

AMERADA HESS CORPORATION

MATERIAL SAFETY DATA SHEET

Methyl tert-Butyl Ether (MTBE)

MSDS No. 9922

CONDITIONS TO AVOID

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

INCOMPATIBLE MATERIALS

Keep away from strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, carbon dioxide, non-combusted hydrocarbons (smoke), irritating aldehydes and ketones, and other toxic vapors.

11. TOXICOLOGICAL PROPERTIES (rev. Apr-98)

ACUTE EFFECTS

Acute Dermal:	LD50 (rabbit): >10 g/kg	Eye Irritation (rabbits): mild to moderate
Acute Inhalation:	LC50 (rat): 35,000 ppm	Dermal irritation (rabbit): slight
Acute Oral:	LD50 (rat): 4.0 ml/kg	Dermal Sensitization: negative

CHRONIC EFFECTS AND CARCINOGENICITY

Carcinogenic: **IARC: NO** **NTP: NO** **OSHA: NO** **ACGIH: A3** (animal carcinogen)
MTBE has demonstrated some evidence of developmental toxicity in animal models.

MUTAGENICITY (genetic effects)

MTBE was positive in a single mutagenicity study following activation.

12. ECOLOGICAL INFORMATION (rev. Apr-98)

Keep out of sewers, drainage and waterways. Report spills and releases, as applicable, under Federal and State regulations. If released, MTBE will be expected to exhibit fairly high mobility in soil, and therefore may leach into groundwater. Refer to API Publication 4497, "Cost-Effective, Alternative Treatment Technologies For Reducing the Concentrations of Ethers and Alcohols in Groundwater."

13. DISPOSAL CONSIDERATIONS (rev. Apr-98)

Consult federal, state and local waste regulations to determine appropriate disposal options.

14. TRANSPORTATION INFORMATION (rev. Sep-94)

PROPER SHIPPING NAME:	Methyl tert-butyl ether
HAZARD CLASS AND PACKING GROUP:	3, PG II
DOT IDENTIFICATION NUMBER:	UN 2398
DOT SHIPPING LABEL:	FLAMMABLE LIQUID

15. REGULATORY INFORMATION (rev. Nov-96)

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, to state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the federal, state and/or local level. Consult those regulations applicable to your facility / operation. Consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) or, if not practical, the U.S. Coast Guard with follow-up to the National Response Center, as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

MTBE is a CERCLA hazardous substance and as such is subject to CERCLA and SARA federal reporting requirements. Reportable Quantity (pounds): 1000

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SARA SECTION 311/312 - HAZARD CLASSES

<u>ACUTE HEALTH</u>	<u>CHRONIC HEALTH</u>	<u>FIRE</u>	<u>SUDDEN RELEASE OF PRESSURE</u>	<u>REACTIVE</u>
X	X	X	--	--

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

INGREDIENT NAME	CONCENTRATION PERCENT BY WEIGHT
Methyl-tertiary butyl ether (MTBE) CAS NUMBER: 1634-04-4	> 97

CANADIAN REGULATORY INFORMATION (WHMIS)

Class B, Division 2 (Flammable Liquid)
Class D, Division 2, Subdivision B (Toxic by other means)

16. OTHER INFORMATION (rev. Nov-96)

NFPA® HAZARD RATING

HEALTH:	1	Slight
FIRE:	3	High
REACTIVITY:	0	Negligible

HMIS® HAZARD RATING

HEALTH:	1*	Slight
FIRE:	3	Serious
REACTIVITY:	0	Negligible

* Chronic

SUPERSEDES MSDS DATED: 11/21/96

ABBREVIATIONS:

AP = Approximately < = Less than > = Greater than
N/A = Not Applicable N/D = Not Determined ppm = parts per million

ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
AIHA	American Industrial Hygiene Association	OPA	Oil Pollution Act of 1990
ANSI	American National Standards Institute (212)642-4900	OSHA	U.S. Occupational Safety & Health Administration
API	American Petroleum Institute 202)682-8000	PEL	Permissible Exposure Limit (OSHA)
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act	RCRA	Resource Conservation and Recovery Act
DOT	U.S. Department of Transportation [General Info: (800)467-4922]	REL	Recommended Exposure Limit (NIOSH)
EPA	U.S. Environmental Protection Agency	SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
HMIS	Hazardous Materials Information System	SCBA	Self-Contained Breathing Apparatus
IARC	International Agency For Research On Cancer	SPCC	Spill Prevention, Control, and Countermeasures
MSHA	Mine Safety and Health Administration	STEL	Short-Term Exposure Limit (generally 15 minutes)
NFPA	National Fire Protection Association (617)770-3000	TLV	Threshold Limit Value (ACGIH)
NIOSH	National Institute of Occupational Safety and Health	TSCA	Toxic Substances Control Act
NOIC	Notice of Intended Change (proposed change to ACGIH TLV)	TWA	Time Weighted Average (8 hr.)
		WEEL	Workplace Environmental Exposure Level (AIHA)
		WHMIS	Canadian Workplace Hazardous Materials Information System

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Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: MAPLLC PETROLEUM CRUDE OIL
MARATHON MSDS NO: 0110MAR019



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1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME:
MAPLLC PETROLEUM CRUDE OIL

SYNONYMS:
Crude Oil, MAPLLC; MAPLLC CRUDE OIL;
MAPLLC PETROLEUM CRUDE OIL; PETROLEUM
CRUDE OIL, MAPLLC

CHEM FAMILY: PETROLEUM HYDROCARBON
CHEM FORMULA: COMPLEX MIXTURE
PRODUCT CODE: NONE

MANUFACTURER / DISTRIBUTOR:
MARATHON ASHLAND PETROLEUM LLC
539 SOUTH MAIN STREET
FINDLAY OH 45840

EMERGENCY PHONE NUMBERS:
(877) 627-5463
(800) 424-9300

MSDS INFORMATION: (419) 421-3070

MSDS REVISION DATE: 06/11/1998

INFORMATION SUPPLIED BY: CRAIG M. PARKER
MANAGER, TOXICOLOGY AND PRODUCT SAFETY

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2. COMPOSITION / INFORMATION ON INGREDIENTS

PRODUCT INFORMATION:

MAPLLC PETROLEUM CRUDE OIL (CAS # 8002-05-9) IS A/AN
COMPLEX MIXTURE OF PARAFFINS, CYCLOPARAFFINS AND AROMATIC
HYDROCARBONS. CAN CONTAIN MINOR AMOUNTS OF SULFUR, NITROGEN, AND
OXYGEN COMPOUNDS AS WELL AS TRACE AMOUNTS OF HEAVY METALS SUCH AS
NICKEL, VANADIUM AND LEAD. COMPOSITION VARIES DEPENDING ON SOURCE OF
CRUDE.

	PERCENT RANGE	CAS NUMBER
COMPONENTS:		
PETROLEUM CRUDE OIL	98.00-100.00	8002-05-9
TOLUENE	0.00- 5.00	108-88-3
XYLENE	0.00- 5.00	1330-20-7
HYDROGEN SULFIDE	0.00- 4.00	7783-06-4
SULFUR COMPOUNDS	0.00- 3.00	MIXTURE
NORMAL HEXANE	0.00- 3.00	110-54-3
BENZENE	0.00- 2.00	71-43-2

EXPOSURE GUIDELINES

	LIMIT	TYPE	SOURCE
PRODUCT:			
PETROLEUM CRUDE OIL	NONE ESTABLISHED		

COMPONENTS:

PETROLEUM CRUDE OIL	NONE ESTABLISHED		
TOLUENE	50.00 PPM	8 HR TWA	ACGIH
	100.00 PPM	8 HR TWA	OSHA*
	150.00 PPM	STEL	OSHA*
* THE MANUFACTURER HAS VOLUNTARILY ELECTED TO REFLECT EXPOSURE LIMITS CONTAINED IN OSHA'S 1989 AIR CONTAMINANTS STANDARD IN ITS MSDS'S, EVEN THOUGH CERTAIN OF THOSE EXPOSURE LIMITS WERE VACATED IN 1992.			
XYLENE	100.00 PPM	8 HR TWA	ACGIH
	150.00 PPM	STEL	ACGIH
	100.00 PPM	8 HR TWA	OSHA*
	150.00 PPM	STEL	OSHA*
* THE MANUFACTURER HAS VOLUNTARILY ELECTED TO REFLECT EXPOSURE LIMITS CONTAINED IN OSHA'S 1989 AIR CONTAMINANTS STANDARD IN ITS MSDS'S, EVEN THOUGH CERTAIN OF THOSE EXPOSURE LIMITS WERE VACATED IN 1992.			
HYDROGEN SULFIDE	10.00 PPM	8 HR TWA	ACGIH
	15.00 PPM	STEL	ACGIH
	10.00 PPM	8 HR TWA	OSHA*
	15.00 PPM	STEL	OSHA*

* THE MANUFACTURER HAS VOLUNTARILY ELECTED TO REFLECT EXPOSURE LIMITS CONTAINED IN OSHA'S 1989 AIR CONTAMINANTS STANDARD IN ITS MSDS'S, EVEN THOUGH CERTAIN OF THOSE EXPOSURE LIMITS WERE VACATED IN 1992.

SULFUR COMPOUNDS	NONE ESTABLISHED		
NORMAL HEXANE	50.00 PPM	8 HR TWA	ACGIH
	500.00 PPM	8 HR TWA	OSHA
BENZENE	.50 PPM	8 HR TWA	ACGIH
	2.50 PPM	STEL	ACGIH
	1.00 PPM	8 HR TWA	OSHA
	5.00 PPM	STEL	OSHA
OSHA ACTION LEVEL 0.50 PPM (8 HR TWA)			

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3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

PETROLEUM CRUDE OIL IS AMBER TO BLACK IN COLOR DEPENDING ON THE SOURCE. OUR CRUDE POSSESSES A ROTTEN EGG OR SULFUR ODOR. CRUDE OIL IS A VOLATILE AND EXTREMELY FLAMMABLE LIQUID AND VAPORS MAY CAUSE FLASH FIRES. KEEP AWAY FROM HEAT, FLAME AND SOURCES OF IGNITION. CRUDE OIL CAN CONTAIN TOXIC LEVELS OF HYDROGEN SULFIDE VAPORS THAT ACCUMULATE IN THE VAPOR SPACES OF STORAGE AND TRANSPORT COMPARTMENTS. THESE VAPORS CAUSE EYE, SKIN, AND RESPIRATORY TRACT IRRITATION AND ASPHYXIATION. CRUDE OIL CAN ALSO CONTAIN SIGNIFICANT CONCENTRATIONS OF BENZENE WHICH HAS BEEN SHOWN TO CAUSE CANCER OR BE TOXIC TO BLOOD-FORMING ORGANS. IF SWALLOWED, THE VOLATILE COMPONENTS OF CRUDE OIL MAY GET SUCKED INTO THE LUNGS (ASPIRATED) AND CAUSE LUNG DAMAGE OR EVEN DEATH.

OSHA WARNING LABEL:

DANGER!
FLAMMABLE LIQUID
MAY VENT HARMFUL CONCENTRATIONS OF HYDROGEN SULFIDE (H₂S) GAS
WHICH CAN CAUSE RESPIRATORY IRRITATION AND ASPHYXIATION.
CONTAINS BENZENE WHICH MAY CAUSE
CANCER OR BE TOXIC TO BLOOD-FORMING ORGANS.
ASPIRATION (INADVERTENT SUCTION) OF LIQUID INTO THE LUNGS
CAN PRODUCE CHEMICAL PNEUMONIA OR EVEN DEATH.

POTENTIAL HEALTH EFFECTS

EYE:

LIQUID OR VAPOR CONTACT MAY RESULT IN SLIGHT EYE IRRITATION.

SKIN:

PROLONGED AND REPEATED LIQUID CONTACT CAN CAUSE DERMATITIS, FOLLICULITIS OR OIL ACNE.

INHALATION:

VAPORS AND FUMES CAN CAUSE RESPIRATORY AND NASAL IRRITATION. SEE SECTIONS 7 AND 11 REGARDING THE TOXICITY AND POSSIBLE FORMATION/ACCUMULATION OF HYDROGEN SULFIDE GAS.

INGESTION:

MAY BE TOXIC BY INGESTION. ASPIRATION (INADVERTENT SUCTION) OF LIQUID OF THE LIGHT HYDROCARBON FRACTION INTO THE LUNG CAN PRODUCE CHEMICAL PNEUMONITIS, PULMONARY EDEMA/HEMORRHAGE AND EVEN DEATH.

CARCINOGEN LISTING:

THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS DETERMINED THAT THERE IS SUFFICIENT EVIDENCE FOR THE CARCINOGENICITY OF CRUDE OIL IN HUMANS. LIFETIME SKIN PAINTING STUDIES WITH DIFFERENT WHOLE CRUDE OILS HAVE PRODUCED TUMORS IN ANIMALS FOLLOWING PROLONGED AND REPEATED SKIN CONTACT. IARC HAS DETERMINED THAT THERE IS LIMITED EVIDENCE FOR THE CARCINOGENICITY OF CRUDE OIL IN ANIMALS.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

PREEXISTING SKIN, EYE AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO COMPONENTS OF THIS PRODUCT.

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4. FIRST AID MEASURES

EYE:

FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. IF SYMPTOMS OR IRRITATION OCCUR, CALL A PHYSICIAN.

SKIN:

WASH WITH SOAP AND LARGE AMOUNTS OF WATER. REMOVE CONTAMINATED CLOTHING. IF SYMPTOMS OF IRRITATION OCCUR, CALL A PHYSICIAN.

INHALATION:

IF AFFECTED, MOVE PERSON TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF NOT BREATHING OR IF NO HEARTBEAT, GIVE ARTIFICIAL RESPIRATION OR CARDIOPULMONARY RESUSCITATION (CPR). IMMEDIATELY CALL A PHYSICIAN. IF SYMPTOMS OF IRRITATION OCCUR WITH ANY EXPOSURE, CALL A PHYSICIAN.

INGESTION:

INGESTION NOT LIKELY. IF SWALLOWED, DO NOT INDUCE VOMITING AND DO NOT GIVE LIQUIDS. IMMEDIATELY CALL A PHYSICIAN.

NOTES TO PHYSICIAN:

NO DATA AVAILABLE.

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5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT:	20-100 F
AUTOIGNITION TEMP:	NO DATA AVAILABLE
EXPLOSIVE LIMITS (% BY VOLUME IN AIR)	
LOWER:	NO DATA AVAILABLE
UPPER:	NO DATA AVAILABLE

FIRE AND EXPLOSION HAZARDS:

THIS MATERIAL HAS BEEN DETERMINED TO BE A FLAMMABLE LIQUID. VAPORS MAY TRAVEL ALONG THE GROUND OR BE MOVED BY VENTILATION AND IGNITED BY MANY SOURCES SUCH AS PILOT LIGHTS, SPARKS, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING. FLASHBACK MAY OCCUR ALONG VAPOR TRAIL. FOR ADDITIONAL FIRE RELATED INFORMATION, SEE NFPA 30 OR NORTH AMERICAN EMERGENCY RESPONSE GUIDE 115.

EXTINGUISHING MEDIA:

CLASS B FIRE EXTINGUISHING MEDIA SUCH AS CO₂, DRY CHEMICAL OR WATER SPRAY CAN BE USED. FIRE FIGHTING SHOULD BE ATTEMPTED ONLY BY THOSE WHO ARE ADEQUATELY TRAINED AND EQUIPPED WITH PROPER PROTECTIVE EQUIPMENT.

SPECIAL FIRE FIGHTING INSTRUCTIONS:

AVOID USING STRAIGHT WATER STREAMS. WATER SPRAY AND FOAM (AFFF/ATC) MUST

BE APPLIED CAREFULLY TO AVOID FROTHING. AVOID EXCESSIVE APPLICATION. WATER CAN BE USED TO COOL EXPOSED SURFACES FROM AS FAR A DISTANCE AS POSSIBLE. KEEP RUN-OFF WATER OUT OF SEWERS AND WATER SOURCES.

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6. ACCIDENTAL RELEASE MEASURES

ISOLATE AND EVACUATE AREA. SHUT OFF SOURCE IF SAFE TO DO SO. ADVISE NATIONAL RESPONSE CENTER (800-424-8802) IF SUBSTANCE HAS ENTERED A WATERWAY. NOTIFY LOCAL HEALTH AND POLLUTION CONTROL AGENCIES, IF APPROPRIATE. CONTAIN LIQUID WITH SAND OR SOIL. RECOVER AND RETURN FREE LIQUID TO PROPER CONTAINERS. USE SUITABLE ABSORBENT MATERIALS SUCH AS VERMICULITE, SAND, OR CLAY TO CLEAN UP RESIDUAL LIQUIDS.

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7. HANDLING AND STORAGE

COMPLY WITH ALL APPLICABLE OSHA, NFPA AND CONSISTENT LOCAL REQUIREMENTS. USE APPROPRIATE GROUNDING AND BONDING PRACTICES. STORE IN PROPERLY CLOSED CONTAINERS THAT ARE APPROPRIATELY LABELED AND IN A COOL, WELL-VENTILATED AREA. DO NOT EXPOSE TO HEAT, OPEN FLAME, OXIDIZERS OR OTHER SOURCES OF IGNITION. DO NOT CUT, DRILL, GRIND OR WELD ON EMPTY CONTAINERS SINCE THEY MAY CONTAIN EXPLOSIVE RESIDUES.

HARMFUL CONCENTRATIONS OF HYDROGEN SULFIDE (H₂S) GAS CAN ACCUMULATE IN EXCAVATIONS AND LOW-LYING AREAS AS WELL AS THE VAPOR SPACE OF STORAGE AND BULK TRANSPORT COMPARTMENTS. STAY UPWIND AND VENT OPEN HATCHES BEFORE UNLOADING. AVOID SKIN CONTACT. EXERCISE GOOD PERSONAL HYGIENE INCLUDING REMOVAL OF SOILED CLOTHING AND PROMPT WASHING WITH SOAP AND WATER.

