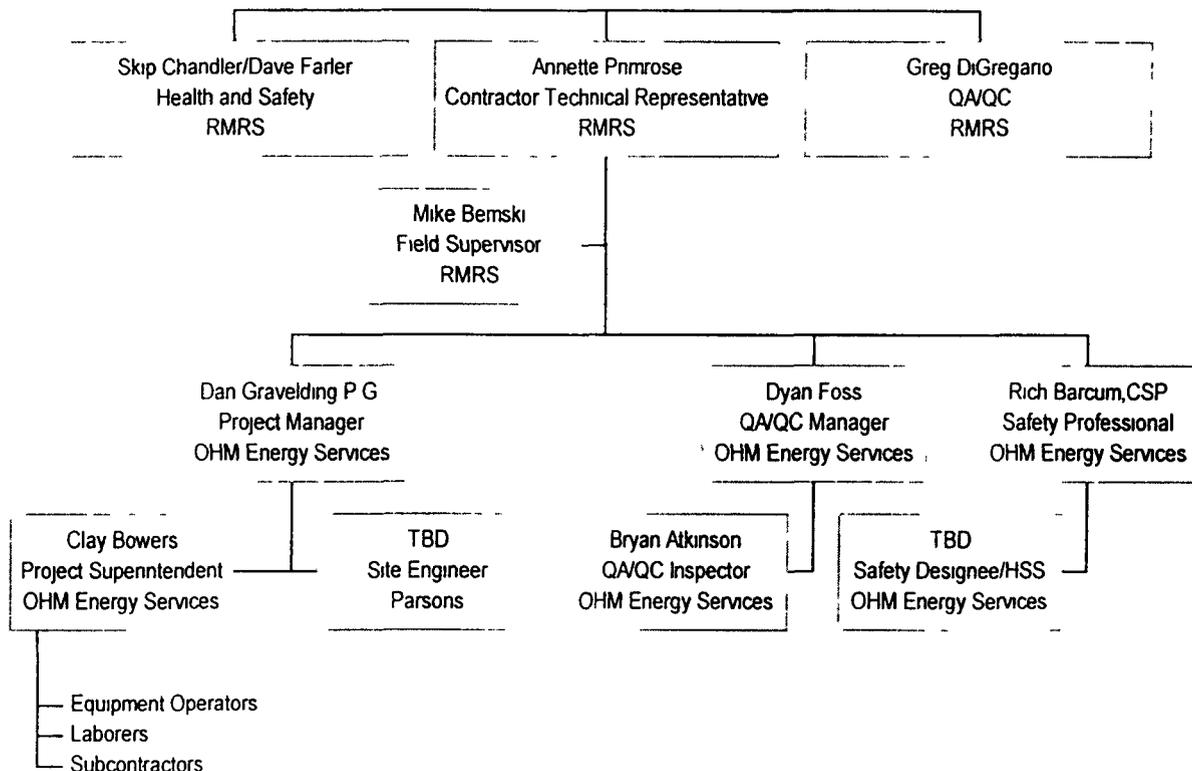
Prior to initiating construction operations, the following site preparation activities will be performed:

- 1 Site-Specific training will be required for all site personnel and site badges will be secured.
- 2 All site personnel will provide certificates of OSHA training. Personnel will also receive training, as applicable, on equipment to be utilized during the execution of the project. Certification of training will be provided to RMRS upon request by the Contractor Technical Representative.

- 3 A pre-construction meeting will be held with all project personnel. The meeting consists of an explanation of DOE procedures, points of contact throughout site activities, and review of the CHASP, including applicable Activity Hazard Analyses (See Section 5)
- 4 Necessary work permits will be obtained in coordination with Rocky Flats Environmental Technology Site (RFETS) personnel (i.e. fire department, excavation, building and zoning, plumbing, electrical, and environmental)
- 5 Temporary facilities such as storage trailers, sanitary facilities, parking areas, construction materials, and areas for staging (containing) construction wastes will be established. Radio and/or cellular phones will be used on site.
- 6 Site security will be established and will consist of temporary construction barrier rope. Traffic control measures will be established.
- 7 Work zones will be established.

2 0 PROJECT ORGANIZATION AND RESPONSIBILITIES

2 1 Organization Chart



2 2 OHM Project Manager Responsibilities

The OHM Project Manager for the Solar Ponds Plume Project has overall responsibility for work performed by OHM personnel and any subcontractors at the site. The Project Manager, through line management and supervisors, has responsibility for implementing and abiding by the CHASP.

2 3 OHM Project Superintendent Responsibilities

The Superintendent is responsible for overall safety and health during the performance of the construction activity. This person will be present on-site during the performance of construction work and will ensure that provisions of this CHASP and the requirements of the OHM Safety and Health Program are fully implemented. The Superintendent manages field operations and is ultimately responsible for the safe and successful completion of the project. The Superintendent also enforces site control, documents task site activities, and conducts daily safety briefings at the start of the work shift. The Superintendent will also interface with the CTR and Safety.

Professional or Safety Designee to ensure that project goals are being met and that health and safety issues involving the site are addressed

2.4 Safety Professional Responsibilities

The Safety Professional is responsible for managing the safety and health programs on numerous construction project sites, including responsibility for maintaining and providing training records and documentation to the CTR upon request. The Safety Professional is responsible for ensuring that Health and Safety Specialists/Safety Designees are adequately fulfilling their roles and responsibilities. The Safety Professional is OHM's primary source of information regarding radiological hazards at the task site. The Safety Professional may assume the responsibilities of the Safety Designee as conditions warrant.