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8. EXPOSURE CONTROL / PERSONAL PROTECTION

ENGINEERING CONTROLS:

LOCAL OR GENERAL EXHAUST REQUIRED IN ENCLOSED AREAS OR WITH INADEQUATE VENTILATION.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION:

NOT NORMALLY REQUIRED FOR ROUTINE OPERATIONS. SUPPLIED AIR RESPIRATORS

SHOULD BE USED IF OPERATING CONDITIONS CREATE AIRBORNE CONCENTRATIONS WHICH EXCEED EXPOSURE LIMITS FOR ANY INDIVIDUAL COMPONENTS (INCLUDING H₂S).
RESERVE RESPIRATOR PROTECTION FACTOR CRITERIA CITED IN ANSI Z88.2. SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED FOR FIRE FIGHTING.

SKIN PROTECTION:

NEOPRENE OR NITRILE GLOVES TO PREVENT SKIN CONTACT.

EYE PROTECTION:

NO SPECIAL EYE PROTECTION IS NORMALLY REQUIRED. WHERE SPLASHING IS POSSIBLE, WEAR SAFETY GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE EQUIPMENT:

USE EXPLOSION-PROOF EQUIPMENT.

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9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	100-1000 F
MELTING POINT:	NO DATA AVAILABLE
SPECIFIC GRAVITY (H ₂ O=1):	0.8-1.0
PACKING DENSITY (KG/M ³):	NO DATA AVAILABLE
% SOLUBILITY IN WATER:	NEGLIGIBLE
VAPOR DENSITY (AIR=1):	NO DATA AVAILABLE
VAPOR PRESSURE:	0-724 MMHG
PH INFORMATION:	NO DATA AVAILABLE
% VOLATILES BY VOL:	NO DATA AVAILABLE
EVAPORATION RATE:	NO DATA AVAILABLE
APPEARANCE:	AMBER TO BLACK VISCOUS LIQUID
ODOR:	MILD OR ROTTEN EGG ODOR
ODOR THRESHOLD (PPM):	NO DATA AVAILABLE

ADDITIONAL PROPERTIES:

DENSITY: 6.6-8.2 LBS/GALLON

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10. STABILITY AND REACTIVITY

STABILITY:

THE MATERIAL IS STABLE AT 70 F, 760MM PRESSURE.

CONDITIONS TO AVOID:

EXCESSIVE HEAT, SOURCES OF IGNITION.

HAZARDOUS DECOMPOSITION PRODUCTS:

CARBON MONOXIDE, HYDROGEN SULFIDE, ALDEHYDES, AROMATIC, OTHER HYDROCARBONS.

INCOMPATIBLE MATERIALS:

STRONG OXIDIZING AGENTS SUCH AS CHLORATES, NITRATES, PEROXIDES.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR.

CONDITIONS TO AVOID:

NO DATA AVAILABLE.

ADDITIONAL COMMENTS:

NO DATA AVAILABLE.

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11. TOXICOLOGICAL INFORMATION

LIFETIME SKIN PAINTING STUDIES IN ANIMALS WITH CRUDE OIL FRACTIONS HAVE PRODUCED WEAK TO MODERATE CARCINOGENIC ACTIVITY FOLLOWING PROLONGED AND REPEATED EXPOSURE. WASHING THE ANIMALS' SKIN WITH SOAP AND WATER BETWEEN APPLICATIONS GREATLY REDUCES TUMOR FORMATION.

REPEATED DERMAL APPLICATION OF TWO DIFFERENT CRUDE OILS IN RATS PRODUCED SYSTEMIC TOXICITY IN BLOOD, LIVER, THYMUS AND BONE MARROW. REPEATED DERMAL APPLICATION TO PREGNANT RATS PRODUCED MATERNAL TOXICITY AND FETAL DEVELOPMENTAL TOXICITY.

HYDROGEN SULFIDE CONCENTRATIONS WILL VARY SIGNIFICANTLY DEPENDING ON THE SOURCE AND SULFUR CONTENT OF THE CRUDE. SWEET CRUDES (<0.5% SULFUR) MAY CONTAIN TOXICOLOGICALLY SIGNIFICANT LEVELS OF HYDROGEN SULFIDE IN THE VAPOR SPACES OF BULK STORAGE TANKS AND TRANSPORT COMPARTMENTS. CONCENTRATIONS OF H_2S AS LOW AS 10 PPM OVER AN 8 HOUR WORKSHIFT MAY CAUSE EYE OR THROAT IRRITATION. PROLONGED BREATHING OF 50-100 PPM H_2S VAPORS CAN PRODUCE SIGNIFICANT EYE AND RESPIRATORY IRRITATION. SOUR CRUDES COMMONLY CONTAIN

EXTREMELY HIGH CONCENTRATIONS OF H₂S (500-70,000 PPM) IN THE VAPOR SPACES OF BULK STORAGE VESSELS. EXPOSURE TO 250-600 PPM FOR 15-30 MINUTES CAN PRODUCE HEADACHE, DIZZINESS, NERVOUSNESS, STAGGERING GAIT, NAUSEA AND PULMONARY EDEMA OR BRONCHIAL PNEUMONIA. CONCENTRATIONS >1,000 PPM WILL CAUSE IMMEDIATE UNCONSCIOUSNESS AND DEATH THROUGH RESPIRATORY PARALYSIS.

SUMMARY OF HEALTH EFFECT DATA ON CRUDE OIL COMPONENTS:

THIS PRODUCT MAY CONTAIN BENZENE AT A LEVEL OF >0.1%. REPEATED OR PROLONGED EXPOSURE TO BENZENE AT CONCENTRATIONS IN EXCESS OF THE TLV MAY CAUSE SERIOUS INJURY TO BLOOD-FORMING ORGANS. SIGNIFICANT CHRONIC EXPOSURE TO BENZENE VAPOR HAS BEEN REPORTED TO PRODUCE VARIOUS BLOOD DISORDERS, RANGING FROM ANEMIA TO CANCER (DIFFERENT FORMS OF LEUKEMIA) IN MAN. BENZENE PRODUCED TUMORS IN RATS AND MICE IN LIFETIME CHRONIC TOXICITY STUDIES, BUT THE RESPONSE HAS NOT BEEN CONSISTENT ACROSS SPECIES, STRAIN, SEX OR ROUTE OF EXPOSURE. ANIMAL STUDIES ON BENZENE HAVE DEMONSTRATED IMMUNE TOXICITY, CHROMOSOMAL ABERRATIONS, TESTICULAR EFFECTS AND ALTERATIONS IN REPRODUCTIVE CYCLES AND EMBRYO/FETOTOXICITY, BUT NOT TERATOGENICITY.

THIS PRODUCT MAY CONTAIN HEXANE AT A LEVEL OF >1.0%. STUDIES IN LABORATORY ANIMALS HAVE PRODUCED SYSTEMIC TOXICITY IN BLOOD, SPLEEN AND LUNGS. FETOTOXICITY HAS BEEN OBSERVED AT HEXANE CONCENTRATIONS THAT PRODUCED MATERNAL TOXICITY. LONG TERM EXPOSURE TO HIGH CONCENTRATIONS OF HEXANE HAS BEEN SHOWN TO CAUSE TESTICULAR EFFECTS AND NERVOUS SYSTEM DAMAGE.

THIS PRODUCT MAY CONTAIN TOLUENE AT A LEVEL OF >1.0%. DELIBERATE INHALATION OF HIGH CONCENTRATIONS OF TOLUENE HAS BEEN SHOWN TO CAUSE LIVER, KIDNEY AND BRAIN DAMAGE AND CENTRAL NERVOUS SYSTEM EFFECTS. EXCESSIVE TOLUENE EXPOSURE MAY CAUSE CARDIAC SENSITIZATION AND POSSIBLE HEARING LOSS. EXPOSURE TO PREGNANT RATS AND MICE DURING GESTATION TO TOLUENE PRODUCED SOME MATERNAL AND DEVELOPMENTAL TOXICITY. DECREASED LEARNING CAPABILITY AND DEFICITS IN OPERANT BEHAVIOR HAVE BEEN OBSERVED IN ANIMALS EXPOSED TO TOLUENE ABOVE THE TLV.

THIS PRODUCT MAY CONTAIN XYLENE AT A LEVEL OF >1.0%. GROSS OVEREXPOSURE IN HUMANS TO XYLENES HAS BEEN REPORTED TO CAUSE LUNG, LIVER, KIDNEY, HEART AND BRAIN DAMAGE AS WELL AS NEUROLOGIC DISTURBANCES. EXCESSIVE XYLENE EXPOSURE MAY CAUSE CARDIAC SENSITIZATION. LABORATORY ANIMALS EXPOSED TO HIGH DOSES OF XYLENE SHOWED EVIDENCE OF HEARING LOSS AND EFFECTS IN LIVER, KIDNEYS, LUNGS, SPLEEN, HEART AND ADRENALS. EXPOSURE TO PREGNANT ANIMALS DURING GESTATION TO SIGNIFICANT CONCENTRATIONS OF XYLENE PRODUCED MATERNAL, FETAL AND DEVELOPMENTAL TOXICITY. REPEATED INHALATION OF HIGH XYLENE CONCENTRATIONS HAVE SHOWN BEHAVIORAL CHANGES IN ANIMALS AND MAN.

COMPONENTS OF CRUDE OIL DO NOT PRESENT A SIGNIFICANT HEALTH RISK IN THE CONCENTRATIONS PRESENT IN CRUDE OIL AT EXPOSURES NOT EXCEEDING THE EXPOSURE LIMITS STATED IN SECTION 2.

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12. ECOLOGICAL INFORMATION

SPILLING ACTION OF OIL CAN DESTROY BIRDS, PLANKTON, ALGAE AND FISHES. KEEP OUT OF ALL BODIES OF WATER AND SEWAGE DRAINAGE SYSTEMS.

13. DISPOSAL CONSIDERATIONS

THIS PRODUCT AS SUPPLIED IS NOT SPECIFICALLY LISTED AS AN EPA RCRA HAZARDOUS WASTE ACCORDING TO FEDERAL REGULATIONS (40 CFR 261-271). HOWEVER, WHEN DISCARDED OR DISPOSED OF, IT MAY MEET THE CRITERIA OF AN "IGNITABLE" HAZARDOUS WASTE. THIS PRODUCT COULD ALSO CONTAIN BENZENE AT >0.5 PPM AND COULD EXHIBIT THE CHARACTERISTICS OF "TOXICITY" AS DETERMINED BY THE TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP). THIS MATERIAL COULD ALSO BECOME A HAZARDOUS WASTE IF MIXED OR CONTAMINATED WITH A LISTED HAZARDOUS WASTE. IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE IF DISPOSAL MATERIAL IS HAZARDOUS ACCORDING TO FEDERAL, STATE AND LOCAL REGULATIONS.

14. TRANSPORTATION INFORMATION

49 CFR 172.101:

PROPER SHIPPING NAME:	PETROLEUM CRUDE OIL
DOT CLASSIFICATION:	3
DOT IDENTIFICATION NUMBER:	UN 1267
PACKING GROUP:	PG II

15. REGULATORY INFORMATION

THE FOLLOWING REGULATIONS APPLY TO THIS PRODUCT:

OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200):

THIS PRODUCT HAS BEEN EVALUATED AND DETERMINED TO BE HAZARDOUS AS DEFINED IN OSHA'S HAZARD COMMUNICATION STANDARD.

EPA TOXIC SUBSTANCES CONTROL ACT (40 CFR PART 710):

THIS PRODUCT AND/OR ITS COMPONENTS ARE LISTED ON THE TSCA CHEMICAL INVENTORY.

EPA SARA TITLE III SUPERFUND AMENDMENTS & REAUTHORIZATION ACT - EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986.

EXTREMELY HAZARDOUS SUBSTANCES (40 CFR PART 355):

THIS PRODUCT CONTAINS THE FOLLOWING COMPONENT(S) IDENTIFIED ON APPENDIX A AND B OF THE EXTREMELY HAZARDOUS SUBSTANCE LIST (AT A LEVEL OF 1% OR GREATER IF HAZARDOUS; 0.1% OR GREATER IF CARCINOGENIC):

---COMPONENT---	REPORTABLE ---QUANTITY (LBS)---	THRESHOLD PLANNING ---QUANTITY (LBS)---
HYDROGEN SULFIDE	100	500

EMERGENCY RELEASE NOTIFICATIONS (40 CFR PART 355):

THIS PRODUCT CONTAINS THE FOLLOWING COMPONENT(S) IDENTIFIED EITHER AS AN EXTREMELY HAZARDOUS SUBSTANCE (40 CFR 355) OR A CERCLA HAZARDOUS SUBSTANCE (40 CFR 302) WHICH IN CASE OF A SPILL OR RELEASE MAY BE SUBJECT TO EMERGENCY RELEASE REPORTING REQUIREMENTS:

HYDROGEN SULFIDE (REPORTING QUANTITY = 100 LBS)

MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR PART 370):

THE FOLLOWING EPA HAZARD CATEGORIES APPLY TO THIS PRODUCT:

IMMEDIATE (ACUTE) HEALTH HAZARD
 DELAYED (CHRONIC) HEALTH HAZARD
 FIRE HAZARD

MSDS'S OR A LIST OF MSDS'S AND THEIR HAZARDS (SEE EPA HAZARD CATEGORIES ABOVE) MAY BE REQUIRED TO BE SUBMITTED TO THE STATE EMERGENCY RESPONSE COMMISSION (SERC), LOCAL EMERGENCY PLANNING COMMITTEE (LEPC) AND LOCAL FIRE DEPARTMENT (LFD).

IN ADDITION, A TIER II OR TIER I FORM MAY BE REQUIRED TO BE SUBMITTED ANNUALLY TO THE SERC, LEPC AND LFD IF APPLICABLE THRESHOLD REPORTING QUANTITIES ARE EXCEEDED. CURRENT FEDERAL THRESHOLDS ARE:

10,000 POUNDS OR MORE OF AN OSHA HAZARDOUS SUBSTANCE
 OR
 500 POUNDS OR THE THRESHOLD PLANNING QUANTITY, WHICHEVER IS LESS, OF AN EXTREMELY HAZARDOUS SUBSTANCE.

NOTE: THRESHOLDS MAY VARY ACCORDING TO LOCAL AND STATE REGULATIONS.

TOXIC CHEMICAL RELEASE REPORTING (40 CFR PART 372):

THIS PRODUCT CONTAINS THE FOLLOWING COMPONENT(S) (AT A LEVEL OF 1% OR GREATER IF HAZARDOUS; 0.1% OR GREATER IF CARCINOGENIC) THAT MAY BE SUBJECT TO REPORTING ON THE TOXIC RELEASE INVENTORY (TRI) FORM R:

---COMPONENT---	---CAS NUMBER---
BENZENE	71-43-2
TOLUENE	108-88-3
XYLENE	1330-20-7
HEXANE	110-54-3

STATE AND COMMUNITY RIGHT-TO-KNOW REGULATIONS:

THIS MATERIAL MAY BE REGULATED BY LOUISIANA'S RIGHT-TO-KNOW LAW (REGULATORY STATUTE 30:2361).

16. OTHER INFORMATION

PA CLASSIFICATION		HMIS CLASSIFICATION		HAZARD RATING
HEALTH:	1	HEALTH:	1	0 - LEAST
FIRE:	3	FIRE:	3	1 - SLIGHT
REACTIVITY:	0	REACTIVITY:	0	2 - MODERATE
OTHER:	-	PERSONAL PROTECTION:	*	3 - HIGH
				4 - EXTREME

COMMENTS:

- * SEE SECTION 8 FOR GUIDANCE IN SELECTION OF PERSONAL PROTECTIVE EQUIPMENT.

[Return to top](#) [Return to Crude Safety Data List](#) [Return to full Chemical Safety Data List](#)

Updated: Friday, June 29, 2001

APPENDIX C

CERTIFICATION OF HAZARDOUS WASTE TRAINING, MEDICAL SURVEILLANCE, AND FIT TESTING

**Summary of Training Qualifications
as of 20 November 2006**

Employee	Physical ²	Respirator Fit ²	40 Hour HAZWOPER ¹	8 Hour HAZWOPER Refresher ²	HAZWOPER Supervisor ¹	First Aid ²	CPR ²
Madaj, Ambrose J.	4/28/2007	4/28/2007	1/29/1988	10/30/2007	1/4/1994	4/2/2007	
Williams, Jeffrey	8/29/2007	8/29/2007	4/6/1992	8/22/2007	10/15/2001	7/29/2008	10/30/2007
Hawn, G. Douglas	5/31/2007	5/31/2007	7/14/1989	8/18/2007		7/29/2008	5/26/2007
Bowser, Daniel A.	3/24/2007	3/24/2007	6/2/1988	6/8/2007	11/31/89	6/3/2008	
Odom, Brian D.	1/12/2007	1/12/2007	1/7/2000	1/27/2007	1/16/2002	7/29/2008	10/30/2007
Powers, Charles G.	10/31/2007	10/31/2007	7/13/2004	11/2/2007		10/30/2009	10/30/2007
Powers, Jason W.	4/26/2007	4/26/2007	6/1/2002	5/5/2007		10/30/2009	10/30/2007
Ray, Joseph	10/31/2007	10/31/2007	8/16/2004	11/12/2007		10/30/2009	10/30/2007
Ray, Ralph	4/7/2007		5/19/2000	12/5/2006		10/30/2009	10/30/2007
Shoffner, Tim J.	5/19/2007	5/19/2007	11/20/1998	4/8/2007		10/30/2009	10/30/2007
White, Curtis G.	11/3/2007	11/3/2007	9/13/2002	1/9/2007		10/30/2009	10/30/2007

Note: As noted on the table above, some personnel require physicals, respirator fit tests, or other training in order to be current. All required credentials will be up to date before personnel are allowed on site.

¹Date shown is the date the original training was completed.

²Date shown is the expiration date of the most recently completed training course, physical, or respirator fit test.

CONCENTRA MEDICAL CENTERS
OAK RIDGE, TENNESSEE 37830

MEDICAL SURVEILLANCE CERTIFICATE

Mada, Ambrose S. 9608

Has completed a physical exam in accordance with:

- (X) 29CFR 1910.120 HazWaste
() 29CFR 1910.1001/1926.1101 Asbestos
(X) 29CFR 1910.134 Respiratory Protection
(X) ANSI Z117.1-1995 Sec. 16 Confined Spaces

And is MEDICALLY QUALIFIED. Restrictions on reverse.

Issue date 4-28-08 Exam Due 4-28-07

Provider: Don Cope PAC

044925URVEILLANCE

RESTRICTIONS (if applicable)
Corrective lenses required.

Farvision

ED01/11/2003/0303

CONCENTRA MEDICAL CENTERS
RESPIRATOR FIT CERTIFICATE

NAME (Last, First, Middle Initial) S.S. #
Mada, Ambrose J. 9608

HAS RECEIVED BASIC INSTRUCTION ON PROPER RESPIRATOR USE
AND IS QUALIFIED AND FITTED TO WEAR THE SPECIFIC RESPIRATOR(S)
INDICATED ON THE REVERSE SIDE.

ISSUE DATE 4-28-06 EXP. DATE 4-28-07

TECHNICIAN SIGNATURE

Rannia Morgan

RESPIRATOR INFORMATION

MODEL	TYPE	SIZE	App#	FT
MSA		<u>M</u>		
ULTRA TWIN FULL		TC 84A 0181	100	

VALID WITH CURRENT MEDICAL CLEARANCE
QUANTITATIVE FIT TEST

American
Red Cross



Together, we can save a life

This recognizes that
Jim Mada
has completed the requirements for

First Aid Basics

conducted by

Appalachian Chapter

Date completed 4/2/04

The American Red Cross recognizes this certificate
as valid for 3 year(s) from completion date.

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES

This card certifies that
Jim Madaj
has successfully completed
the 29 CFR 1910.146
for
8-Hour Confined Space
Training for
Entry/Attendant
on
October 23, 1997

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES

This card certifies that
Jim Madaj
has successfully completed
the 29 CFR 1910.120
8-Hour Refresher
Training for
Hazardous Waste
Operations
on
September 9, 1997

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES

This card certifies that
Jim Madaj
has successfully completed
the 29 CFR 1910.120
8 Hour Supervisor
Training for
Hazardous Waste
Operations
on
January 4, 1994

OSHA



U.S. Department of Labor
Occupational Safety and Health Administration

This is to certify that

Jim Madaj

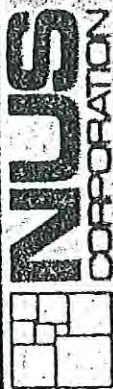
has successfully completed a 10-hour Occupational Safety and Health
Training Course in

Construction Safety & Health

Robert Chavarria
(Trainer)

12-19-95
★ U.S. GPO: 1994-646-677

Robert Chavarria



CERTIFICATE OF TRAINING

THIS CERTIFIES THAT

AMBROSE MADAJ

has successfully completed a 40 hour course of instruction in

HAZARDOUS MATERIALS HANDLING

prepared and conducted by the
NUS Corporation,
Pittsburgh, Pennsylvania

JANUARY 25 - 29, 1988

Date of Award

Richard C. Gerlach

Richard C. Gerlach, Ph.D., C.I.H.
Program Manager, Health Sciences

David P. Bour

David P. Bour
Vice President and General Manager
Central Business Operations

Certificate of Completion

Jim Madaj

In Recognition of Having Successfully Completed

HAZWOPER 8 HOUR ANNUAL REFRESHER

On

October 30, 2006

in accordance with

OSHA 29 CFR 1910.120(e)(8)/1926.65(e)(8) HAZWOPER Standard

T.R. Crouse

T.R. Crouse, CSP

KSR-04-3146

American
Red Cross



Together, we can save a life

This recognizes that

Jeffrey Williams
has completed the requirements for

First Aid Basics

conducted by

Appalachian Chapter

Date completed *7/29/05*

The American Red Cross recognizes this certificate
as valid for *3* year(s) from completion date.

This recognizes that
Jeff Williams
has completed the requirements for

Adult CPR

conducted by

Appalachian Chapter

Date completed *10/30/06*

The American Red Cross recognizes this certificate
as valid for *1* year(s) from completion date.

Together, we can save a life

American
Red Cross



American
Red Cross



Together, we can save a life

This recognizes that
Jeffrey Williams
has completed the requirements for

Adult CPR

conducted by

Appalachian Chapter

Date completed *7/29/05*

The American Red Cross recognizes this certificate
as valid for 1 year(s) from completion date.

American
Red Cross



Together, we can save a life

This recognizes that
Jeffrey Williams
has completed the requirements for

First Aid Basics

conducted by

Appalachian Chapter

Date completed *7/29/05*

The American Red Cross recognizes this certificate
as valid for 3 year(s) from completion date.

**CONCENTRA MEDICAL CENTERS
OAK RIDGE, TENNESSEE 37830**

MEDICAL SURVEILLANCE CERTIFICATE

Williams, Jeffrey *2904*

Has completed a physical exam in accordance with:

- (x) 29CFR 1910.120 HazWaste
- () 29CFR 1910.1001/1928.1101 Asbestos
- (x) 29CFR 1910.134 Respiratory Protection
- (x) ANSI Z117.1-1995 Sec. 16 Confined Spaces

And is MEDICALLY QUALIFIED. Restriction on reverse.

Issue date *8/29/07* Exam Date *8-29-07*

Provider *Don Cooper PA-C*

BACK SURVEILLANCE

RESTRICTIONS (if applicable)

*Corrective lenses required.
Far, Near, Teleph*

CONCENTRA

**HAZARDOUS WASTE SUPERVISOR
TRAINING COURSE**



NAME: **JEFFREY C WILLIAMS**
S.S.#: **41-3-04-2904**
CERTIFICATE #: **41304290441341001**
DATE COMPLETED: **10/15/01**
REFRESHER DATE: **10/15/02**

COMPLIES WITH OSHA REGULATION 29 CFR 1910.120



**LABORERS-AGC
EDUCATION AND TRAINING FUND**

37 Deerfield Road
P.O. Box 37
Pomfret Center, CT 06259

CONCENTRA MEDICAL CENTERS
1030 OAK RIDGE TURNPIKE
OAK RIDGE, TENNESSEE 37830
(865) 425-4640

PHYSICIAN'S STATEMENT

Williams, Jeffrey C.

Employer: Step Inc
SSN: 413-04-2904 DOB: 06/12/1959
Case Date: 08/29/2006

DATE OF EXAM: 8-29-06

TYPE OF EXAM: ☐ BASELINE
☒ ANNUAL
☐ EXIT

OPINION OF RISK/MEDICAL CLEARANCE FOR HAZARDOUS WASTE OPERATIONS

I have reviewed the results of the occupational and medical history, physical examination and laboratory tests based upon these, I certify that this individual:

- ☒ Has no medical condition that would place the individual at increased risk of health impairment from hazardous waste site work, when conducted under the conditions of adequate training and a health and safety plan.
- ☐ Has a medical condition that would place the individual at increased risk of health impairment from hazardous waste site work.
- ☐ Has a medical condition, which may require special consideration by the company.
- ☐ Deferred, pending further evaluation.

MEDICAL CLEARANCE FOR RESPIRATOR USE

Based upon the examination, I certify that this individual:

- ☒ Is medically qualified to use properly fitted respiratory protection equipment.
- ☐ Is NOT medically qualified to use respiratory protection equipment.
- ☒ Qualified for Confined Space Entry.
- ☐ Is not qualified for Confined Space Entry.
- ☐ Deferred, pending further evaluation.

Comments/Restrictions

- ☐ The individual has undergone a physical examination in accordance with OSHA Standards 29CFR 1910.120, 29CFR 1910.1001, 1926.1101, 29CFR 1910.134 and ANSI Standard Z117.1-1995 Section 16.
- ☒ The individual has undergone a physical examination in accordance with OSHA Standards 29CFR 1910.120, 29CFR 1910.134 and ANSI Standard Z117.1-1995, Section 16.
- ☒ Corrective lenses required:
- ☒ Far Vision ☐ Deficient stereo depth perception
- ☒ Near Vision ☒ Depth perception
- ☒ Hearing protection recommended
- ☒ Recommend tetanus toxoid immunization to be updated every 10 years.

EMPLOYEE NOTIFICATION

This individual has been informed of the results of this medical examination. Detected medical conditions which require additional examinations or treatment have been explained and applicable. Follow-up recommended.

Signature of Provider Don E. Cape, P.A.-C Date 9-26-06

Timothy R. Oesch, M.D.

Seaver Environmental

Proudly Presents This
Certificate to

Jeffrey C. Williams

for completing the initial 40-hour training in
Hazardous Waste Operations and Emergency Response
at Oak Ridge, Tennessee on 06 Apr 92
to satisfy OSHA rules, 29 CFR Part 1910.120

Certificate Number: *4*

SSAN:

413-04-2904

Gary V. Seaver

Gary Seaver, Trainer

Seaver Environmental
Rt. 1, Box 18
Ridge Road
Lancing, TN 37770
615-346-7459

Association of
Bay Area Governments



ABAG Training Center
www.hazmatschool.com

CERTIFICATE OF COMPLETION

Jeffrey Williams

has successfully completed the course titled

OSHA 8-hour HAZWOPER Annual Refresher Plus

Satisfies 29 CFR 1910.120(e)(8)

on

August 22, 2006

and has earned

IACET authorized 0.8 CEUs (Continuing Education Units) from the program



Certificate No 51475
(verify at www.hazmatschool.com)

Brian Kirking, Training Director
Sharon McCreadie, Training Coordinator
www.abag.ca.gov; (510) 464-7964

Paul W. Gantt, REA
Safety Compliance Management, Inc.

CONCENTRA MEDICAL CENTERS
OAK RIDGE, TENNESSEE 37830

MEDICAL SURVEILLANCE CERTIFICATE

Hawn, George D. 6022

Has completed a physical exam in accordance with:

(X) 29CFR 1910.120 HazWaste

() 29CFR 1910.1001/1926.1101 Asbestos

(X) 29CFR 1910.134 Respiratory Protection

(X) ANSI Z117.1-1995 Sec. 16 Confined Spaces

And is MEDICALLY QUALIFIED Restrictions on reverse.

Issue date: 5/31/06 Exam Due: 5-31-07

Provider: Don D. Cope PA-C

C44325U/RE/ILLANCE

American
Red Cross



Together, we can save a life

This recognizes that

Dave Hawn

has completed the requirements for

Adult CPR

conducted by

Appalachian Chapter

Date completed 5/26/06

The American Red Cross recognizes this certificate
as valid for 1 year(s) from completion date.

American
Red Cross



Together, we can save a life

This recognizes that

Dave Hawn

has completed the requirements for

First Aid Basics

conducted by

Appalachian Chapter

Date completed 7/29/05

The American Red Cross recognizes this certificate
as valid for 3 year(s) from completion date.



ERC
Environmental
and Energy
Services Co.

Certify that

George Douglas Haun

of

ERCE

Successfully Completed a
40 hour Equivalent Training Course
in

HEALTH AND SAFETY

and is Awarded this Certificate for

**HAZARDOUS WASTE OPERATIONS
AND EMERGENCY RESPONSE**

July 14, 1989

Date

Charles L. Daggett, C1P1
Instructor

W. W. W. W.
Executive Vice President

Certificate of Completion

Doug Hawn

In Recognition of Having Successfully Completed

HAZWOPER 8 HOUR ANNUAL REFRESHER

On

August 18, 2006

in accordance with

OSHA 29 CFR 1910.120(e)(8)/1926.65(e)(8) HAZWOPER Standard

T.R. Crouse

T.R. Crouse, CSP

KSR-04-3078

CONCENTRA MEDICAL CENTERS

RESPIRATOR FIT CERTIFICATE

NAME (Last, First, Middle Initial) S.S. #

BOWSER, DANIEL A. 8633

HAS RECEIVED BASIC INSTRUCTION ON PROPER RESPIRATOR USE AND IS QUALIFIED AND FITTED TO WEAR THE SPECIFIC RESPIRATOR(S) INDICATED ON THE REVERSE SIDE.

ISSUE DATE 03-24-06 EXP. DATE 03-24-07

TECHNICIAN SIGNATURE

Concentration

RESPIRATOR INFORMATION

MODEL TYPE SIZE App# FT

MSA

ULTRA-TWIN FULL M TC-84A-0181 100

VALID WITH CURRENT MEDICAL CLEARANCE
QUANTITATIVE FIT TEST

CONCENTRA MEDICAL CENTERS

OAK RIDGE, TENNESSEE 37830

MEDICAL SURVEILLANCE CERTIFICATE

Bowser, Daniel A. *8633*

Has completed a physical exam in accordance with:

- ☒ 29CFR 1910.120 HazWaste
- ☐ 29CFR 1910.1001/1926.1101 Asbestos
- ☒ 29CFR 1910.134 Respiratory Protection
- ☒ ANSI Z117.1-1995 Sec. 16 Confined Spaces

And is MEDICALLY QUALIFIED. Restrictions on reverse.

Issue date *3-24-06* Exam Due *3-24-07*

Provider: *Don E. Cope* PA-C

CH232SURVEILLANCE

RESTRICTIONS (if applicable)

Corrective lenses required.

Far, Near & depth

CH232SURVEILLANCE

American
Red Cross



Together, we can save a life

This recognizes that
DAN BOWSER

has completed the requirements for
FIRST AID

conducted by
KNOXVILLE AREA CHAPTER

Date completed **06/03/2005**

The American Red Cross recognizes this certificate
as valid for **3** year(s) from completion date.

American
Red Cross



Together, we can save a life

This recognizes that
DAN BOWSER

has completed the requirements for
ADULT CPR/AED

conducted by
KNOXVILLE AREA CHAPTER

Date completed **06/03/2005**

The American Red Cross recognizes this certificate
as valid for **1** year(s) from completion date.



Advanced Sciences, Inc.

In recognition of successful completion of the
8-Hour Supervisory Training Course
for hazardous waste workers,
This certificate is presented to

Daniel A. Bowser

William K. Woods
ASI Health and Safety Officer

11-31-89
Date



Advanced Sciences, Incorporated

In recognition of successful completion of the
ASI Basic 40 Hour Health and Safety Course
for hazardous waste workers,
This certificate is presented to

Dan Bowser

Mike Flavelly
ASI Health and Safety Officer

June 2, 1988
Date



Advanced Sciences, Inc.

In recognition of successful completion of the
8-Hour Health and Safety Refresher
for hazardous waste workers,
This certificate is presented to

Daniel A. Bowser

Greg M. Amarnick
ASI Health and Safety Officer

June 27, 1991
Date



Advanced Sciences, Inc.

In recognition of successful completion of the
8-Hour Health and Safety Refresher
for hazardous waste workers,
This certificate is presented to

Dan Bowser

William K. Woods
ASI Health and Safety Officer

7/20/90
Date



HALLIBURTON NUS Environmental Corporation

In recognition of successful completion of the
8 Hour Refresher Training
Hazardous Waste and Emergency Response
Safety Orientation Course
For Compliance with
United States Federal Regulations
8 Hours - 29 CFR 1910.120

Dan Bowser

Randall W. Odell
Halliburton Health & Safety Officer

04-12-94
Date

043-8R-94

BROWN & ROOT ENVIRONMENTAL A DIVISION OF HALLIBURTON NUS CORPORATION

THIS IS TO CERTIFY THAT

DAN BOWSER

HAS SUCCESSFULLY COMPLETED THE 8-HOUR HAZARDOUS
WASTE OPERATIONS REFRESHER TRAINING REQUIRED
UNDER OSHA 29 CFR 1910.120 ON THE 7TH DAY OF MAY 1993

Randall W. Odell
Course Instructor

OCCUPATIONAL HEALTH SERVICES

Robert W. Pare't M.D.

RESPIRATOR FIT CERTIFICATE

NAME (Last, First, Middle Initial) S.S. #
BOWSER, DAN 190-38-8633

HAS RECEIVED BASIC INSTRUCTION ON PROPER RESPIRATOR
USE, AND IS QUALIFIED AND FITTED TO WEAR THE SPECIFIC
RESPIRATOR(S) INDICATED ON THE REVERSE SIDE.

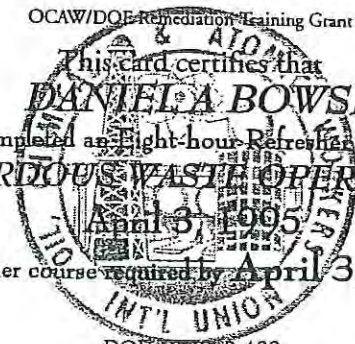
ISSUE DATE 03/07/95 EXP. DATE 03/07/96

TECHNICIAN SIGNATURE

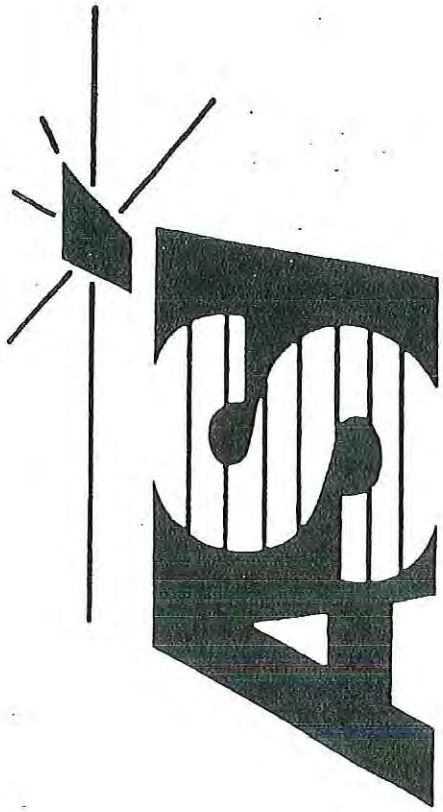
Melissa Ferr

OCAW/DOE Remediation Training Grant

This card certifies that
DANIELA BOWSER
has completed an Eight-hour Refresher training in
HAZARDOUS WASTE OPERATIONS
April 3, 1996
Refresher course required by April 3, 1996



DOE-HWC-8-480



Advanced Sciences, Incorporated

*In recognition of successful completion of the
ASI Basic 40 Hour Health and Safety Course
for hazardous waste workers,
This certificate is presented to*

Dan Bowser

Michael Navetta
ASI Health and Safety Officer

June 2, 1988
Date

Association of
Bay Area Governments



ABAG Training Center
www.hazmatschool.com

CERTIFICATE OF COMPLETION

Daniel Bowser

has successfully completed the course titled

OSHA 8-hr Annual HAZWOPER Refresher

Satisfies 29 CFR 1910.120(e)(8)

on

June 8, 2006

and has earned

IACET authorized 0.8 CEUs (Continuing Education Units) from the program



Certificate No 50162
(verify at www.hazmatschool.com)

Brian Kirking, Training Director
Sharon McCreddie, Training Coordinator
www.abag.ca.gov; (510) 464-7964

Paul W. Gantt, REA
Safety Compliance Management, Inc.