2.5 Safety Designee/HSS Responsibilities

The Safety Designee is the primary source of information regarding non-radiological hazardous and toxic agents at the task site. The Safety Designee assesses the potential for worker exposures to hazardous agents in accordance with OHM procedures. The Safety Designee recommends appropriate hazard controls for protection of task site personnel, reviews the effectiveness of monitoring and Personal Protective Equipment (PPE) required in this CHASP, and recommends changes as appropriate. Following an evacuation, the Safety Designee will assist in determining whether conditions at the task site are safe for reentry. Employees showing health effects resulting from possible exposure to hazardous agents will be referred to the Occupational Medical Program (OMP) by the Safety Professional or Safety Designee. The Safety Designee may also have other duties at the task site as specified in other sections of this CHASP or OHM procedures and manuals. Because of the possibility non-radiological hazards will be encountered during this investigation, the Safety Professional will assign a Safety Designee to perform monitoring at the task site as conditions warrant.

The responsibilities of Safety Designee will include but not be limited to

- Implement the CHASP, attend pre-work conferences, and conduct all construction site safety and health orientations and/or briefings
- Document weekly construction safety meetings and daily pre-activity work plan or hazard review meetings
- Perform or oversee performance of any required monitoring for construction site physical, chemical, or biological hazards
- Perform daily project safety and health inspections of the construction site, recording hazards found and corrective actions taken in a permanent log. Provide for immediate identification, documentation, abatement and/or resolution of hazards/deficiencies or safety and health rule violations noted during construction activities
- Ensure the prompt and complete reporting of all construction site accident and incident investigations, and provide appropriate reports to the CTR within the required time frame

- Maintain all required construction activity Health and Safety statistical information and provide monthly to the CTR all information stipulated on the "Monthly Contractor Injury and Illness Statistics" Report, pertinent to employee hours worked, Computerized Accident Incident Reporting System, and OSHA Incidence Rates for construction work performed on-site by the OHM, Lower-tier Subcontractors and Vendors
- Respond to Occupational Medicine for all accidents, injuries and illnesses and notify RMRS Safety of all incidents

2.6 Task Site Personnel Responsibilities

All task site personnel having business at Solar Ponds Plume Project, regardless of company affiliation, are responsible for understanding and complying with requirements of this CHASP. Task site personnel will be briefed by the Project Superintendent or Safety Designee at the start of each shift. Task site personnel should identify potentially unsafe situations or conditions to the Project Superintendent, or Safety Designee for corrective action. If unsafe conditions develop, task site personnel are authorized to stop work and notify the Project Superintendent, or Safety Designee of the unsafe condition.

2.7 Lower-Tier Subcontractor Responsibilities and Control

OHM subcontractors are required to comply with all applicable requirements and guidelines, including pre-construction briefings and training. OHM shall be responsible for safety and health performance of lower-tier subcontractors and vendors.

2.8 Radiological Control Technician Responsibilities

Radiological Control Technician (RCT) coverage will be provided as required. In the event radiological contamination is identified, an RCT will be present at the task site as required by the Radiological Safety Practices manual.

Responsibilities of the RCT include radiological surveying of the task site, equipment, and samples as specified in the Soil Disturbance Permit, providing guidance for labeling and transporting radioactive samples (if any), providing guidance for radiological decontamination of equipment and personnel, and accompanying the affected personnel to the RFETS medical facility for evaluation if significant radiological contamination occurs. The RCT must notify the Safety Professional of any radiological occurrence that must be reported as directed by the Radiological Safety Practices (RSP) manual. The RCT may also have other duties at the task site as specified in other sections of this CHASP or Company procedures and manuals. The RCT will meet the qualification established by the RFETS.

2.9 Quality Assurance/Quality Control (QA/QC) Inspector Responsibilities

RMRS and OHM QA/QC Inspectors are responsible for understanding and complying with requirements of this CHASP. QA/QC Inspectors will be briefed by the Project Superintendent or Safety Designee as needed. QA/QC Inspectors should identify potentially unsafe situations or

conditions to the Project Superintendent, or Safety Designee for corrective action. If unsafe conditions develop, QA/QC Inspectors are authorized to stop work and notify the Project Superintendent, or Safety Designee of the unsafe condition.

2.10 Engineer Responsibilities

RMRS and OHM Engineers are responsible for understanding and complying with requirements of this CHASP. Engineers will be briefed by the Project Superintendent or Safety Designee at the start of each shift. Engineers should identify potentially unsafe situations or conditions to the Project Superintendent, or Safety Designee for corrective action. If unsafe conditions develop, Engineers are authorized to stop work and notify the Project Superintendent, or Safety Designee of the unsafe condition.

3 0 PERSONNEL TRAINING

3 1 Pre-Construction Safety and Health Orientation

All personnel reporting for work at the construction site shall attend a documented pre-construction safety and health general orientation conducted by the Site Superintendent or Safety Designee. The orientation shall emphasize that no employee will be required to work in conditions that are unsanitary, hazardous, or dangerous to their safety or health, and that accident prevention shall be the responsibility of each individual on the construction site. The employees will be advised of their safety and health rights (a work place free from recognized hazards with a procedure to make hazards known to management) and their safety and health responsibilities (to work in a safe manner). The safety and health orientation shall at a minimum address the additional following points:

- Employee rights and responsibilities, and location of DOE form F5480 4 "Complaint Form"
- OHM, Lower-Tier Subcontractor and/or Vendor responsibilities
- The location of approved Project Health and Safety Plan available for review by employees
- First aid and medical facilities
- Emergency response procedures to include local warning, evacuation, and sheltering
- Specific Occupational Safety and Health programs or procedures applicable to the construction activities
- The Hazards Communications Program
- Employee access to exposure monitoring data and medical records
- General project hazards and the applicable policies and procedures for addressing these hazards
- Construction hazard recognition and the procedures for reporting or correcting unsafe conditions
- Use and maintenance of PPE
- Procedures for reporting accidents or incidents
- Fire prevention and control
- Alcohol and drug abuse policy
- Disciplinary procedures for safety infractions or violations
- Documentation of all pre-evolution briefings shall be included in IWCP at all times

Site specific safety and health requirements may vary from construction project to construction project. Employees with a continued on-site presence or those working on multiple construction projects may be provided with a general construction safety and health orientation of the items referenced prior to the commencement of the initial construction activity, and at least annually thereafter. Orientation on items that vary from project to project shall be provided for each project. The CTR or Safety Professional reserves the right to require and provide additional construction safety and health orientation topics for inclusion in the Health and Safety orientations.