CONCENTRA MEDICAL CENTERS
OAK RIDGE, TENNESSEE 37830

MEDICAL SURVEILLANCE CERTIFICATE

Odum, Brian D. 2944

Has completed a physical exam in accordance with:

- ☒ 29CFR 1910.120 HazWaste
- ☐ 29CFR 1910.1001/1926.1101 Asbestos
- ☒ 29CFR 1910.134 Respiratory Protection
- ☒ ANSI Z117.1-1995 Sec. 16 Confined Spaces

And is MEDICALLY QUALIFIED. Restrictions on reverse

Issue date: 1-12-06 Exam Due: 1-12-07

Provider: Don E. Cone PA-C

C4432SURVEILLANCE

RESTRICTIONS (if applicable)

Corrective lenses required
Far, near, & depth

C4432SURVEILLANCE

CONCENTRA MEDICAL CENTERS
RESPIRATOR FIT CERTIFICATE

NAME (Last, First, Middle Initial) S.S. #
ODOM, BRIAN 2944

HAS RECEIVED BASIC INSTRUCTION ON PROPER RESPIRATOR USE,
AND IS QUALIFIED AND FITTED TO WEAR THE SPECIFIC RESPIRATOR(S)
INDICATED ON THE REVERSE SIDE.

ISSUE DATE: 01-12-06 EXP. DATE: 01-12-07

TECHNICIAN SIGNATURE
Rita Dussan

CMCRESPIRATORFIT

RESPIRATOR INFORMATION

MODEL	TYPE	SIZE	App #	PT
MSA		(L)		
ULTRA-TWIN FULL		TC-84A-0181	100	
VALID WITH CURRENT MEDICAL CLEARANCE				

CMCRESPIRATORFIT

Compliance Solutions



"Today's Training... Tomorrow's Solution"

10515 E 40th Ave, Suite 116, Denver Colorado
80239 Phone: 800-711-2706

Student Affiliation:

IT Corp

Certificate of Completion

This is to certify that

Brian Odom

has successfully completed the classroom requirements for

40 Hour HAZWOPER

29 CFR 1910.120(e)

Presented

Friday, January 07, 2000

Compliance Solutions Occupational Trainers, Inc.

Certificate Number: 21096

Neval Gupta
Vice President

Rick Cassidy
Instructor



CERTIFICATE of COMPLETION

Presented To

Brian D. Odom

In Recognition of Having Successfully Completed the Prescribed Course of Study for

8-Hour HAZWOPER Supervisor Training

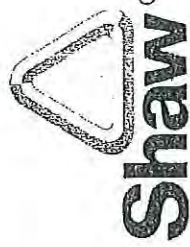
OSHA 29 CFR 1910.120 (e) (4)

I certify that the above trainee has completed this training course as given by The IT Group or one of its subsidiaries.

01/16/2002

EFFECTIVE DATE

DON L. UNRUH, CIH, CSP
Manager, Internal Training Group



Shaw® Shaw Environmental & Infrastructure, Inc.

CERTIFICATE of COMPLETION

Presented To

Brian D. Odom

In Recognition of Having Successfully Completed the Prescribed Course of Study For
H&S Program Mgt. for Project Managers & Supervisors

I certify that the above trainee has completed this training course as
given by Shaw E&I or one of its subsidiaries.

Don L. Unruh

DON L. UNRUH, CIH, CSP
Manager, Internal Training Group

05/21/2003

EFFECTIVE DATE

Association of
Bay Area Governments



ABAG Training Center
www.hazmatschool.com

CERTIFICATE OF COMPLETION

Brian Odom

has successfully completed the course titled

OSHA 8-hr Annual HAZWOPER Refresher

Satisfies 29 CFR 1910.120(e)(8)

on

January 27, 2006

and has earned

IACET authorized 0.8 CEUs (Continuing Education Units) from the program



Certificate No 47285
(verify at www.hazmatschool.com)

Brian Kirking, Training Director
Sharon McCreadie, Training Coordinator
www.abag.ca.gov; (510) 464-7964

Paul W. Gantt, REA
Safety Compliance Management, Inc.



Together, we can save a life

This recognizes that
Brian Odom
has completed the requirements for
Adult CPR

conducted by
Appalachian Chapter
Date completed *10/30/06*
The American Red Cross recognizes this certificate
as valid for **1** year(s) from completion date.

[Signature]
Chairman, American Red Cross
Instructor's Signature
[Signature]
Chapter
Appalachian Chapter
(865) 483-5641

Holder's Signature
Brian L. Odom

Cert. 653998 (Rev. Oct. 2001)

CONCENTRA MEDICAL CENTERS
1030 OAK RIDGE TURNPIKE
OAK RIDGE, TN 37830
(865) 425-4640
FAX: (865) 425-4646

TEMPORARY MEDICAL CERTIFICATION
(THIS CERTIFICATION EXPIRES 30 DAYS FROM DATE OF EXAMINATION)

Powers, Charles G.

Employer: Step Inc
SSN: 412-11-7241 DOB: 09/13/1961
Case Date: 10/31/2006

A physical examination has been completed in accordance with the requirements of OSHA Standard(s):

- ☒ 29CFR1910.120 (Hazardous Waste)
- ☒ 1910.134 (Respiratory Protection)
- ☒ 1910.1001/1926.1101 (Asbestos)

on the above named individual on 10-31-06.

Based upon the findings from the physical examination and spirometry test, I have determined this individual may may not use respiratory protection while performing his or her employment services.

Upon receipt and review of all test results, including laboratory test, a final report (Physician's Statement) on the above named individual will be forwarded to you, the employer.

EMPLOYEE NOTIFICATION

The above named individual will be informed of the results of this medical examination. Detected medical conditions, which require additional examinations or treatment, will be explained and applicable follow-up recommended.

RECORD OF THE ABOVE MAINTAINED AT CONCENTRA MEDICAL CENTERS

Signature of Provider Don E. Cape PA-C Date: 10-31-06

This will certify that

Gerald Powers

has completed the 40 Hour Program
per Regulation 29CFR1910.120

**HAZARDOUS WASTE OPERATIONS
AND EMERGENCY RESPONSE**

Certification Expiration 07/13/2004

Andy Green

Director of Training

HazMat Training

Current Status

Video Status

Sound Status

Class Break

Current Status

Page

e-mail Hotline

Temporary Certificate of Completion

Charles Gerald Powers

completed the requirements of

Kelly's HAZWOPER 8 Hour Annual Refresher Online

on 11/2/2006.

Kelly Scientific Resources, Inc. will mail the final Certificate of Completion within 60 calendar days of the completion date.
This Temporary Certificate VOID 60 days after completion date.
If you need the final certificate sooner, please call our Hot Line at 865-777-1401 ext.201

Thank you for choosing Kelly for your training needs. We look forward to serving you again soon.

American
Red Cross



Together, we can save a life

This recognizes that
Gerald Powers
has completed the requirements for

Adult CPR

conducted by

Appalachian Chapter

Date completed **10/30/06**

The American Red Cross recognizes this certificate
as valid for **1** year(s) from completion date.

American
Red Cross



Together, we can save a life

This recognizes that
Gerald Powers
has completed the requirements for

First Aid Basics

conducted by

Appalachian Chapter

Date completed **10/30/06**

The American Red Cross recognizes this certificate
as valid for **3** year(s) from completion date.

CONCENTRA MEDICAL CENTERS
OAK RIDGE, TENNESSEE 37830
MEDICAL SURVEILLANCE CERTIFICATE

Powers, Jason W. 1318

Has completed a physical exam in accordance with:

- (X) 29CFR 1910.120 HazWaste
() 29CFR 1910.1001/1926.1101 Asbestos
(X) 29CFR 1910.134 Respiratory Protection
(X) ANSI Z117.1-1995 Sec. 16 Confined Spaces

And is MEDICALLY QUALIFIED. Restrictions on reverse.

Issue date 4-26-06 Exam Due 4-26-07

Provider: Don O'Casey P.A.C.

C4435 SURVEILLANCE

RESTRICTIONS (if applicable)

C4435 SURVEILLANCE

CONCENTRA MEDICAL CENTERS
RESPIRATOR FIT CERTIFICATE

NAME (Last, First, Middle Initial) S.S. #
Powers, Jason W. 1318

HAS RECEIVED BASIC INSTRUCTION ON PROPER RESPIRATOR USE
AND IS QUALIFIED AND FITTED TO WEAR THE SPECIFIC RESPIRATOR(S)
INDICATED ON THE REVERSE SIDE.

ISSUE DATE 4/26/2006 EXP. DATE 4/26/2007

TECHNICIAN SIGNATURE Mary Benson

RESPIRATOR INFORMATION

MODEL	TYPE	SIZE	App#	FT
MSA				
ULTRA TWIN FULL	MSD	TC 84A 0181	100	

VALID WITH CURRENT MEDICAL CLEARANCE
QUANTITATIVE FIT TEST

American
Red Cross



Together, we can save a life

This recognizes that
Jason Powers
has completed the requirements for
Adult CPR

conducted by
Appalachian Chapter
Date completed 11/30/06
The American Red Cross recognizes this certificate
as valid for 1 year(s) from completion date.

American
Red Cross



Together, we can save a life

This recognizes that
Jason Powers
has completed the requirements for
First Aid Basics

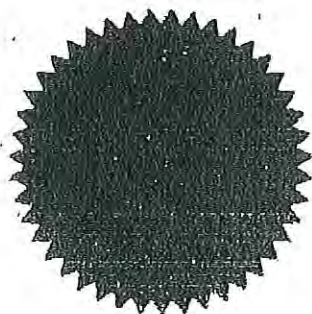
conducted by
Appalachian Chapter
Date completed 10/30/06
The American Red Cross recognizes this certificate
as valid for 3 year(s) from completion date.

**The Professional Development Program for
Hazardous Waste Remediation and
Emergency Response Workers**

**Proudly Presents This
Certificate to**

Jason W. Powers

for completing the 40 Hour Training in
**Hazardous Waste Operations
and Emergency Response**
in Knoxville Tennessee on June 1, 2002
to satisfy OSHA rules, 29CFR Part 1910.120



Andy Green

Director of Professional Development Training

HazMat Training
Gallatin, TN 37066
800-368-4871

Association of
Bay Area Governments



ABAG Training Center
www.hazmatschool.com

CERTIFICATE OF COMPLETION

Jason Powers

has successfully completed the course titled

OSHA 8-hr Annual HAZWOPER Refresher

Satisfies 29 CFR 1910.120(e)(8)
on

May 5, 2006

and has earned

IACET authorized 0.8 CEUs (Continuing Education Units) from the program



Certificate No 49328
(verify at www.hazmatschool.com)

Brian Kirking, Training Director
Sharon McCreadie, Training Coordinator
www.abag.ca.gov; (510) 464-7964

Paul W. Gantt, REA
Safety Compliance Management, Inc.

CONCENTRA MEDICAL CENTERS
1030 OAK RIDGE TURNPIKE
OAK RIDGE, TN 37830
(865) 425-4640
FAX: (865) 425-4646

TEMPORARY MEDICAL CERTIFICATION
(THIS CERTIFICATION EXPIRES 30 DAYS FROM DATE OF EXAMINATION)

Ray, Joseph S.

Employer: Step Inc
SSN: 410-37-1724 DOB: 11/16/1981
Case Date: 10/31/2006 X-ray #: 06238

A physical examination has been completed in accordance with the requirements of OSHA Standard(s):

- ☒ 29CFR1910.120 (Hazardous Waste)
- ☒ 1910.134 (Respiratory Protection)
- ☒ 1910.1001/1926.1101 (Asbestos)

on the above named individual on 10-31-06.

Based upon the findings from the physical examination and spirometry test, I have determined this individual may may not use respiratory protection while performing his or her employment services.

Upon receipt and review of all test results, including laboratory test, a final report (Physician's Statement) on the above named individual will be forwarded to you, the employer.

EMPLOYEE NOTIFICATION

The above named individual will be informed of the results of this medical examination. Detected medical conditions, which require additional examinations or treatment, will be explained and applicable follow-up recommended.

RECORD OF THE ABOVE MAINTAINED AT CONCENTRA MEDICAL CENTERS

Signature of Provider Don E. Cope PA-C Date: 10-31-06

Energy, Environment and Resources Center

at

The University of Tennessee



This is to certify that

Joseph Ray

has successfully completed the 40 hour course in
Hazardous Waste Operations and Emergency Response
as required by 29 CFR 1910.120.

8-16-04

Date

W. A. Shaw

Instructor(s)

ENVIRONMENT
SAFETY & HEALTH
EDUCATION

DR-02-SP-01

Temporary Certificate of Completion

Joseph Shawn Ray

completed the requirements of

Kelly's HAZWOPER 8 Hour Annual Refresher Online

on 11/12/2006.

Kelly Scientific Resources, Inc. will mail the final Certificate of Completion within 60 calendar days of the completion date.

This Temporary Certificate VOID 60 days after completion date.

If you need the final certificate sooner, please call our Hot Line at 865-777-1401 ext.201

Thank you for choosing Kelly for your training needs. We look forward to serving you again soon.



Together, we can save a life

This recognizes that
Joseph Ray
has completed the requirements for
First Aid Basics

conducted by
Appalachian Chapter

Date completed *10/30/06*
The American Red Cross recognizes this certificate
as valid for *3* year(s) from completion date.



Together, we can save a life

This recognizes that
Joseph Ray
has completed the requirements for

Adult CPR

conducted by
Appalachian Chapter

Date completed *10/30/06*
The American Red Cross recognizes this certificate
as valid for *1* year(s) from completion date.

CONCENTRA MEDICAL CENTERS

OAK RIDGE, TENNESSEE 37830

MEDICAL SURVEILLANCE CERTIFICATE

Ray, Ralph T. 1854

Has completed a physical exam in accordance with:

- (X) 29CFR 1910.120 HazWaste
- () 29CFR 1910.1001/1926.1101 Asbestos
- (X) 29CFR 1910.134 Respiratory Protection
- (X) ANSI Z117.1-1995 Sec. 16 Confined Spaces

And is MEDICALLY QUALIFIED. Restrictions on reverse

Issue date 10-17-06 Exam Due 4-7-07

Provider: Don E. Cope PA-C

CM432SURVEILLANCE

RESTRICTIONS (if applicable)

Corrective lenses required.
near vision

CM432SURVEILLANCE

American
Red Cross



Together, we can save a life

This recognizes that
Ralph Ray
has completed the requirements for
First Aid Basics

conducted by
Appalachian Chapter

Date completed **10/30/06**

The American Red Cross recognizes this certificate
as valid for **3** year(s) from completion date.

American
Red Cross



Together, we can save a life

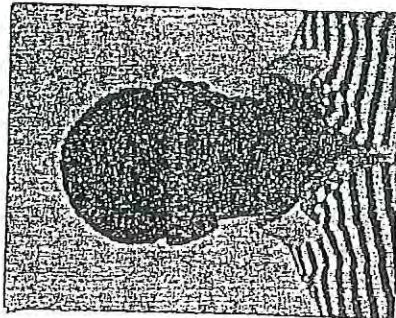
This recognizes that
Ralph Ray
has completed the requirements for
Adult CPR

conducted by
Appalachian Chapter

Date completed **10/30/06**

The American Red Cross recognizes this certificate
as valid for **1** year(s) from completion date.

Date Completed:
5/19/2000



**International Union of Operating Engineers
Hazmat Training Program**



Local DOE

This is to certify that
Ralph F. Ray

has successfully completed the 40-hour
Hazardous Waste Training Program
specifically designed for workers in
accordance with OSHA at
29 CFR 1910.120.

Receipt #
87188



Scott M. Harris

Certified Instructor

Certificate of Completion

Ralph Ray

In Recognition of Having Successfully Completed

HAZWOPER 8 HOUR ANNUAL REFRESHER

on

December 05, 2005

in accordance with

OSHA 29 CFR 1910.120(e)(8)/1926.65(e)(8) HAZWOPER
Standard



T.R. Crouse, CSP

KSR-04- 2795

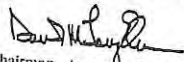


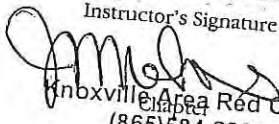
Together, we can save a life

This recognizes that
RALPH RAY
has completed the requirements for
ADULT CPR/AED

conducted by
KNOXVILLE AREA CHAPTER

Date completed **06/03/2005**
The American Red Cross recognizes this certificate
as valid for **1** year(s) from completion date.


Chairman, American Red Cross
Instructor's Signature


Knoxville Area Red Cross
(865) 584-2999

Holder's Signature

Cert. 653998 (Rev. Oct. 2001)

CONCENTRA MEDICAL CENTERS

OAK RIDGE, TENNESSEE 37830

MEDICAL SURVEILLANCE CERTIFICATE

Shaffer, Tim L. 4206

Has completed a physical exam in accordance with:

- ☒ 29CFR 1910.120 HazWaste
- ☐ 29CFR 1910.1001/1926.1101 Asbestos
- ☒ 29CFR 1910.134 Respiratory Protection
- ☒ ANSI Z117.1-1995 Sec. 16 Confined Spaces

And is MEDICALLY QUALIFIED. Restrictions on reverse.

Issue date 5-18-06 Exam Due 5-19-07

Provider: Don O'Gore PA-C

CMC25/SURVEILLANCE

RESTRICTIONS (if applicable)

Corrective lenses required.

Near Vision

CMC25/SURVEILLANCE

RESPIRATOR INFORMATION

MODEL	TYPE	SIZE	App#	FT
MSA		S		
ULTRA TWIN FULL TC 84A 0181 100				
VALID WITH CURRENT MEDICAL CLEARANCE				
QUANTITATIVE FIT TEST				

CONCENTRA MEDICAL CENTERS

RESPIRATOR FIT CERTIFICATE

NAME (Last, First, Middle Initial)	S.S. #
SHOFFNER, TIM J.	4206

HAS RECEIVED BASIC INSTRUCTION ON PROPER RESPIRATOR USE
AND IS QUALIFIED AND FITTED TO WEAR THE SPECIFIC RESPIRATOR(S)
INDICATED ON THE REVERSE SIDE.

ISSUE DATE 05/19/06	EXP. DATE 05/19/07
---------------------	--------------------

TECHNICIAN SIGNATURE





Certification of Completion

Presented to

Tim Shoffner
of

STEP, Inc.

*In Recognition of Having Successfully Completed the
40-Hour Training for
Hazardous Waste Operations and Emergency Response
in accordance with
OSHA 29 CFR 1910.120*

T.R. Crouse

T.R. Crouse

November 20, 1998

Association of
Bay Area Governments



ABAG Training Center
www.hazmatschool.com

CERTIFICATE OF COMPLETION

Tim Shoffner

has successfully completed the course titled

OSHA 8-hr Annual HAZWOPER Refresher

Satisfies 29 CFR 1910.120(e)(8)

on

April 8, 2006

and has earned

IACET authorized 0.8 CEUs (Continuing Education Units) from the program



Certificate No 49013
(verify at www.hazmatschool.com)

Brian Kirking, Training Director
Sharon McCreadie, Training Coordinator
www.abag.ca.gov; (510) 464-7964

Paul W. Gantt, REA
Safety Compliance Management, Inc.

CONCENTRA MEDICAL CENTERS
1030 OAK RIDGE TURNPIKE
OAK RIDGE, TN 37830
(865) 425-4640
FAX: (865) 425-4646

TEMPORARY MEDICAL CERTIFICATION
(THIS CERTIFICATION EXPIRES 30 DAYS FROM DATE OF EXAMINATION)

White, Curtis G.

Employer: Step Inc
SSN: 408-02-2231 DOB: 06/19/1954
Case Date: 11/03/2006

A physical examination has been completed in accordance with the requirements of OSHA Standard(s):

- ☒ 29CFR1910.120 (Hazardous Waste)
- ☒ 1910.134 (Respiratory Protection)
- ☐ 1910.1001/1926.1101 (Asbestos)

on the above named individual on 11-3-06

Based upon the findings from the physical examination and spirometry test, I have determined this individual may / may not use respiratory protection while performing his or her employment services.

Upon receipt and review of all test results, including laboratory test, a final report (Physician's Statement) on the above named individual will be forwarded to you, the employer.

EMPLOYEE NOTIFICATION

The above named individual will be informed of the results of this medical examination. Detected medical conditions, which require additional examinations or treatment, will be explained and applicable follow-up recommended.

RECORD OF THE ABOVE MAINTAINED AT CONCENTRA MEDICAL CENTERS

Signature of Provider Don E. Cape PA-C Date: 11-3-06

Date Completed:

9/13/2002



Receipt #

94872

**International Union of Operating Engineers
Hazmat Training Program**

Local DOE



This is to certify that

Curtis G. White

has successfully completed the 40-hour
Hazardous Waste Training Program
specifically designed for workers in
accordance with OSHA at
29 CFR 1910.120.

[Signature]
Certified Instructor

Certificate of Completion

Curtis White

In Recognition of Having Successfully Completed

HAZWOPER 8 HOUR ANNUAL REFRESHER

on

January 09, 2006

in accordance with

OSHA 29 CFR 1910.120(e)(8)/1926.65(e)(8) HAZWOPER
Standard



T.R. Crouse, CSP

KSR-04- 2827

APPENDIX D

REPRESENTATIVE SITE CONTROL ZONES

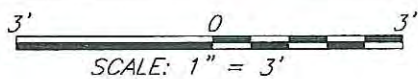


Contamination Reduction Zone
5 feet x 5 feet

Exclusion Zone
(minimum of 10 feet)

Monitoring Well
or Sampling Point

Legend

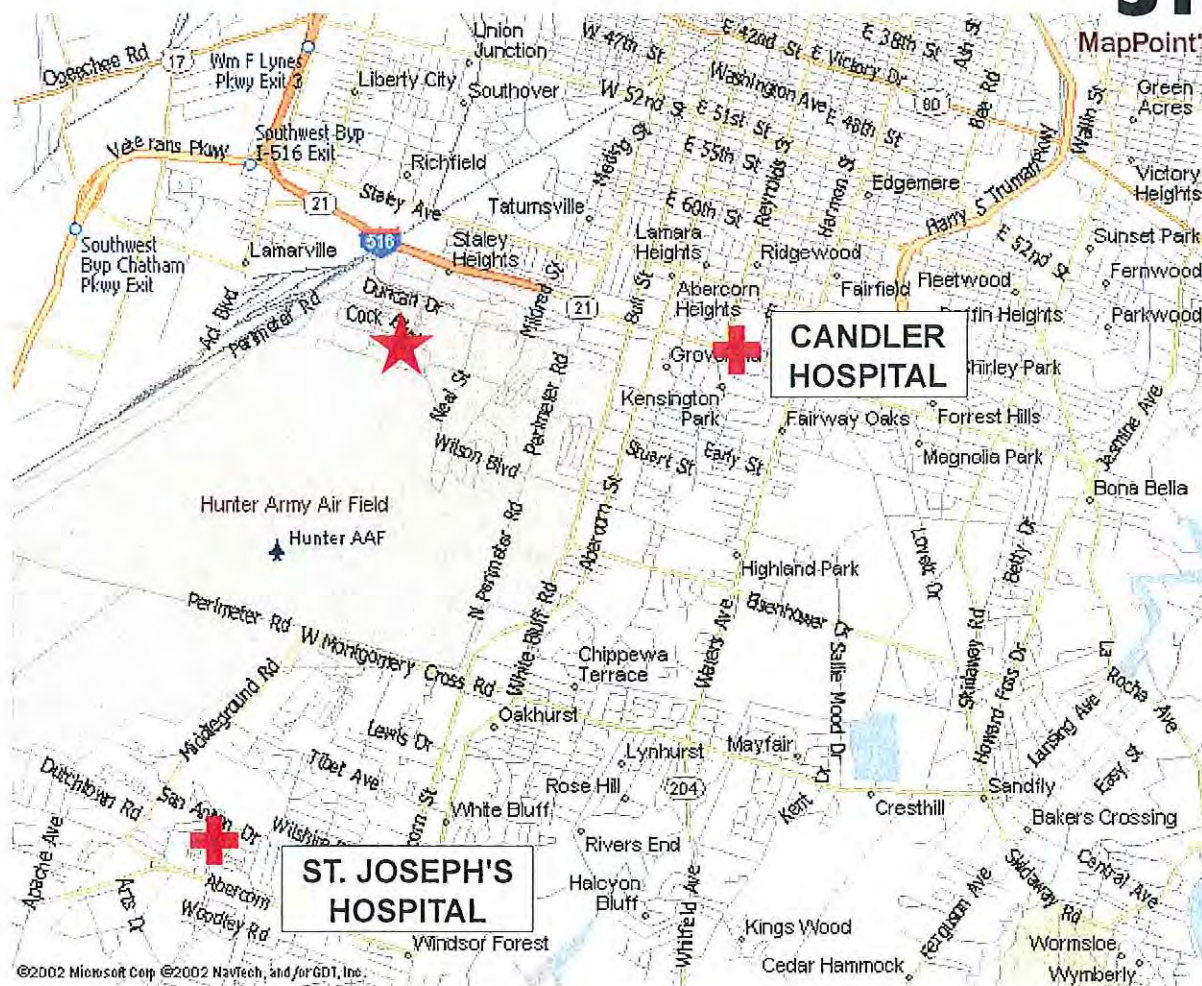


Source: STEP
Job Title: IRA at UST 25 and 26 at HAAF
and GW Sampling at Bryan Village
Fort Stewart, Georgia

Appendix D - Representative Site-Control Zones

APPENDIX E

HOSPITAL LOCATION MAPS



St. Joseph's Hospital
11705 Mercy Blvd.
Savannah, GA 31419
(912)925-4100

Directions: from Mitchell Blvd., left onto Strachan Ave., left onto Wilson Blvd. bear right onto White Bluff Rd. turn right onto W. Montgomery Cross Rd., left onto Middleground Rd.. then left onto San Anton Dr.

Candler Hospital
5353 Reynolds St.
Savannah, GA 31405
(912)692-6000

Directions: from Mitchell Blvd. left onto Duncan Dr., (road name changes to Montgomery St.) turn right onto SR-21 (W. Renne Ave.) straight. keep right onto SR-21, bear right onto E De Renne Ave.

LEGEND

- ★ WORK SITE
- ✚ HOSPITAL

Source: Fort Stewart GIS
Job Title: IRA at UST 25 and 26 at HAAF
and GW Sampling at Bryan Village
Fort Stewart, Georgia

APPENDIX F

RESUMES

APPENDIX G

STEP S&H MANUAL (Program Attachments)

Confined Space Entry
Electrical Safety Program and Lockout/Tagout
Excavation Safety
Fall Protection
Hazardous Communication
Personal Protective Equipment
Tool Box Safety Meetings



Solutions To Environmental Problems (STEP) Confined Space Entry Program

14.0 CONFINED SPACE ENTRY POLICY

14.1 Objective

The purpose of this procedure is to outline the minimum health and safety requirements for work performed in or around confined spaces. This procedure complies with measures specified in the OSHA Permit Required Confined Spaces Standard, 29 CFR 1910.146.

14.2 Scope

This procedure is applicable to all employees and contractors of Solutions To Environmental Problems, Inc. (STEP) who will be required to enter confined spaces to perform any job function.

14.3 Responsibilities

STEP will assess all confined spaces throughout the worksites, evaluate each as to whether they are permit-required confined spaces (PRCSs), and institute necessary controls and procedures to reduce or eliminate hazards prior to entry. STEP will provide confined space entry information and training, entry equipment, and personal protective equipment to the employees who work in designated permit-required confined spaces. The Confined Space Entry Program also applies to contractors working on the premises. Responsibilities are defined by individual below.

14.3.1 Corporate Safety & Health Manager:

- Coordinate and manage the overall written Confined Space Entry Program.
- Specify the types of entry-related equipment to be used.

14.3.2 Superintendent

- Evaluate entry procedures by performing a hazard evaluation for each PRCS (Attachment A).
- Ensure confined space rescue services are available for the project duration.
- Review all confined spaces on the site and the hazard evaluations for each space (Attachment A) with rescuers.
- Revise entry procedures prior to subsequent entries whenever there is reason to believe the program is deficient in protecting employees.
- Make the written program available to employees.
- Coordinate confined space entries with the SSHO.
- Ensure all applicable employees have received Confined Space training.
- Require that all Contractors who will be entering PRCSs provide confirmation that their



Solutions To Environmental Problems (STEP) Confined Space Entry Program

- employees have received PRCS entry training.
- Conduct investigations of Confined Space entry accidents/incidents.

14.3.3 Site Safety and Health Officer (SSHO)

The SSHO will act as the Confined Space Entry Supervisor, and their responsibilities include the following:

- Ensure proper implementation of the Confined Space Entry Program.
- Ensure direct reading instrumentation for monitoring of confined spaces is available and maintained in proper condition.
- Maintain all training records for authorized personnel.
- Provide assistance as requested by the Program Administrator or other individuals.
- Advise Corporate Safety and Health Manager of any program deficiencies noted requiring his/her action or involvement.
- Ensure all affected employees in their work area comply with all elements of the Confined Space Entry Program.
- Discuss and document Confined Space Entry concerns prior to entry.
- Ensure that all known or potential confined spaces are reviewed to determine the type and level of hazards associated with the space.
- Enforce the confined space procedures.
- Ensure all personnel have received proper training in confined space entry procedures and proper use of safety retrieval and emergency equipment.
- Complete and sign the confined space entry permit.
- Ensure confined space entry permits are posted and that a confined space attendant is present during all PRCS entry activities.
- Ensure all necessary safety retrieval equipment for confined spaces is on-site, operational and properly used.
- Ensure the site is properly posted and flagged.
- Conduct an on-site pre-entry briefing with all entrants and attendants prior to the start of the job.
- Cancel the permit whenever the activity is finished or a condition that is not allowed by the permit arises in or near the space.
- Verify the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that the procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.

14.3.4 Authorized Attendant

The attendant is to be stationed outside the confined space and monitor all entrants located inside the confined space. Attendants shall have the following duties:



Solutions To Environmental Problems (STEP) Confined Space Entry Program

- Remains in constant two-way communication with entrants either by verbal or visual contact, or through verbal radio communication.
- Provides standby assistance to occupants when entering or exiting the confined space.
- Directs occupants to immediately evacuate the confined space when:
 1. Conditions arise that are outside the scope of the entry permit, or present unacceptable levels of hazard,
 2. Unauthorized personnel enter the area,
 3. Behavioral changes are detected in the entrant,
 4. Air monitoring equipment detects unacceptable oxygen, flammable or toxic levels,
 5. The attendant must leave the work area,
 6. The attendant detects or suspects a breakdown in communication with the entrants, or
 7. If an emergency signal or alarm is sounded.
- Initiates emergency response procedures in the event that an entrant must be rescued from the confined space, and provides emergency rescue personnel with pertinent information related to the emergency situation to facilitate rescue of the entrants.
- Monitors for internal and external conditions that could adversely effect the continued operations inside the confined space.
- Remains at the entry point unless relieved by another authorized attendant.

14.3.5 Authorized Entrants

- Maintains effective continuous contact with the attendant.
- Evacuates the confined space when prompted by the attendant or when additional hazards are noticed.
- Reviews the entry permit with the attendant and supervisor-in-charge to resolve any concern or questions.
- Communicates with the authorized attendant to enable the attendant to monitor entrant status and working conditions within the permitted space.

14.4 Confined Space Inventory

An inventory of all the confined spaces on the job site will be maintained and each space will be identified as to whether it is permit-required or not. The Hazard Assessment Form included as Attachment A to this program is intended to be the basis for development of an entry permit for that particular space.

14.5 Labeling and Posting

All confined spaces shall be posted and flagged so as to minimize the potential for unauthorized



Solutions To Environmental Problems (STEP) Confined Space Entry Program

personnel entering the area. All entry points to any confined space shall be posted. Barricades or caution flagging should be used in addition to posting of signs. Signs for permit required confined spaces shall include but not necessarily be limited to the following information:

DANGER

CONFINED SPACE

DO NOT ENTER

ENTRY PERMIT REQUIRED

The specific signage requirements for each space are included in the Hazard Assessment Form.

14.6 Entry Procedures

14.6.1 Permit-Required Confined Space

Anyone (either employee or contractor) who wishes to enter a confined space must notify the SSHO.

The SSHO will then perform or ensure the completion of the following actions:

- Review the Hazard Assessment Form for that space and develop a permit for the entry. A blank Confined Space Entry Permit is provided as Attachment B.
- Select qualified, trained individuals for Entrants and Attendants.
- Ensure all necessary safety equipment for confined spaces is immediately available at the location of the entry, and is operational (including field checking of monitoring instruments).
- Ensure ventilation requirements (if any) are satisfied. Attachment C contains a discussion on ventilation of confined spaces.
- Ensure the entry location is properly posted and flagged. Material Safety Data Sheets (MSDSs) for all hazardous materials in or brought into the space will be attached to the permit.
- Conduct an on-site pre-entry briefing with all entrants and attendants prior to the start of the job.
- Verify the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that the procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
- Sign the confined space entry permit prior to entry.
- Notify the designated rescue team by phone of the entry operations prior to entry.
- Ensure confined space entry permits are posted. The confined space entry permit shall be posted as close to the point of entry as possible, and shall remain in that location for the duration of the job. Specific work hazards may also be posted by warning signs to inform workers of specific control measures, such as, but not limited to: respirator required; or high noise area.
- Ensure that a confined space Attendant is present during all PRCS entry activities and maintains continuous communication with all entrants. The Attendant will not leave the



Solutions To Environmental Problems (STEP) Confined Space Entry Program

space unless relieved by another Attendant.

- Cancel the permit whenever the activity is finished or a condition that is not allowed by the permit arises in or near the space.

An Entry Permit is valid for only one shift. The permit must be reissued at the beginning of the next shift or if work in the space is stopped for more than 30 minutes. If the space must be evacuated, the permit is no longer valid and must be reissued prior to re-entry.

At the conclusion of the entry, the following will be completed:

- The Attendant will verify that all Entrants have left the PRCS and that all applicable equipment has been removed.
- The Attendant will remove isolation mechanisms, as well as warning signs and barriers.
- Entrants will fill in the exit time on the permit.
- The Entry Supervisor will note any problems encountered on the permit, and forward to the Program Administrator, who will archive it for one year from the date of the permit.

14.7 Entry Permits

As stated earlier, the permit is included in Attachment B, and is available from the SSHO.

14.8 Monitoring Equipment

All portable confined space monitoring equipment will be sent off for factory calibration and maintenance on an annual basis (or more frequently if recommended by the manufacturer). Hand aspiration (i.e., rubber squeeze bulb) is not allowed, and only motorized aspiration is allowed for remote sampling. All portable gas monitors will be field checked with suitable calibration gas prior to use every shift.