3 2 Construction Bulletin Board

To promote and maintain a highly visible safety profile on the work-site, each construction project shall establish a Safety Bulletin Board. Bulletin boards will be at the break trailer where they are readily accessible and may be easily read by employees and visitors to the work-site. Bulletin boards will be of sufficient size to accommodate the following postings:

- 1 Project Information Card
- 2 Appropriate required OSHA, Colorado Worker's Compensation Posters
- 3 Appropriate safety posters and safety information signs (e.g., PPE requirements for the work area)

3 3 Worksite and Task Specific Training

All personnel, regardless of company affiliation, assigned to the Solar Ponds Plume Project must complete the training required by OSHA as well as site-specific health and safety training courses required by RMRS. The Solar Ponds Plume Project is classified as a hazardous waste operation by OSHA standard 29 CFR 1926.65, therefore, the training requirements, including the initial training, annual refresher training, and supervisor training, apply to personnel working at the site. Additional training courses required by RMRS include General Employee Radiological Training. Depending on the task for individual employees, specific training may be required, including, but not limited to, annual Hazard Communication training, confined space entry training, and fall protection training.

3 4 Daily/Weekly Pre-Work Meetings

Daily pre-work safety briefings (Tailgate Safety Meetings) for project site employees shall be conducted and documented by the Superintendent or Safety Designee. The briefings will address the day's planned activities and any pertinent safety and health information the supervisor determines to be applicable and will serve as a daily reminder of safety responsibilities. The length of the pre-work safety briefings will vary depending on the complexity of the day's tasks.

Documented construction safety and health meetings with mandatory attendance shall be conducted on a weekly basis for all project site employees. Each meeting will be conducted by the Safety Designee or Project Superintendent. A formal outline of the meeting shall be maintained at RFETS and copies of the outline shall be furnished to the CTR within 24 hours of the meeting. Meeting minutes will be documented and attached to the roster.

4 0 SITE SPECIFIC REQUIREMENTS COMPLIANCE

4 1 Personal Protective Equipment

PPE will be selected and supplied based upon the nature of the hazards present. The following are minimum PPE requirements for the Solar Ponds Plume Project. Additional, PPE is stipulated in the Activity Hazard Analyses.

- Hardhats will be worn by all personnel in the construction area. All hardhats shall be ANSI Z89.1 approved.
- Eye protection shall be worn by all personnel in the construction area. All safety glasses shall be ANSI Z87.1 approved industrial strength eye protection with side shields. Dark tinted lenses shall not be worn during the hours of darkness or within buildings, enclosures or structures.
- ANSI Z41.1 approved over the ankle leather work boots shall be worn by all personnel in the construction area. Concrete demolition and earth compaction equipment with a drive piston shall be conducted with metatarsal protection.
- Work clothing consisting of long pants and shirts that cover the shoulders with a minimum of 4 inches of sleeve shall be worn by all personnel in the construction area.
- All personnel working on or near a roadway or heavy equipment shall wear high visibility vests.

4 2 Ladders

All ladders shall be rated Class 1-A Industrial Extra Heavy Duty. Metal ladders will not be used when electrical hazards are present or in close proximity. The use of three-legged ladders is prohibited.

4 3 Seatbelts

Seatbelts shall be worn while personnel are riding in motor vehicles and by equipment operators when operating heavy equipment.

4 4 Imminent Danger

All project personnel have the authority and responsibility to stop work activities, without fear of retribution, in the event of imminent danger.

4 5 Cursory Equipment Inspections

All lifting and earthmoving equipment shall be inspected upon arrival on site and every day prior to use. Additionally, RMRS Safety will conduct cursory inspections of lifting and earthmoving equipment prior to its use on site. Pursuant to OHM agreement with RMRS Safety this inspection may take place at the site, provided that the equipment is not utilized until approval is granted by RMRS Safety. Drill rigs and mobile cranes will be inspected prior to entry onto the site as required by Kaiser Hill.

4 6 Flammable and Combustible Liquids

Only approved metal safety cans shall be used for the handling, use and storage of flammable and combustible liquids in quantities greater than one gallon. The original container or approved metal safety cans shall be used for quantities of less than one gallon. Approved metal safety cans shall be in good repair, equipped with a spring loaded closing device, flame arrestor, and be properly labeled. Except when in use, all flammable and combustible liquids shall be stored in an approved flammable material storage cabinet.

4 7 Portable Generators

Portable generators shall have externally grounded frames or certification to document the manufacturer's test data.

4 8 Ground Fault Circuit Interrupters

Ground fault circuit interrupters shall be used in conjunction with all 125 volt (nominal), single phase, 15-, 20-, and 30- ampere receptacle outlets.

4 9 Modification of Tools and Equipment

Tools and equipment will not be fabricated or modified during the execution of this project. Modified hand tools or equipment will not be utilized on this project.