The appropriate calibration gas that gives an equivalent readout for the anticipated contaminants will be used whenever possible. Correction factor that corrects the reading will be used when an appropriate gas is not available.

14.9 Compressed Gas/Flame Producing Equipment/Hot Work

Cylinders of compressed gas of any type will not be taken into confined spaces. Self-contained breathing apparatus (SCBA) equipment is the only exception.

- If any hot work (including welding, cutting, grinding, or related activities) will be conducted in a permit space, a Hot Work Permit may be required as well. The SSHO will make the determination of the need for a Hot Work permit.
- If gas hoses (e.g., for torch cutting) are to be used in the space, the hoses will be removed and the gas supply cut off at the cylinder when entrants leave the space.
- Confined space entrants are not to carry matches or cigarette lighters into spaces containing or potentially containing flammable atmospheres.



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- Hot work in a non-permit space will render it a PRCS.

14.10 Hazardous Chemical Use

Any use of hazardous chemicals in a confined space will render it a PRCS unless authorized by the Program Administrator.

14.11 Emergency Rescue

STEP will rely on the local Fire Department (or designee) for all PRCS rescues involving entry into the applicable spaces. The Superintendent will acquaint the rescue service with all PRCSs at the site.

The authorized attendant will immediately initiate the following steps when rescue of one or more entrants becomes necessary:

- The Attendant will summon help (including the local Fire Department) if doing so does not require leaving the space. If leaving the space is necessary to summon help, the Attendant will use the radio (or similar equipment) and instruct others in the facility to call the Fire Department.
- For nonentry rescue situations, the Attendant will then initiate rescue operations from outside the confined space utilizing the winch and the retrieval lines attached to the authorized entrants.
- If entry rescue is necessary, the Attendant will remain near the entrance to prevent unauthorized individuals from attempting rescue entry. **UNAUTHORIZED INDIVIDUALS WILL NOT ATTEMPT ENTRY RESCUE.**
- Upon arrival at the emergency site, the Fire Department will receive a situation report from the authorized attendant. They will then be in control of all entry operations until the space is vacated. The Fire Department should assume immediately dangerous to life or health conditions exist in the space.
- The MSDS attached to the permit will be sent with the emergency rescue service to the health care facility providing treatment.
- A brief discussion of the facility Emergency Action Plan is included as Attachment D.

14.12 Training and Information

The Confined Space Entry Training Program is required for all employees who may serve as Entry Supervisors, Attendants, or Entrants for confined space work. Training must be completed prior to any work in confined spaces. This training shall be repeated annually with updated information to be consistent with any possible changes in procedures, protective equipment and/or work processes. All Entrants and Attendants will receive the same training. The training shall cover the following topics:

- What are confined spaces and permit-required confined spaces.



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- An explanation of the general hazards associated with confined spaces.
- The reason for, proper use, and limitations of personal protective equipment, retrieval devices, radios, ventilation equipment and air flow principles, and other safety equipment required for entry into confined spaces.
- An explanation of the permit system and other procedural requirements for conducting a confined space entry.
- How to respond to emergencies and procedures for summoning rescue.
- Duties and responsibilities of the confined space entry team.
- Cardiopulmonary resuscitation techniques (minimum 2 persons).
- A description of how to recognize probable air contaminant overexposure symptoms to themselves and co-workers, and methods for alerting attendants.

The supervisor authorizing or in charge of entry shall receive the aforementioned training, as well as additional training on:

- Recognizing the effects of exposure to chemical hazards known to be in the confined space.
- Use of air monitoring equipment and interpretation of results.
- Use and selection of PPE.
- The types of work in non-permit spaces that may render them PRCs.
- Information regarding STEP's written Confined Space Entry Program and any information and materials pertinent to the OSHA Confined Space Standard.

All trainees must pass a written test for successful completion of the course.

14.13 Program Review and Revision

This program will be reviewed at least annually and will be revised to reflect any changes in operational procedures, equipment, or best management practices. Corporate Safety and Health Manager will be responsible for ensuring the conduct of the review and incorporation of any revisions.

14.14 Disciplinary Policy

All employees are expected to adhere to the procedures given in this written program. Failure to comply will result in disciplinary action as described in the facility's disciplinary policies.

14.15 Record Keeping

STEP will maintain the following information:

- The confined space entry permit will be maintained for at least one year to facilitate the review of the Permit - Required Confined Space Program.
- The latest report of the annual review will be maintained by the Corporate Safety and Health Manager.



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Confined Space Entry Program**

Attachment 14-1 Confined Space Hazard Assessment Forms

Date of Assessment:

Location of Space -		Permit Required ☐ Non-Permit ☐
Type of Space ☐ Pit ☐ Above Ground Tank ☐ UST ☐ HVAC Unit ☐ Silo ☐ Manhole ☐ Trench ☐ Baghouse ☐ Duct work ☐ Tunnel ☐ Machine Enclosure ☐ Water Tower Other: _____		
No. Access Points	Required Sign	
Means of Access ☐ Fixed Interior Ladder ☐ Fixed Exterior Ladder ☐ Portable Ladder ☐ Stairway ☐ Horizontal Entry ☐ Vertical Entry Other: _____		
Hazard Assessment: Check all that are known to exist or potentially present <u>Atmospheric Hazards</u> ☐ Oxygen Deficiency (<19.5%) ☐ Oxygen Enrichment (>23.5%) ☐ Flammable Atmosphere ☐ Toxic; Type: _____ ☐ Inerting Agents (Argon, Nitrogen) <u>Energy Source Hazards</u> ☐ Electrical ☐ Hydraulic ☐ Pneumatic ☐ Thermal (i.e. steam) ☐ Ionizing/ Non-ionizing Radiation <u>Configuration Hazards</u> ☐ Fall Hazards ☐ Entrapment ☐ Structural Integrity ☐ Compartmentalized <u>Environmental Hazards</u> ☐ Heat Stress ☐ Slippery/Unstable Surfaces ☐ Poor Illumination ☐ Hot Surfaces ☐ Contact with Hazardous Substances		
Can energy sources be eliminated from outside the space? List.		



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Hazard Control Measures

VENTILATION REQUIREMENTS			
Equipment	Check ()	Equipment	Check ()
Exhaust Ventilation		Natural Ventilation	
Dilution Ventilation		Intrinsically Safe Blower	
Initial Ventilation Purge			
Additional ventilation comments: Evacuation of space must be ordered is ventilation stops for any reason.			
ELECTRICAL EQUIPMENT REQUIREMENTS			
Equipment	Check ()	Equipment	Check ()
Intrinsically Safe		Battery Operated	
Portable Generator		Low Voltage	
GFCI		Double Insulated Tools	
Additional electrical comments:			
ILLUMINATION			
Equipment	Check ()	Equipment	Check ()
Permanent lighting provided		Supplemental after dark	
Portable drop lights		Flashlight	
Explosion-proof		Waterproof fixtures	
Additional lighting comments:			
ATMOSPHERIC MONITORING			
Oxygen	☐ Continuous	☐ Continuous	☐ Periodic Frequency:
Combustible Gas	☐ Continuous	☐ Continuous	☐ Periodic Frequency:
Toxic	☐ Continuous ☐ CO	☐ Continuous ☐ H2S	☐ Periodic Frequency: ☐ Other
Personal monitor required:	☐ es	☐ No	Type:
COMMUNICATION			
Attendant Required:	☐ Yes	☐ No	
Type of Communication:	☐ Radio	☐ Verbal	☐ Visual



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Personal Protective Equipment

RETRIEVAL & FALL PROTECTION			
Equipment	Check ()	Equipment	Check ()
Fall Arrest/Retrieval System		Wristlets/Anklets	
Lifeline		Boatswain's Chair	
Tripod Mechanical Lift		Material Handling Winch	
Comments:			
RESPIRATORY PROTECTION			
Equipment	Check ()	Equipment	Check ()
SCBA		Airline ☐ Cascade ☐ Compressor	
Half Face Air Purifying Cartridge Type:		Full Face Air Purifying Cartridge Type:	
Powered Air Purifying		Escape SCBA	
Comments:			
EQUIPMENT & APPAREL			
Equipment	Check ()	Equipment	Check ()
Safety Glasses w/ Side shields		Hard Hat	
Chemical Goggles		Hearing Protection	
Full Face Shield		Safety Shoes/Boots	
Gloves – Type		Protective Clothing - Type	
Comments:			



**Solutions To Environmental Problems (STEP)
Confined Space Entry Program**

Attachment 14-2 Confined Space Entry Permit

Location		Attendant(s)	
Starting	am pm	Date	Ending am pm Date
Confined Space To Be Entered			
Reason For Entry			
Name(s) Of Entrant(s)			

**THE FOLLOWING PRECAUTIONS WILL BE OBSERVED
(Circle or check as appropriate)**

STOP WORK IF WARNED OF A HAZARD BY ANY EMPLOYEE, OR IN EVENT OF SPILLS OR LEAKS ADJACENT TO YOUR WORK AREA

HAZARD(S)	PREPARATION		PROTECTIVE EQUIPMENT
Corrosive Materials	Lockout Energy Sources	Low Voltage Lights/GFCI	Safety Glasses
Flammable Materials	Isolate / Blank Lines	Pneumatic Tools	Goggles
Toxic Materials	Double Block and Bleed	Ladder Access	Face Shield
Hot Equipment	Inert / Purge Space	Radio/Air Horn/Phone	Steel Toe Shoes
Spilled Liquids	Water / Steam Clean	Emergency #	Hard Hat
Pressurized System	Hot Work Permit Needed	Hoist or Winch	Gloves
Spark Producing	Ventilate Space Prior to Entry:	Other:	Protective clothing (type)
Engulfment	Hours _____		Harness and Lifeline
Mechanical	Minutes _____	COMMUNICATION	Wristlets
Electrical	Ventilate space continuously during entry	Voice	SCBA or Airline Respirator
Radioactive Materials		Radio	Negative pressure respirator
Other:		Intercom	Hearing protection
		Other:	Other:

PROCEDURE IN CASE OF EMERGENCY



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MONITORING				
Monitoring Equipment (Specify by Analyte):			Continuous/Frequency	
Acceptable Conditions		Time/Result	Time/Result	Time/Result
Oxygen	19.5% - 23.5%			
Flammability	<10% LEL			
Toxics (list)	<50%TLV/PEL (lowest)			

Additional monitoring data is to be attached to or retained with this permit.

Signed _____
Entry Supervisor Person in Charge of Work

**THIS PERMIT IS VOID AFTER EXPIRATION TIME INDICATED OR IF
EMERGENCY IS NOTED.**

Permit must be posted at/near entrance to space, and applicable MSDS(s) attached, at all times during the entry.

Permit cancelled:
DATE: _____ TIME: _____

Entry Supervisor



Attachment 14-3 Permit Required Confined Space Ventilation Requirements

1.0 Strategy: The Entry **Supervisor** will determine the most effective strategy for PRCS ventilation. In choosing between mechanical fresh air supply ventilation and mechanical exhaust ventilation consider the following points:

- Supplying air normally provides best airflow and mixing throughout the PRCS.
- Supplying air brings fresh air into workers' breathing zones.
- Supplying air can provide a source of cooling or heating.
- Exhausting air does not normally provide good mixing unless there are several openings.
- Exhausting air provides more controlled air movement and does not disperse contaminants (i.e., settled dusts).
- Exhausting air allows for controlled discharge of contaminants.
- Exhausting air can be effective for localized source control.
- Simultaneous supplying and exhausting air may be applicable in some cases.

2.0 Air Flow Guidelines: Air flow guidelines are expressed here in units of Air Changes Per Hour (ACH). One ACH means that in one hour, an air mover has delivered or exhausted a volume of air equal to the volume of the PRCS. While it is often not possible to measure the volume of the space, these guidelines are provided as a rule of thumb. It does not mean that all the air within the space has been exchanged. How much air has been exchanged depends on the configuration of the PRCS and where the air is supplied to or exhausted from. The following points will be considered in ventilating confined spaces:

- For supply ventilation, the range to strive for is a minimum of 10 ACH (air changes per hour) and up to 60 ACH with 20 ACH as a goal. Flow rates in excess of 60 ACH usually do not provide significant additional benefit.
- When supplying fresh air to a PRCS to remove heavier-than-air contaminants, the end of the supply duct should be kept within three feet of the bottom of the PRCS.
- For exhaust ventilation, the minimum should be 10 ACH with a goal of 20 ACH. Increasing flow as much as feasible does provide additional benefit.
- The space should be ventilated for a minimum of 10 minutes before any entry.

3.0 Air Movers: Observe the following precautions when using mechanical air movers:

- Do not block an entry/exit opening of a PRCS with air movers and ductwork unless a second open and immediately accessible portal is available for rescue.
- Ensure that air movers are rated intrinsically safe or are grounded and bonded when used with potentially combustible atmospheres.
- Protect intakes on air movers used for supplying fresh air from the introduction of chemicals, vehicle emissions, etc.
- Locate outlets on air movers used for exhausting downwind and away from exterior personnel and equipment.



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- When possible, provide movable ductwork which extends into the PRCS. Position ductwork to reduce contaminants near entrants' breathing zones.
- Use compressed air supplied by oil-lubricated compressors for ventilation purposes only if:
 - A venturi-type eductor is placed on the discharge of the compressed air line or hose, and
 - Monitoring for carbon monoxide (CO) is conducted immediately prior to and during work in the PRCS.

4.0 Natural Ventilation: As a general rule, do not rely upon natural ventilation; however, it may be used only if the following conditions are met:

- There are no potential atmospheric hazards.
- Pre-entry atmospheric testing indicates acceptable air quality prior to any mechanical ventilation.

Work operations within the PRCS do not have the potential to cause a change in quality conditions.



**Solutions To Environmental Problems (STEP)
Confined Space Entry Program**

Attachment 14-4 Program Performance Verification

Reviewer Names: _____

Date: _____

Confined Space Program		YES	NO
1.	Have projects developed a site-specific written Confined Space Program to prevent unauthorized entry, identify and evaluate confined space hazards, and establish procedures for safe entry, including testing and monitoring?		
2.	Is there a written Confined Space Permit Program for entry into confined spaces?		
3.	Have all confined spaces been identified and posted?		
4.	Is personal protective equipment (PPE) and other entry-related equipment available for employees involved in confined space entry?		
5.	Is all entry-related equipment being properly maintained?		
6.	Has training on confined space entry procedures been completed for all applicable employees?		
7.	Are subcontractors briefed as to project confined space locations and procedures for entry?		
8.	If off-site rescue procedures apply, has coordination and familiarization training been completed?		
9.	If on-site rescue procedures apply, have all rescue personnel been trained in rescue procedures?		
10.	Are Attendant, Authorized Entrants, and Entry Supervisory Personnel identified and trained in their responsibilities?		



5.0 ELECTRICAL SAFETY PROGRAM AND LOCKOUT/TAGOUT

5.1 Scope and Application

This program is applicable to all employees and contractors of STEP while working on any STEP work site during construction or maintenance.

5.2 References

Title 29 Code of Federal Regulations (CFR) Part 1926.404-.408, .416 - .417

Title 29 Code of Federal Regulations (CFR) Part 1910.303-335

5.3 Definitions

- Qualified Person - an individual who is capable of working safely on energized circuits, and understands proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools. (i.e., licensed electrician or similarly trained).
- Nonqualified Person - an individual not meeting the definition of a qualified person.
- Authorized Employee – A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment.

5.4 Responsibilities

Program responsibilities are defined below for the individuals designated to ensure the proper implementation of this program.

5.4.1 Corporate Safety & Health Manager

- Provide the resources and authority to ensure the program elements are instituted as required.
- Hold all assigned responsible parties accountable as outlined in the written program.
- Periodically inspect project sites for electrical safety hazards and compliance with this program.
- Perform and document a Program Performance Verification (PPV) of the Electrical Safety Program at least annually to ensure program elements are being effectively implemented.

5.4.2 Superintendent or Foreman

- Ensure all affected employees under your supervision have received the level of electrical safety training necessary to safely perform their job.
- Maintain a file for each qualified person containing documents that are used for confirming their qualifications.
- Require employees to follow the Electrical Safe Work Practices outlined in this program.
- Be knowledgeable of Electrical Safety Program requirements.



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- Make routine surveys of the work company to ensure utilization of PPE and safe work practices by employees.
- Ensure that inspection and testing of cord sets, electric tools, all electrical equipment and receptacles is conducted as required.
- Conduct investigations of electrical accidents.

5.4.3 Employees

- Actively participate in the assigned electrical safety, lockout/ tagout, and temporary wiring training sessions and adhere to the safe operating guidelines contained within this program.
- Obey all established requirements outlined in the Electrical Safety Program.
- Use PPE supplied by the company for all work around exposed electrical circuits.
- Utilize all existing engineering controls, work practice controls and administrative controls provided.
- Inform supervision if PPE is lost, damaged or if additional PPE is needed.
- Qualified employees must participate in the annual mandatory training sessions as scheduled.
- Non-qualified employees do not work on exposed electrical circuits unless they have been de-energized in accordance with the Control of Hazardous Energy (Lockout/Tagout) Procedures.

5.5 Work Practices

- All live parts must be de-energized before the employee works on or near them, unless de-energizing introduces additional or increased hazards. If live parts are not de-energized, other safety related work practices shall be used to protect employees who may be exposed to the electrical hazards involved.
- Conductors and parts of electric equipment that have been de-energized but have not been locked out or tagged shall be treated as energized parts.
- All employees must follow the STEP control of hazardous energy (lockout/tagout) procedures when performing work on fixed electrical equipment or circuits. Test equipment will be used to test the circuit elements and electrical parts of equipment to verify that the circuit elements and equipment parts are de-energized.
- Only qualified persons can perform testing work on electric circuits or equipment.
- If a circuit is de-energized by a circuit protective device, manual re-energization of the circuit will not be done until the determination is made that the equipment and circuit can be safely energized.

5.6 Location/Environment

- Employees may not enter any area containing exposed energized parts unless adequate lighting is provided.
- Safety signs or symbols must be used where determined necessary to warn employees about the electrical hazards that may endanger them.



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- Nonconductive barricades must be used in conjunction with safety signs where it is necessary to prevent or limit employee access to work areas exposing employees to un-insulated energized conductors or circuit parts.

5.7 Work Space

The minimum work spaces around electrical equipment for "qualified" persons to do work are listed in Tables 5-1 and 5-2 below.

Table 5-1 Work Spaces Around Electrical Equipment

Location	600V Nominal or Less	600V to 4160V Nominal
Width in Front	30" wide	30" wide
Front Clearance	36" to 48" (see Table 5-2)	36" to 60"
Headroom	6'3" high	6'6" high
Lighting	Adequate	Adequate
Entrances to Area	One	One – 24" wide, 6'6" high; if control panel >48" wide, must be one entrance each side

Table 5-2 Working Clearances

Nominal voltage to ground	Minimum clear distance for condition (ft)		
	Condition A	Condition B	Condition C
0 - 150	3	3	3
151 - 600	3	3 ½	4
600 - 4160	3	4	5

Conditions (a), (b), and (c), are as follows:

- A. Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating material. Insulated wire or insulated by
- B. STEP operating at not over 300 volts are not considered live parts.
- C. Exposed live parts on one side and grounded parts on the other side. Concrete, brick, or tile walls will be considered as grounded surfaces.
- D. Exposed live parts on both sides of the workspace [not guarded as provided in Condition (a)] with the operator between

If access is needed through the rear of the electrical equipment, at least 36 inches horizontally of work room is to be provided.

5.8 Temporary Power at Work site Construction Sites

- All temporary power installations for work site construction sites shall be installed only by qualified electricians.



- Temporary electrical power and lighting installations of 600 volts, nominal, or less may be used only during remodeling, maintenance, repair or demolition of buildings or equipment.
- Temporary electrical power and lighting installations over 600 volts, nominal may only be used during periods of tests, experiments, or emergencies.

5.9 Electrical Boxes and Cabinets

A rubber grommet or clamp must be used around the conductor to protect against damage where they enter cabinets or boxes.

- Knockouts, breaker openings, and other fittings in cabinets and boxes should only be removed if they will be used immediately. All openings not in use will be closed with a plug or cover.
- Covers will be provided for all pull boxes, junction boxes and fittings. If metal covers are used, they will be grounded and kept closed.
- Each out box will have a cover, faceplate, or fixture canopy.
- Covers for boxes carrying over 600 volts, nominal will be marked "HIGH VOLTAGE."

5.10 Disconnect Means

- All disconnects shall have a minimum of 36" clearance in front of the disconnect to allow for easy access.
- Circuit breakers must clearly indicate whether they are in the open (off) or closed (on) position. The up position of the handle for vertical switchboards will be the closed (on) position.
- The disconnect means will plainly indicate whether it is in the open or closed position. The disconnect means is to be installed at a readily accessible location nearest the point of access to the service entrance conductors.
- Single throw knife switches must be installed so that if the switch falls downward, it will fall into its de-energized position (open - "off" position).
- Every electrical apparatus shall have a disconnecting means and be marked with its rating in volts and amperes or volts and watts.
- Every disconnect means shall be clearly labeled to indicate what electrical apparatus it controls.
- Disconnecting mechanisms (circuit breakers, etc.) must be used for the opening, reversing, or closing of circuits under load conditions.

5.11 Flexible Cords

- All flexible cords shall be marked SJ, SJO, SJT, SJTO, S, SO, ST, STO as required by OSHA 29 CFR 1926.
- All flexible cords will be used in conjunction with a GFCI "pigtail" in addition to the GFCI receptacles on the site.
- Flexible cords (extension cords) used with grounding-type equipment must contain an equipment grounding conductor.



- Any flexible cord that may be used in wet areas or exposed to damp, moist or wet conditions must be designed and approved for use in those locations.
- Flexible cords and cables shall not be used as a substitute for the fixed wiring of the structure, run through holes in walls, ceilings, or floors, run through doorways, windows, or similar opening, attached to building surfaces, or concealed behind building walls, ceilings or floors.
- At no time should flexible cords be spliced or taped together.
- Portable cord equipment, plug-connected equipment and flexible cord sets must be visually inspected before use on each shift for external defects and evidence of possible internal damage. These defects shall be reported to the applicable Supervisor or Crew Leader.

5.12 Grounding

- The grounded conductor of a branch circuit must be identified by a continuous white or natural gray color wire.
- The equipment grounding conductor of a branch circuit shall be identified by a continuous green color or a continuous green color with one or more yellow stripes unless the wire is bare.
- The path to ground from circuits, equipment, and enclosures shall:
 - be permanent and continuous,
 - have the capacity to conduct safely any fault current likely to be imposed on it and,
 - have sufficiently low impedance to limit the voltage to ground and to facilitate the operation of the circuit protection devices in the circuit.

5.13 Ground Fault Circuit Interrupter (GFCI)

- Ground Fault Circuit Interrupters (GFCI) shall be installed on all circuit breakers for construction power.
- A GFCI "pigtail" shall be used in conjunction with all flexible cords and cord and plug equipment, in addition to the GFCI receptacles on the site.
- Receptacle type GFCIs may be used on common neutral systems and where receptacles are more than 250 feet from the breaker.
- A GFCI polarity tester shall be used to ensure trip current values and to test the satellite receptacles downstream from the receptacle containing the GFCI.
- GFCIs shall be installed and maintained in accordance with the requirements of the National Electric Code (NEC) current edition. The system shall be tested prior to being put into service. The test results shall be documented and maintained on file in the project office.

5.14 Work Near Overhead Power Lines

- Any nonqualified person, vehicle, or mechanical equipment working in an elevated position near overhead power lines must maintain at least a 10 foot clearance (in reference to the closest conductive object near the power line) for voltages to ground of



- 50 kV or below and an additional 4 inches for every 10 kV over 50 kV
- Any qualified person working in the vicinity of overhead lines must maintain a distance as identified in the Work Space section of this document. Any use of conductive objects within this distance must have an approved insulated handle.
- If work is to be performed on overhead lines closer than the clearance requirements as identified under Work Space, the lines must be de-energized and grounded.

5.15 Lockout/Tagout Procedures

Whenever work on electrical equipment or services is required the electrical power source shall be de-energized, locked and tagged following these steps:

- Affix a Lockout device and tag. Each applicable authorized person and/ or subcontractor will apply his or her own lock and tag.
- Test the equipment using a voltmeter to verify the energy is isolated.
- Perform required work.
- Ensure tools and people are removed and any guards have been replaced.
- Inform Affected Employees of the removal of locks and tags.
- Remove the Lockout/Tagout device(s) and energize the equipment.

5.16 Crew or Personnel Change

Specific instruction shall be utilized during crew or personnel changes to ensure the continuity of lockout/ tagout protection, including provision for the orderly transfer of locks or tags between off-going and on-coming employees, to minimize exposure to hazards from the unexpected energization. At no point during the lockout event shall the equipment or machine be in an unlocked condition.

In situations where a lockout event will be of an extended duration, the Supervisor or Crew Leader may apply a crew lock. This crew lock will be attached to a multi-lock hasp and will remain attached for the entire duration of the lockout event. Another group lockout device that can be used is a group lock box; the crew lock will be secured at the lockout point, and its key will be placed inside a group lock box. Authorized employees will attach their personal locks to the hasp/group box when working on the machine and remove their locks at the conclusion of their shift.

5.17 Tags vs. Locks

- A tag that identifies the person responsible for de-energizing the system will be applied every time a piece of equipment is locked out.
- Tagging without locking for energy control purposes is forbidden without the written permission of the Corporate Health & Safety Manager.

5.18 Materials and Hardware for Lockout/Tagout

- STEP shall furnish all locks, tags, hasps, or other devices for isolating and securing



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equipment or machines from energy sources. These devices shall be identified and used solely for the purpose of lockout/tagout.

- Each authorized employee is issued his/her own lock and key set. The individual personally issued lock is marked with the employee's name for identification purposes.

5.19 Lockout Devices Requirements

All lockout/tagout devices utilized for protection against unexpected energization or start up of the equipment or machines, or release of stored energy shall meet the following requirements:

- Lockout devices are of durable construction capable of withstanding the environment for the maximum period of time these devices are exposed.
- Lockout devices are standardized within the facility by type and color and may not be used for any other purpose.

5.20 Program Review and Revision

The Corporate Health and Safety Manager shall perform an annual assessment of this program. The assessment will address the degree and consistency of program element implementation in the workplace. The attached Program Performance Verification criteria will be utilized to conduct and document this assessment.

5.21 Disciplinary Policy

All employees are expected to adhere to the procedures given in this written program. Failure to comply will result in disciplinary action as described in the companies disciplinary action policies.

5.22 Recordkeeping

STEP shall maintain the following information:

- All employee training records will be maintained by STEP for at least two years from the last training date.



**Solutions To Environmental Problems (STEP)
Electrical Safety Program and Lockout/Tagout**

Attachment 5-1 Electrical Safety and Lockout/Tagout, Program Performance Verification

No.	Program Element	Completed √	Target Date
1.	Company has a current, fully developed company specific written Lockout/Tagout Program Approved by the Corporate Safety and Health Manager that incorporates all OSHA mandated elements.		
2.	Company's written lockout/tagout program clearly outlines the roles and responsibilities of all affected functions and individuals.		
3.	Company maintains a current documented listing of all identified "authorized personnel" at this facility who are permitted to perform lockout/tagout related work.		
4.	Company has developed a General Lockout/Tagout Procedure.		
5.	Company maintains an adequate and readily accessible inventory/supply of lockout/tagout hardware (e.g., lockout locks, tags, valve locking mechanisms, chain, cable, blocking material, group lock boxes, multiple locking hasps) to insure safe lockout at all times.		
6.	Company maintains a current inventory of lockout locks denoting who has been assigned such devices.		
7.	Lockout locks (different and distinguishable from other locks used at the company) have been identified to denote ownership.		
8.	Lockout locks are only used for lockout purposes (i.e., not for personal lockers, toolboxes, etc.).		
9.	Company does not permit the use of master keys or locks keyed alike.		
10.	Company has outlined a lock/key control, lost lock, and lock removal policy within its written program.		
11.	Company has established a policy dealing with shift change and group lockout within its written program.		
12.	Company has identified all authorized and affected individuals or groups who require lockout/tagout training.		
13.	Company has developed a documented lockout/tagout training program for all authorized and affected employees.		
14.	Company uses only trained and competent trainers for conducting lockout/tagout training.		
15.	Company conducts documented lockout/tagout training for all authorized and affected personnel on an annual basis.		
16.	New hires and temporary employees receive lockout/tagout awareness level training at the time they start work for the company.		
17.	Company conducts annually, a documented audit of its entire lockout/tagout program (i.e., review written program elements, observing authorized personnel locking out equipment, training conducted, assessing lockout inventory and hardware, etc.).		
18.	Company's written program requires each authorized person to apply their own lock and tag to each energy-isolating source (or authorized group lockbox) and maintain exclusive control of the key(s).		
19.	Company's written lockout/tagout program requires the sharing of lockout/tagout information and requirements with outside contractors working on company.		



**Solutions To Environmental Problems (STEP)
Electrical Safety Program and Lockout/Tagout**

No.	Program Element	Completed ✓	Target Date
20.	Findings (incidents, near misses reported, deficiencies, lessons learned, worker feedback, positive observations, etc.) from documented lockout audits at company are incorporated into annual refresher lock-out/tagout training for authorized and affected persons.		
21.	Company has developed and communicated to all company employees the disciplinary policy for failure to follow established lockout/tagout procedures.		
22.	Company insures that all managers, supervisors, and/or crew leaders who oversee employees who perform authorized lockout/tagout related work attend documented lockout/tagout training.		
23.	Corporate Safety & Health Manager insures that all documentation (written program, training pro-gram/records, audits, ECPs, etc.) is maintained and readily accessible for review.		
24.	Company requires lockout be used for energy isolation, versus tagging alone. Exceptions to this rule must be reviewed and approved by the Corporate Health & Safety Manager and a procedure must be established that makes deviations to this policy as safe as locking/tagging out equipment, per OSHA standards. Employees must be trained (documented) on such procedures when established (e.g., troubleshooting energized circuit with a multi-meter by qualified persons, clearing jam-ups).		
25.	The company has trained all applicable qualified employees, and is the documentation maintained adequately?		
26.	Has electrical safety PPE and other equipment (e.g., nonconductive ladders) been purchased?		
27.	Has electrical PPE been tested (frequency and type of inspection) by an outside service and according to requirements?		
28.	Is electrical equipment over 600V in restricted access locations?		
29.	Is adequate clearance provided for electrical equipment?		
30.	Is temporary wiring being used for long-term use?		
31.	Are the general rules for electrical safe work practices followed during electrical maintenance and repair activities?		
32.	Is temporary wiring in good condition?		

Comments:

Reviewer Names:



6.0 EXCAVATION SAFETY

6.1 Scope and Application

This program applies to excavations typical of STEP site work. This program is specific to excavations less than 5 feet in depth and assumes no entry into piers. If an excavation, other than a pier, exceeds 5 feet in depth or entry into a pier hole is necessary, the Corporate Safety & Health Manager shall be notified prior to initiating work. No trench boxes or excavations greater than 5 feet deep are permitted without Corporate Safety & Health Manager approval.

6.2 Responsibilities

Responsibilities are defined by individual below.

6.2.1 Corporate Safety & Health Manager

- Ensure all management and affected employees are aware of the Excavation Safety Program.
- Provide technical assistance for complex excavations and excavations greater than 5 feet in depth.
- Advise Management of any program deficiencies noted requiring his/her action or involvement.
- Conduct an annual Program Performance Verification, Using the PPV form in Attachment 6-1.

6.2.2 Superintendent and Foreman

- Ensure that the requirements of this Program are adhered to by all employees.
- Act as or ensure an excavation competent person is on site during all excavation work.
- Inspect excavations daily prior to entry for signs of cave-in or collapse.
- Ensure all employees involved with excavation work have been trained.

6.2.3 Employees

- Practice safe work habits and comply with the requirements of this Program.
- Attend training as directed by the Supervisor.
- Visually inspect excavation for signs of cave-in or collapse prior to entry.

6.2.4 Subcontractors

- Attend or provide proof of training as directed by STEP.
- Act as or ensure an excavation competent person is on site during all excavation work.



6.3 General Requirements

The following general requirements are for excavations less than five feet in depth, excluding piers. Excavations greater than 5 feet in depth will not be initiated without prior approval of the Corporate Safety & Health Manager or designee with the exception of piers. No entry into a pier is permitted without Corporate Safety & Health Manager approval.

- Visually inspect excavation for signs of cave-in or collapse prior to entry.
- Practice safe work habits and comply with the requirements of this program.
- A designated competent person shall be onsite at all times during which excavation activities are conducted.
- Utilities will be identified where required prior to starting any excavation.
- All spoils must be placed a minimum of 2 feet from the edge of the excavation. Loose soil or rocks shall be removed from the sides of excavation walls.
- Excavations 4 feet in depth or greater, must have a stairway, ladder, ramp, or other safe means of egress within 25 feet of any employee.
- No employee may enter an excavation where water has accumulated without adequate precaution, as specified by the Competent Person on site.
- Excavations greater than 4 feet in depth where a hazardous atmosphere may exist, such as excavations in a landfill or near hazardous substances, will be tested for oxygen deficiency and other parameters as necessary. These spaces may be classifiable as permit-required confined spaces. The Corporate Safety & Health Manager or designee will be contacted prior to commencing work in excavations that may contain oxygen deficiency or other hazardous atmosphere.
- Reinforcing steel used in excavations shall be protected to prevent impalement through the use of metal-plated rebar caps or other suitable protection.
- Equipment operators near the edge of an excavation will have a clear and direct view of the edge of the excavation or a warning system shall be utilized such as barricades.

6.4 Inspections

All excavations shall be inspected by a competent person daily before entry and:

- at the start of each shift,
- after rain or snowfall,
- after freezing and/or thawing temperatures occur, and
- after any condition that can change the integrity of the soil.

During rainy weather, work in excavations shall cease until the excavation competent person has evaluated the excavation and the effect the rain is having. The excavation competent person will need to maintain a regular inspection schedule during the rain if employees will continue to work in the excavation. Depending on the amount of rain falling, the duration of the rainfall and the soil type, the competent person may need to maintain continuous observation of the excavation condition.



6.5 Employee Information and Training

Each employee who works in or around an excavation shall be trained to recognize the following potential hazards associated with excavations.

- **Content of General Worker Training Program** –Training topics will include, but not be limited to:
 - General requirements of this program
 - Fall hazards
 - Safe entry and exit
 - Hazardous atmospheres

Individuals identified as Competent Persons must have completed Excavation Competent Person Training. Each individual assigned as an excavation Competent Person shall have documented training or shall have documentation of experience and qualifications in excavation activities. Only individuals approved by the Corporate Safety & Health Manager may serve as Competent Persons.

6.6 Program Review and Revision

The Corporate Safety & Health Manager or designee shall perform an annual assessment of this program. The assessment will address the degree and consistency of program element implementation in the workplace. The attached Program Performance Verification criteria will be utilized to conduct and document this assessment.

6.7 Disciplinary Policy

All employees are expected to adhere to the procedures given in this written program. Failure to comply will result in disciplinary action as described in the facility's disciplinary policies.

6.8 Record Keeping

The following records must be maintained as stipulated below.

- A copy of the Excavation Permit and Daily Inspection shall be maintained on site at all times.
- Human Resources shall maintain a record of the most current General Employee or Competent Person training records.