4 10 Demarcation of Construction Areas

Due to the possibility for high winds on site, the construction area will be demarcated utilizing construction rope with yellow caution tape placed at 20 to 25 foot intervals. The demarcation shall include postings of minimum PPE requirements visible at all entrances to the construction area to alert personnel. Orange construction fencing will be utilized to demarcate the excavation areas. This fencing will be placed at a distance of at least 6 feet from the excavation. Individuals between the construction fencing and the excavation are required to wear fall protection. Additionally, postings will be utilized to identify which excavations have been authorized for personnel entry.

4 11 Housekeeping

Housekeeping shall be maintained on an ongoing basis. OHM will control debris at all times to avoid debris from becoming wind blown across the site.

4 12 Energy Isolation and Lockout/Tagout

All energy isolation shall be performed in accordance with Site lockout/tagout procedures. No work on energized systems will be performed.

4 13 Unusual and Unexpected Conditions

In accordance with the RMRS Safety and Environmental Stewardship Directive, OPS-DIR-001 requires that project personnel

"Adequately address unexpected hazards or conditions encountered during environmental restoration, waste management, and decontamination's and decommissioning activities In the event unanticipated hazards or conditions are encountered, the project activities will pause to assess the potential hazard or condition The potential hazard or condition will be evaluated to determine the severity or significance of the hazard or condition and whether the existing project controls are sufficient to address the hazard or conditions Based on this initial evaluation, a determination will be made whether to proceed with the controls currently in place, segregate the condition or hazard from the project activity, if this can be done safely, or curtail operations to address the unexpected hazard or conditions Concurrence to proceed down the selected path must be obtained from the respective RMRS Vice President or their designee "

In the event of adverse weather conditions such as high winds, lightning or other inclement weather, OHM shall limit or curtail activities as appropriate Sustained wind speeds between 30 and 45 mph require that all work on roof tops and elevated surfaces be suspended and evaluated by the Safety Professional prior to work continuing For sustained winds at or above 45 mph, all outside work shall be stopped Sustained winds in excess of 55 mph require that all employees be sheltered in permanent structures Placement of panels will be evaluated by OHM Health and Safety when wind speed exceed 15 mph Panels will not be placed when wind speeds exceed 20 mph

4 14 Spill Control

The use of appropriate spill controls measures will be utilized A containment system will be appropriately designed for fuel storage tanks

4 15 Health Hazard Monitoring and Medical Surveillance

Personnel will participate in an Medical Surveillance Program as required by 29 CFR 1926 65 All subcontractors are required to provide medical surveillance for employees working at the Solar Ponds Plume Project and to provide acknowledgment of such surveillance per 29 CFR 1926 65 Radiological internal dosimetry is required for individuals meeting the requirements under the RSPs

The policy of the RFETS OMP[®] is to examine all workers, including subcontractors, if the workers are experiencing symptoms consistent with exposure to a hazardous material, or there is reason to believe they have been exposed to toxic substances or physical agents in excess of allowable limits

Project specific monitoring is not anticipated but will be performed as necessary

4 16 Job Site Safety and Health Inspections

Daily safety and health inspections shall be conducted of the worksite by the Safety Professional or Safety Designee. Safety and Health deficiencies will be corrected immediately and recorded in a permanent logbook.

4 17 Chemical Control

Material Safety Data Sheets shall be maintained for all hazardous chemicals. All hazardous chemicals shall be properly labeled and stored. An inventory list of all chemicals on the projects shall be continually updated and maintained on site. Workers shall receive Hazard Communication training for the chemicals they will use or may be exposed to on site.

4 18 Emergency Response

This CHASP has been developed to allow site activities to be conducted without adverse impact on the safety of the worker, the community, and the environment. Procedures included in this section address the action required in the event of extraordinary conditions that might occur at the site.

During site-specific orientation and at daily safety meetings, all employees will be trained in and reminded of the provisions of this emergency response plan, the communication systems, and evacuation routes. This plan will be reviewed and revised, if necessary, on a regular basis. This will ensure that the plan is adequate and consistent with prevailing site conditions.

**LIFE-THREATENING EMERGENCIES
CALL EXTENSION 2911****NON LIFE-THREATENING EMERGENCIES
CALL EXTENSION 2914**

Notification requirements for emergency situations at Solar Ponds Plume Project depend on the nature of the perceived emergency (e.g., spill, injury, fire) and the extent to which the damage and/or injuries have progressed. Upon discovery of a release of materials or other non life-threatening emergency situation, the Shift Superintendent will be notified at extension 2914. If there is no answer at 2914, call extension 2911. If the situation is life-threatening, RFETS emergency response personnel will be notified as detailed below.

Call Extension 2911 to obtain emergency assistance for life-threatening emergencies and to simultaneously access the following:

- Emergency Coordinator (EC), Shift Superintendent
- Plant Protection Central Alarm Station
- Fire Department Dispatch Center

- Medical Department

As much detail about the emergency as possible shall be provided. A decision to dispatch any or all of the following equipment will be based on the provided information.

- Fire Engine
- Ambulance
- Hazardous Material (HAZMAT) Response Vehicle

Provide the following information, upon request, to the Emergency Dispatcher

- Informant's name
- Exact location of the emergency
- Nature of the emergency
- Condition of the patient if applicable (breathing, consciousness, bleeding, etc.)
- Special hazards in the area
- Any other information requested

If no details are given, emergency response personnel will respond automatically.

The EC will respond immediately to emergencies. The RFETS Protection Central Alarm Station will activate the Building Emergency Support Team by the Life Safety/Disaster Warning Public Address System. The EC will activate the Emergency Operation Center and notify departments that have an advisory role in the situation, if applicable. The EC will determine whether additional help from off-site agencies (e.g., police, hospitals) is required.

The EC will also notify the following groups when appropriate:

- Radiological Engineering
- Industrial Hygiene
- Occupational Safety
- Waste Operations
- Waste Programs
- Traffic
- Occurrence Notification Officer
- Health and Safety Administrator

Emergency Contact Telephone and Pager Numbers

Fire	x2911
Ambulance	x2911
Poison Center	629-1123
Security	x2911

Additional Project Telephone Numbers

Safety Team Lead – Skip Chandler	x6673
Health and Safety – Dave Farler	x4340

Project Manager - Annette Primrose	x4385
Field Manager – Mike Bemski	x4090
H&S Supervisor – Tony Medina*	x5830
OHM Project Manager - Dan Graveling	x7278/303-793-5278
OHM Health and Safety Officer – Rich Barcum, CSP, CHMM	x7892
OHM DOE Program Manager – Jay Green	x5834
OHM QA/QC – Bryan Atkinson	x3793

* - H&S Supervisor is only to be called if other Health and Safety Personnel are unavailable

The response to and abatement of most emergency situations from the Solar Ponds Plume Project will require the expertise of RFETS emergency response personnel. Situations that will require the assistance of RFETS emergency responders include, but are not limited to the following

- Accidents resulting in physical injury,
- Accidents resulting in radiological exposure,
- Incidents where the substance cannot be absorbed, neutralized or otherwise controlled at the time of release,
- Situations where there is a potential for safety or health hazards,

REPORT TO THE EC AT EXTENSION 2911 all spills where the substance cannot be absorbed, neutralized, or otherwise controlled at the time of release, or where there is a potential for safety or health hazards (fire, explosion, chemical, or radiological exposure) The EC will dispatch the HAZMAT Response Vehicle and any other necessary support personnel

Spills that do not require a HAZMAT response shall be cleaned up by site personnel according to an approved RFETS SOP and RMRS project agreement. Notification will be made to the RMRS CTR of all incidental spills. Spills onto porous ground will require removal of contaminated dirt as well as the spilled material and are expected to be classified as hazardous waste and are reportable. Fire extinguishers will be located in all field vehicles and will be temporarily located at sites where there is a potential for fires (e.g., during welding operations). The RFETS Shift Superintendent will be immediately notified of any abnormal events.

Personnel and visitors to Solar Ponds Plume Project will evacuate the area if any of the following occur

- If an emergency (such as a fire or chemical spill) develops
- If instructed by site supervision
- If instructed by the Shift Superintendent over the site radio or telephone system

After an evacuation, each Supervisor will verify that the employees that he/she supervises are accounted for

Radios will be used by field personnel to maintain contact with the Superintendent or other designated persons in the trailers who have access to telephones. The Safety Designee or Superintendent will monitor the radio frequency in use by field personnel at all times during field

operations. At least one radio will be onsite during construction hours. More radios may be issued to other personnel as needed.

Construction site personnel will be briefed during initial orientation on the Emergency Response Plan and participate in any rehearsals conducted by RMRS Emergency Preparedness, unless specifically exempted by RFETS.

In the event of a known or suspected injury or illness caused by exposure to a hazardous substance or physical agent, the Superintendent and Safety Professional will be notified. Additionally, the worker(s) will be transported to the RFETS medical facility for evaluation, accompanied by the Safety Designee or Safety Professional and the Superintendent.

Further medical evaluation will be in accordance with the symptoms, hazard involved, exposure level, and specific medical surveillance requirements.

All injuries, regardless of severity, will require the person to report to Occupational Medicine for evaluation. All injuries require that an Individual Accident/Injury Form (DOE 5484 3) be completed and distributed within 24 hours of the injury. OSHA Recordable injuries additionally require the completion of an OSHA Reportable Injuries Form (Form 101). The OHM Safety Professional will determine OSHA recordability for all injuries to OHM personnel. The OHM Safety Professional will maintain the OSHA 200 Log for the project. All accidents, injuries and near misses must be reported immediately to the Superintendent, Safety Professional and the CTR. The OHM Superintendent, with assistance from the Safety Designee or Safety Professional, will conduct a thorough, documented, investigation of all accidents, injuries and near misses.

If unexpected hazards are encountered, then work will stop. Restart Authorization will be provided by the South Side and Environmental Restoration Project Vice President or his designee as required by Operations Directive.

APPENDIX 1

OHM

SAFETY AND HEALTH PROFESSIONAL/SAFETY DESIGNEE QUALIFICATIONS

Richard L. Barcum, CSP, CHMM

Summary of Experience

- CSP/CHMM with 8 years of experience effectively developing and managing proactive, comprehensive safety and health programs in a variety of industrial and construction settings
- Extensive knowledge of OSHA, EPA, ANSI and NFPA safety and health standards/regulations
- Extensive knowledge of OSHA Voluntary Protection Program (VPP)
- Extensive knowledge of Worker's Compensation Law
- Proven ability to effectively communicate goals, objectives and expectations to all levels, including craft (union/non-union) personnel, project management, senior management and clientele.
- Responsible, organized self-starter with strong people skills. Excellent communication skills

Safety and Health Program Development and Management

- Develop and implement safety and health policies at Rocky Flats Environmental Technology Site.
- Manage safety and health program at Dept. of Energy former nuclear weapons production facility
- Developed, implemented and managed Process Safety Management program at Rocky Flats Environmental Technology Site
- Prepared Site Specific Safety and Health Plans for environmental remediation projects
- Responsible for two (2) successful, surprise OSHA inspections which resulted in zero (0) violations
- Utilize a variety of risk assessment/process safety management tools
- Effectively managed entry level safety and health personnel, as well as, several safety and health programs, over a six (6) state geographical area for OHM Remediation Services
- Served as Intern District Health and Safety Manager for OHM Remediation Services
- Effectively developed and delivered all required OSHA training, including OSHA 40 Hour HAZWOPER Training.
- Prepared Site Specific Safety and Health Plans for environmental remediation projects
- Responsible for two (2) successful, surprise OSHA inspections which resulted in zero (0) violations
- Managed safety and health programs which have accrued over 2 million man-hours worked with zero (0) OSHA recordable injuries or illnesses
- Utilize a variety of risk assessment/process safety management tools

Management and Administration

- Responsible for the development of entry level safety and health personnel
- Developed proposals and cost estimates for potential environmental remediation contracts
- Supervised subcontracts (> \$1M) Negotiated subcontract terms and conditions Negotiated on the essential elements of subcontracts, including change orders
- Prepared and coordinated subcontract budgets and schedules with project managers, properly allocating necessary funds and work hours

Work History

Safety Manager	IT Group/OHM Energy Services	Denver, CO	12/98 - present
Safety Engineer	Los Alamos Technical Associates, Inc	Denver, CO	6/97 - 12/98
Safety Supervisor	OHM Remediation Services Corp	St Louis, MO/Denver CO	6/93 - 6/97
Safety Engineer	EG&G Idaho Inc	Idaho Falls, ID	8/91 - 6/93

Education

M S	University of Idaho	Industrial Technology Education, Safety	1995
B S	Northeast Missouri State University	Industrial Science, emphasis in safety	1991

Professional Certifications

Certified Safety Professional - Comprehensive Practice	1997	#15125
Certified Hazardous Materials Manager - Senior Level	1996	#7050

Training

- OSHA Hazardous Waste Supervisor
- Management Oversight and Risk Tree (MORT) Accident Investigator

OHM Energy Services

Project Summary

12/98 to Present Rocky Flats Environmental Technology Site, Golden, Colorado
Safety Manager for the Department of Energy (DOE) Program Management Office which is responsible for the execution of various hazardous waste remediation and general construction projects. Projects include relocation of influent/effluent lines at the Modular Storage Tanks, installation of a water treatment system at the East Trenches Plume, and Building 440 upgrades.

8/95 to 6/97 Colorado, Total Environmental Restoration Contract (TERC)

Safety Supervisor for the U.S. Dept. Army Corps of Engineers (USACE) TERC which consisted of the remediation of several hazardous waste sites in Colorado. Projects included the demolition of buildings contaminated with crystallized explosives, toxic metals and asbestos at the Pueblo Chemical Depot (Pueblo, Colorado), excavation and capping of three (3) landfills at the Fort Carson Army Depot (Colorado Springs, Colorado) and demolition of the above ground tank farm and Submersed Quench Incinerator (SQI) and the remediation of two (2) storage ponds contaminated with pesticides, toxic metals, hydrazine, and ammonia at the Rocky Mountain Arsenal (Denver, Colorado)

4/95 to 8/95 Johnston Atoll, U.S. Territory

Safety Supervisor for U S Navy contract which consisted of the removal, stabilization and solidification of approximately 15,000 cubic yards of lead contaminated waste from the Johnston Atoll Solid Waste Burn Pit

12/94 to 4/95 Bunker Hill Mine Superfund Site, Kellogg, Idaho

Safety Supervisor for USACE/U S EPA contract which consisted of the demolition of eighty (80) buildings contaminated with toxic metals and asbestos at the Bunker Hill Mine Superfund Site This project required regular interaction with the public and media in the form of bi-weekly status Question and Answer (Q&A) sessions in a public meeting format. This project included a Federal OSHA inspection with resulted in no safety and health violations

11/94 to 11/94 New London Submarine Base, Groton, Connecticut

Safety Supervisor for U S Navy contract which consisted of the excavation of soil contaminated with lead, polychlorinated biphenyls, and polyaromatic hydrocarbons at the New London Submarine Base

8/94 to 10/94 Ames Laboratory, Ames, Iowa

Safety Supervisor for USACE/U S Dept of Energy (DOE) contract which involved the excavation of eight (8) landfills created during research for the Manhattan Project, contaminated with radioactive materials pyrophoric metals, and asbestos at the Ames Laboratory, including the excavation of over two hundred (200) drums of radioactive waste and pyrophoric metals and over thirty (30) laboratory packs of miscellaneous chemicals This project required regular interaction with the public and media in the form of bi-weekly status Q&S sessions in a public meeting format This project included a State of Iowa OSHA inspection which resulted in no safety and health violations

6/93 to 8/94 Weldon Spring Remedial Action Project, Weldon Spring, Missouri

Safety Manager for DOE contract which consisted of the decontamination and dismantlement of eleven (11) buildings contaminated with radioactive waste and asbestos at the Weldon Spring Superfund Site

NOTE With the exception of the Weldon Spring, Missouri project, all of the above listed projects were completed ahead of schedule, under budget and with zero (0) OSHA Recordable accidents

Years of Related Experience:

Twenty

Strong Points:

- Willness to Adapt
- Field Experience
- Quick Learner
- Hard Worker

Career Goals:

- Ability to Utilize Experience
- Long Term Employment
- Excellent Atmosphere
- Room to Grow

PROFESSIONAL PROFILE

As a seasoned environmental Health and Safety Professional with close to twenty years experience in occupational safety & health management, I have gained vast expertise in all aspects of general industry and environmental safety management program coordination. This experience includes development and implementation of complex corporate health & safety programs, training of personnel in proper safety procedures and guidelines plus project surveillance and loss control functions. I also have direct experience in the coordination of multi-disciplinary personnel, including those of governmental agencies on the state and federal levels, and supervision of up to 125 personnel.

Additional responsibilities have included emergency response to hazardous material incidents and activity coordination, remedial project management, site supervision/project cost management for EPA Superfund sites and remedial abatement projects. Concurrent responsibilities have included serving as a consultation team member for management firms and governmental agencies U S and foreign.

As a consultation team member I performed such tasks as providing on-site consultation and preparation of written guidelines concerning issues associated with occupational health & safety, preparation of programs and procedures, and industrial hygiene.

These additional duties have included providing guidance and recommendations for occupational protection and safety, fire prevention and preparedness construction safety consultation, and other industrial safety and management related issues.

EMPLOYMENT HISTORY

ASSOCIATED ENVIRONMENTAL SAFETY

(1995 - Pres.)

Safety Consultant

Littleton Colorado

Currently employed as a safety consultant providing services to numerous construction and environmental management firms throughout the Rocky Mountain region. Primary responsibilities include development of corporate health & safety programs including drug and alcohol awareness, confined space operations, training,

hearing conservation and waste management Other duties include performing site safety audits to ensure compliance with regulatory agencies and the clients written health & safety program

Additional duties include performing accident investigations as needed and written program auditing

PARK ENVIRONMENTAL TECHNICAL SERVICES (CMTS) (1992 - 1995)

Compliance Manager

Denver, Colorado

Served as corporate compliance manager for this nationwide environmental management firm Responsibilities included monitoring contractors safety programs and procedures at projects such as the Denver International Airport, Coors Field, and numerous large construction sites This included reviewing all contractors submitted health & safety programs, hazard communication programs, and job hazard analysis Assist in emergency response activities involving the remediation of hazardous substance spills Consult with contractors on improving the overall safety of site activities

Additional responsibilities also included preparation of corporate safety programs such as health and safety, drug and alcohol awareness, hazard communication, and hearing conservation Other duties included performing safety audits and inspections, traffic control management and providing industrial hygiene functions

RIEDEL ENVIRONMENTAL SERVICES, INC. (1991 - 1992)

Regional Health & Safety Manager

Denver, Colorado

Performed basic and advanced health & safety training, atmospheric air monitoring/personnel air sampling, and preparation of site specific safety plans Coordinated medical monitoring, workers compensation, early return to work drug and alcohol awareness, and hearing conservation programs Performed vehicle fleet safety inspections and coordinated the maintenance of vehicles and heavy equipment along with coordination and maintenance of commercial drivers records and vehicle files

Additional duties included assistance in project cost estimating and bid proposal preparation and the supervision of the purchase of safety equipment operational supplies, and instrumentation

ARCUS ENVIRONMENTAL SERVICES, INC. (1988 - 1991)

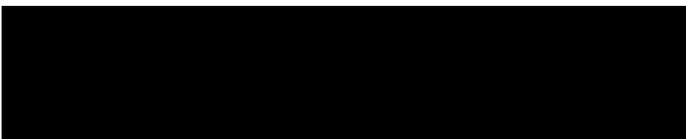
Vice President of Health and Safety

Englewood, Colorado

Managed all corporate health & safety programs and procedures general operations including transportation division sales/marketing team and project estimating/bidding task force for this nationwide consulting and service firm Key member in the design, permitting, and construction of hazardous waste management and recycling facilities throughout the United States Prepared company health & safety program, medical monitoring procedures substance abuse, and employee training program

Other duties included performing environmental impact and feasibility studies, excavation and confined space safety inspections and emergency response program management Managed the purchase and maintenance of safety equipment operational equipment and supplies

References furnished upon request



Position Desired **HEALTH AND SAFETY SPECIALIST**

Summary Health and Safety specialist with 4 years of experience in occupational health and Safety management and planning including industrial hygiene and sampling protocol, OSHA regulation, Chemical usage, and employee training. Four years experience as a safety technician in health and safety regulatory compliance.

Experience **Spectrum Services Inc , Denver, Co** (1997 to Present)
Industrial Hygienist

- Implement and maintain the Industrial Hygiene function for Spectrum
- Maintain programs and procedures for IH monitoring/sampling for Spectrum, The Pepsi Center, Ocean Journey, and Rocky Mountain Arsenal Projects
- Develop, Maintain and utilized knowledge of relevant Health & Safety regulations, and industry standards to track developments or changes
- Exercised professional judgment in the recognition, evaluation and control of occupational health hazards (Chemical, Physical, Ergonomic, & Physical hazard)
- Evaluate emerging data in toxicology, occupational medicine, epidemiology, safety and environmental sciences

Rust Environment and Infrastructure, Pueblo, Co (1995 to 1997)

Health & Safety Specialist

- Used expert knowledge of scientific principles to provide functional assistance to other Health & Safety team members
- Maintain Corp of Engineer, and OSHA standards, training, and REI safety policy
- Collect and analyze data to determine needs, trends, and patterns
- Assist REI with corporate audits
- Develop and implement remedial plans to address any identified Health & Safety deficiencies for REI, IBM, Chrysler/Dodge, and Samsung Projects

Colorado State Hospital, Pueblo, Co (1990 to 1996)

Safety Tech

- Maintain occupational hygiene program
- Serve as a Health & Safety technical resource
- Interface with health services on Health & Safety issues
- Develop and maintain the hazard communication program
- Collect and maintain the medical surveillance program

Education **University of Southern Colorado, Pueblo, Colorado** (1995)

B S , Biology/Chemistry, Minor Environmental Health

25

Geologist/Safety Expert

EXPERIENCE SUMMARY

■■■■■ combines her background in geology with her training in health and safety to ensure the safety of work performed in the investigation and remediation of hazardous waste sites. This includes serving as field geologist on hazardous waste sites, preparation and implementation of worker health and safety plans; teaching health and safety courses to hazardous waste workers to comply with OSHA regulations; and maintenance of health and safety records for the 85-person hazardous waste staff in ES's Denver office.

YEARS OF EXPERIENCE:

22

YEARS WITH PARSONS:

5

EDUCATION

B S in Mathematics, 1975, Hofstra University, Hempstead, New York

M S in Geology, 1983, Miami University, Oxford, Ohio

A S in Hazardous Materials Technology, 1990, Front Range Community College, Westminster, Colorado

EXPERIENCE

1992-Date Parsons Engineering Science, Inc
Lead Inspector (1995-Date) Performed lead base paint visual inspections and damage assessments in housing units at Randolph Air Force Base, San Antonio, Texas

- Asbestos Inspector (1995-Date) Performed asbestos surveys and sampling in various building types totaling over 600,000 square feet at Altus Air Force Base, Altus, Oklahoma, Randolph Air Force Base, San Antonio, Texas, and Tyndall Air Force Base, Panama City, Florida. Performed ACM condition assessments and material quantity estimates. Generated field data sheets for input into the PCV3 database. Prepared asbestos samples for shipment to the laboratory for analysis.
- Geologist (1993-Date) Performs field evaluations to confirm and delineate contamination at hazardous waste sites in Arizona and in Colorado, including the Lowry Air Force Base and Lowry Landfill Superfund site. Responsibilities include soil boring, geoprobe drilling and sampling piezocone and hydrocone systems, cone penetrometer investigations, hydropunching, monitoring well installation, and soil, groundwater, and surface water sampling.
- Corporate Instructor (1993-Date) Teaches OSHA refresher and confined-space entry training and the Denver office Illness and Injury Prevention Program.
- Environmental Scientist (1992-Date) Responsible for administration of the Denver office health and safety program. Activities include arranging for tracking of physicals and training requirements, conducting respirator fit tests, maintaining instrumentation calibration logs, coordinating corporate training courses, and preparing health and safety plans. Researched and developed a chemical database for corporate-wide health and safety use.



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- **Site Health and Safety Officer (1992-Date)** Provides construction and hazardous waste site safety oversight, maintains records, logs, and equipment; supervises and performs confined-space entries; and performs air monitoring, air sampling, RCRA waste characterizations, and waste management. Projects include hazardous waste site investigations and remedial action implementation activities at the Lowry Landfill NPL facility, Pueblo Depot Activity, and other sites in Texas, Oklahoma, New Mexico and Colorado

1990-Date Front Range Community College Westminster, Colorado **Adjunct Professor (1990-Date)** Teaches 40-hour and 8-hour health and safety courses and confined space entry training for work at hazardous waste sites in compliance with OSHA regulations Also developed supplementary handout material to the OSHA class Responsible for the groundwater sampling and monitoring portion of the field exercise for the 40-hour course

- Also taught site investigation and sampling field techniques and asbestos awareness and portions of the asbestos worker course according to AHERA and EPA requirements
- **Governor's Job Training Program Coordinator (1991-1992)** Responsible for the organization and administration of the FRCC grant program for the retraining of dislocated and unemployed workers from throughout Colorado into the hazardous material management/environmental field Duties included information intake and processing, qualifying participants, record keeping, coordination of program content and scheduling, supply requisitions, resume revisions, advisement, and job placement
- **Instructional Assistant (1990-1991)** Responsible for various administrative duties, including curriculum development, advisement, transcript evaluation, graduation reviews, resume assistance job placement assistance, technical editing, class preparation, and coordination of office functions Also responsible for the administration of Governor's Job Training Fast-Track and Scholarship Programs

- **Lab Assistant (1990)** Performed various clerical and essential duties including information intake and processing for the Governor's Job Training Program, and class/lab preparation

1983 Berrong Enterprises. **Geophysicist** Processed geophysical data to support oil and gas exploration in Texas; Oklahoma, and the midwestern United States

1981-1982 Amoco Production Company. Denver, Colorado **Geophysicist.** Processed and interpreted geophysical data to support oil and gas exploration throughout the western United States and Alaska

SPECIAL TRAINING

40-hour OSHA health and safety training with annual 8-hour refreshers for work at hazardous waste sites and the 8-hour training for site supervisors

Confined-Space Entry Training

Hazard Communication Standard Short Course

Emergency Response Technician Level III class in compliance with OSHA standards

Construction Services Health and Safety

Competent Person Course

Certified EPA/AHERA Asbestos Inspector/Management Planner

Lead Abatement Inspector and Supervisor/Contractor

Toxicology and Risk Assessments

DOT Regulatory Training

Hazardous Materials Handling and Transportation

Small Quantity Generator/Waste Minimization Short Course

Low-Cost, Risk-Based Remediation

ASTM Standards Technology Training for Ground Water Monitoring and Sampling

DOE Subcontractor Training for work at the Rocky Flats Environmental Technology Site

Quality Improvement Fundamentals Training



PAPERS AND PRESENTATIONS

Adjunct Professor, Front Range Community College
teaching the following

- 40-hour OSHA,
- OSHA refresher,
- Confined-space entry,
- Site investigation and sampling techniques,
- Asbestos awareness,
- Asbestos worker, and
- Introduction to hazardous materials management

Clay Mineralogy and Diagenesis in the Hockingport
Sandstone Lenticle, Dunkard Group
(Pennsylvanian-Permian) in Ohio and West Virginia
1983 Thesis prepared for completion of
Masters degree in Geology, Miami University,
Oxford, Ohio