Solutions To Environmental Problems (STEP)
Excavation Safety

Attachment 6-1 Excavation Safety Program Performance Verification

Facility: _____

Review Date: _____

No.	Program Element	Completed √	Target Date
1.	The Corporate Safety & Health Manager has been appointed and trained to oversee the administration of this program.		
2.	Have all employees involved in excavation work been trained?		
3.	Is there a competent person on each excavation site?		
4.	Are ladders or ramps provided for excavations greater than 4 feet deep and within 25 feet of employees in the excavation?		
5.	Is reinforcing steel protected to prevent impalement? (Note – rebar caps with metal plates)		
6.	Are spoil piles at least 2 feet back from the edge of the excavation?		
7.	Is the accumulation of water controlled in excavations?		
8.	Is the excavation inspected after precipitation and at the beginning of each shift?		
9.	Are training records available for all applicable personnel?		

Comments:

Reviewer Names:



Solutions To Environmental Problems (STEP)
Excavation Safety

Attachment 6-2, Daily Excavation Inspection Form

Name of Excavation Competent Person:		Date of Inspection:	
Excavation/Trench location:			
Depth:	Width:	Date Opened:	
Soil classification: ☐ A ☐ B ☐ C			
Indicate, by marking the test below, how the classification was made.			
Manual test(s)	Cohesive Unfissured	Cohesive fissured	Granular
a) plasticity			
b) dry strength			
c) thumb penetration			
d) pocket penetrometer			
e) other			
Visual test(s) Do as many as possible	Cohesive Soil		Granular Soil
Spoil pile:	Remains in clumps		Breaks up easily
Trench Side:	Stands vertical for over 2 hours		Sloughs into trench
The excavation is properly (circle one):			
Shored (indicate the type of shoring)	☐ Closed ☐ Open ☐ Wood ☐ Metal		
Sloped/benched (indicate the slope)	☐ Vertical ☐ ¾:1 ☐ 1:1 ☐ 1 ½:1 ☐ 2:1		
Excavation Checklist	Morning	Mid-Day	Afternoon
Time:			
Weather:			
Is atmospheric testing required?	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Is atmospheric testing done?	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Is the spoil pile back 3' from the edge?	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Have surface encumbrances been removed?	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Are there any signs of sloughing or cave-in?	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Is there water accumulation in the bottom?	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Any vibration sources near the excavation?	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Is there adequate access/egress (ladder, ramp)	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Has the soil been disturbed previously?	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Sides	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
Top	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a
If the excavation is over 20 feet deep, has a P.E. design been documented and complied with?	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a	☐ yes ☐ no ☐ n/a



4.0 FALL PROTECTION

4.1 Scope and Application

This program is intended to inform all personnel working in elevated positions of the techniques necessary to perform their work safely. This program is applicable to all employees and contractors of STEP, Inc. (STEP) who work on elevated surfaces that have an unprotected side or leading edge that is 6 feet or more above a lower level.

4.2 References

OSHA, Subpart M, Fall Protection - 29 CFR 1926.500-503
OSHA 29 CFR 1926.1053 – Ladders
ANSI A14.3 Fixed ladders – safety requirements

4.3 Definitions

- 100 Percent Fall Protection - Protecting the worker from the possibility of a fall at all times. This includes when moving or stationary. 100-percent fall protection includes guardrail systems, nets, tie off, catch platforms, etc..
- Anchorage - a secure point of attachment for lifelines, lanyards, or deceleration devices. The anchorage shall be capable of withstanding the forces specified in this program.
- Basket Hitch- Technical rigging term referring to a lift sling that is looped under (and not wrapped around) the load.
- Full Body Harness - a configuration of connected straps to distribute a fall arresting force over at least the thighs, shoulders, and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration device.
- Fall Arrest System- a full body harness and lanyard, which is attached to a horizontal or vertical lifeline, which is properly secured to an anchorage(s).
- Drop Line - an independent lifeline secured to an upper anchorage for the purpose of attaching a lanyard or a fall protection device. This line must be at least a 3/4-inch manila rope or a 1/2-inch nylon rope.
- Hardware - Snap hooks, D-rings, buckles, carabiners, adjusters, and O-rings that are used to attach the components of a fall protection system together.
- Horizontal Lifeline - A rail, wire rope, or synthetic rope that is installed in a horizontal plane between two anchorage points and used for attachment of a worker's lanyard or lifeline device while moving horizontally.
- Lifeline - a vertical line from a fixed anchorage or between two horizontal anchorage points, independent of walking or working surfaces, to which a lanyard or device is secured.
- Locking Snap Hook - a connecting snap hook that requires two separate forces to open the gate, one to deactivate the gatekeeper and a second to depress and open the gate that automatically closes when released; used to minimize roll-out or accidental disengagement.
- Rope Grab - a fall arresting device that is designed to move up or down a lifeline suspended from a fixed overhead or horizontal anchorage point, or lifeline, to which the harness is attached. In the event of a fall, the rope grab locks onto the lifeline rope through compression



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Fall Protection

- to arrest the fall. The use of a rope grab device is restricted for fall restraint applications.
- Self-Retracting Lifeline - a deceleration device that contains a drum-wound line that may be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which after onset of a fall, automatically locks the drum and arrests the fall.
 - Shock-Absorbing Lanyard - a flexible line of webbing, cable, or rope used to secure a body belt or harness to a lifeline or anchorage point that has an integral shock absorber.

4.4 Responsibilities

Responsibilities are defined by individual below.

4.4.1 Corporate Safety & Health Manager

- Ensure all management and affected employees are aware of the Fall Protection Program and enforce the same.
- Provide all materials and hardware for effective implementation of this program and ensure they are properly utilized and maintained.
- Identify jobs requiring the use of fall protection.
- Periodically review worksites for compliance with this program.

4.4.2 Superintendent and Foreman

- Be knowledgeable of Fall Protection Program requirements.
- Evaluate fall hazards during the Pre-Job Hazard Assessment
- Make routine surveys of work areas to ensure proper use, condition, and maintenance of fall protection equipment.
- Ensure all affected employees participate in review of project specific fall hazards and attend scheduled annual fall protection training.

4.4.3 Employees

- Actively participate in the assigned fall protection orientation and training sessions and adhere to the safe operating guidelines contained within this program.
- Inspect fall arrest devices and equipment prior to use.
- Report any defects in fall arrest devices noted during daily inspections to their supervisor.
- Store fall arrest devices in the appropriate manner following use.

4.5 General Requirements

The use of 100% Fall Prevention measures shall be utilized when personnel are exposed to fall hazards or working within 6 feet of an unprotected fall in excess of six feet. To ensure that these requirements are met, STEP requires that all personnel utilize a personal fall arrest system. Free climbing is strictly prohibited.



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Fall protection and prevention implemented for any one task may include one or more of the following:

- Preventing a fall by installing standard railings with toeboards;
- Preventing a fall by restricting the travel of individuals through the use of barricades;
- Using personal fall protection equipment (full body harness and lanyards) to arrest a fall.

4.6 Personal Fall Arrest Systems

Personal fall arrest systems shall comply with the following:

- Personal fall arrest systems shall consist of a full-body harness and a six-foot, shock-absorbing lanyard.
- All connectors shall be drop forged, pressed or formed steel, or made of equivalent materials.
- Dee-rings and snap hooks shall have a minimum tensile strength of 5,000 pounds and a minimum tensile load of 3,600 pounds.
- Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.
- All ropes and straps used in lanyards, lifelines, and body harnesses shall be made of synthetic fibers.
- All anchorage points for personal fall arrest systems shall be capable of supporting 5,000 pounds per employee attached.
- The attachment point of the body harness shall be in the center of the wearer's back, near shoulder level.
- Components subjected to impact loading shall be removed from service until inspected by a competent person.
- Full body harness systems shall be inspected prior to each use for mildew, wear, damage, and other deterioration, and effective components removed from service if their function or strength has been adversely affected.

4.7 Personnel Lifting

Riding the line and use of manbaskets for hoisting personnel shall only be allowed with prior approval of the STEP Corporate Safety & Health Manager. All equipment used for the hoisting of personnel to the work area of the tower shall comply with OSHA Directive CPL 2-1.29, ANSI – B30.7, 29 and CFR 1926.550 and Subpart M.

4.8 Positioning Device Systems

All positioning device systems and their use shall meet the following criteria:

- Positioning devices shall be rigged such that a worker cannot fall more than 24 inches.
- Positioning device anchorage points shall be capable of supporting an impact load of at least 3,000 pounds.
- All connectors shall be drop forged, pressed or formed steel, or equivalent materials, and shall have a minimum tensile strength of 5,000 pounds.
- Dee rings and snap hooks shall be proof-tested to a minimum tensile strength of 3,600



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pounds.

- Only locking type snap hooks shall be used.
- Positioning devices systems shall be inspected prior to use and defective components shall be removed from service.

4.9 Vertical and Horizontal Lifelines

The following requirements apply to all vertical and horizontal lifelines:

- All safety lines and lanyards shall be protected against being cut or abraded.
- Hardware shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to the attached body harness or lanyard.
- When vertical lifelines (drop lines) are used, not more than one employee shall be attached to any one lifeline.
- Full body harness systems shall be secured to anchorage points capable of supporting 5,000 pounds per employee. When self-retracting lifelines or other deceleration devices that limit free fall to 2 feet are used, anchorage points shall be capable of withstanding 3,000 pounds.
- Independent lifelines (drop lines) shall have a minimum tensile strength of 5,000 pounds.
- Self-retracting lifelines and lanyards that automatically limit free fall distance to 2 feet or less shall have a minimum tensile strength of 3,000 pounds.
- Horizontal lifelines shall have a tensile strength capable of supporting a fall impact load of at least 5,000 pounds per employee using the lifeline, applied anywhere along the lifeline. When more than one employee is using a horizontal life line, the life line shall be capable of supporting 5000 pounds per employee or an engineered safety factor of two (2) shall be maintained, based on a worst case scenario.
- Anchorage points shall be independent of any other system and shall be capable of supporting 5,000 pounds per employee using the anchorage.
- Snap hooks shall be locking type snap hooks and shall not be connected to each other.

4.10 Ladders

The following general precautions are to be followed for safe use of ladders:

- Ladders must be inspected for defects prior to use. Defective ladders shall be tagged "DO NOT USE" and removed from the task site.
- All portable ladders utilized to gain access to an elevated work surface must be secured to prevent displacement, and extend at least 36 inches above the surface to be accessed.
- Ladders must be placed on stable and level surfaces.
- When using a ladder against a wall, the base of the ladder must be placed at a distance 1/4 of the height of the ladder.
- Stepladders may only be used with the spreaders in the open and locked position.
- Workers must face the ladder and keep at least one hand on the ladder whenever ascending or descending. Materials cannot be hand-carried on a ladder if they require the full-time use of one hand.



4.11 Employee Information and Training

All workers who may be required to work from elevated surfaces will receive initial and annual training in fall protection.

Content of Training Program –Training topics will include, but not be limited to:

- Nature of fall hazards at the STEP projects.
- The correct procedures for erecting, using, inspecting, and disassembling fall arrest systems.
- The limitations of fall arrest systems.
- The correct method of wearing and attaching safety harnesses and lanyards.
- Role of employees in fall protection measures.
- The requirements of the STEP Fall Protection Program.

4.12 Program Review and Revision

The Corporate Safety & Health Manager shall perform an annual assessment of this program. The assessment will address the degree and consistency of program element implementation in the workplace. The attached Program Performance Verification criteria will be utilized to conduct and document this assessment.

4.13 Disciplinary Policy

All employees are expected to adhere to the procedures given in this written program. Failure to comply will result in disciplinary action as described in the company's disciplinary policies.

4.14 Record Keeping

Human Resources shall maintain an accurate record of the following information:

- All employee-training records will be maintained for at least two years from the last training date.



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Fall Protection

Attachment 4-1 Fall Protection Program, Performance Verification Checklist

Review Date: _____

No.	Program Element	Status	
		Complete (✓)	Target Date
	The Corporate Safety & Health Manager has been appointed and trained to oversee the administration of this program.		
	Are all individuals who use fall protection/prevention devices trained in accordance with the written program?		
	Are fall protection/prevention devices inspected prior to each use?		
	Are fall protection/prevention devices not passing a daily inspection immediately removed from service until repairs can be made?		
	Are all accidents involving fall protection investigated for cause and corrective action?		
	Do Supervisors include inspection of fall protection/prevention devices in their job site inspections and discuss fall protection issues during toolbox safety meetings?		
	Do subcontractors comply with Fall Protection Program requirements?		
	Are positioning devices used as intended?		
	Is 100% fall protection enforced?		

Comments:

Reviewer Names:



Solutions To Environmental Problems (STEP)
Fall Protection

Attachment 4-2 Fall Protection Program, Harness Safety Checklist

Daily Inspection Sheet
Climb Belt /Harness /Hardware

Job Name: _____ Date: _____
Supervisor/Crew _____ Inspection By: _____
Leader: _____
Project Manager: _____

	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Sun.
Belt / Harness							
Webbing: No tears, cuts/burns, or chemical degradation							
Buckles and Rivets: No deformities, missing springs, or abnormal/excessive wear							
D-Rings: No cracks, wear, or deformity							
Harness: Fits properly							
Lanyards							
Grommets: No excessive wear or deformity							
Snap Hooks: Latch properly, no excessive wear or deformity							
Rope or Strap: No cuts, wear, fraying, chaffing, bunny fur, chemical degradation, ripping, or unraveling braid							
Hardware							
Pelican Hook: Working safety catch, bar closes and latches, no wear or deformity							
Safety Climb: Spring, chains, and quick release pins for proper operation							
Spreader Bars/Chains: No visible damage or wear							



13.0 HAZARD COMMUNICATION

13.1 Scope and Application

This program applies to all STEP employees who are, or may be exposed to hazardous materials used in the workplace. It also applies to contractors who may be exposed to STEP hazardous materials or bring hazardous materials to STEP sites or facilities.

13.2 Responsibilities

Program responsibilities are defined below for the individuals designated to ensure the proper implementation of this program.

13.2.1 Corporate H&S Manager

- Ensure all management and affected employees are aware of the Hazard Communication Program.
- Coordinate and manage the overall written Hazard Communication Program.
- Advise Management of any program deficiencies noted requiring his/her action or involvement.
- Prepare internal MSDSs as needed.
- Ensure each office's MSDS/Hazardous Material Inventory binders are kept up-to-date and made available to all employees and contractors.
- Prepare example labels and update internal MSDSs as needed.
- Archive MSDSs.
- Ensure a Program Performance Verification of the Hazard Communication Program is performed and documented at least annually.

13.2.2 Human Resources

- Maintain all training documentation.

13.2.3 Superintendent and Foreman

- Ensure all elements of the HazCom Program are effectively communicated and affected employees in their work area comply with the program elements.
- Ensure workers comply with HazCom guidelines and PPE requirements on a daily basis.
- Conduct employee HazCom training or ensure all employees attend scheduled training.
- Ensure all containers of materials in their work area are labeled.
- Provide or schedule affected employees' training.

13.2.4 Employees

- Use engineering controls, work practices, and PPE as required by company procedures and policies.



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- Inform Management of any symptoms of over exposure that may possibly be related to hazardous chemicals.
- Inform Management of any missing labels on containers.
- Actively participate in all hazard communication training.

13.2.5 Contractors

- If requested, provide a copy of MSDSs to the STEP Primary Contact for all hazardous materials brought on to the property prior to them being brought on site.
- Inform their employees of the availability of STEP MSDSs.
- Ensure all subcontractors adhere to the requirements of this program.

13.3 Contractors

STEP's Contractor Safety Program is the primary vehicle for interacting with contractors at the facility, including those involving Hazard Communication. The program as applicable to Hazard Communication is summarized below:

- Prior to the initiation of work, the STEP Primary Contact for a given Contractor (or designee) will conduct and document a facility Pre-Job Safety Briefing that is unique to the work to be accomplished.
- If requested, Contractors are required to provide copies of all MSDSs to the STEP Primary Contact for all hazardous materials brought on to STEP property prior to them being brought on site.
- Contractors are required to relay information on facility hazards to their employees.
- Contractors are required to ensure all subcontractors adhere to the requirements of this program.

13.4 Hazard Determination

Raw Materials and Supplies

STEP does not intend to determine the hazards of materials purchased from suppliers and/or manufacturers, but has chosen to rely upon the evaluation of the materials performed by suppliers and/or manufacturers to satisfy the requirements for hazard determination.

Facility-Produced Materials

In the event STEP must determine the hazards of materials generated at the STEP, the hazard determination will be performed or overseen by the Corporate H&S Manager.

13.5 Hazardous Materials Inventory

A master Hazardous Materials Inventory will be developed and maintained by the Corporate H&S Manager. This list will be updated annually; the most current inventory is included as an attachment.



13.6 Labeling

All containers of hazardous materials must be either being used by the individual that recently (i.e., that shift) transferred the material, or it must be labeled. It is the responsibility of the employee using a material that the label is present.

Materials in Original Containers

If labels on original containers are found to be inadequate, defaced, or otherwise unacceptable, the material will be held until the Corporate H&S Manager has determined whether the material will be accepted, and if it will, what label is to be applied.

Secondary Containers/Replacement Labels

All containers that meet the following criteria are considered to be secondary containers:

- not the original container, or the label for the original container is deficient, defaced, or otherwise inadequate; and
- to be used by more than one person on a single shift or by one or more employees over multiple shifts.

All secondary container labels must be completed and the label applied prior to transfer of the material into the container. The Corporate H&S Manager will develop example laminated labels for the most common secondary containers in the facility, and will place these examples in the local MSDS books.

If a container has been used previously, the original label must be removed or defaced so that only one hazard label is on the container at one time.

13.7 Material Safety Data Sheets

MSDSs for all hazardous material to which employees are or may potentially be exposed will be obtained and made readily available to all employees. Original MSDSs will be maintained in an office-specific MSDS Binder. MSDSs will be kept current to a maximum date from receipt of five years. The Corporate H&S Manager will be responsible for ordering new MSDSs for existing materials.

Archiving MSDSs

If a material is no longer used or present at the facility, the MSDS will be archived in a location or file designated for that purpose. Typically, these materials are identified during the annual Hazardous Materials Inventory update. The archive date of the MSDS will be marked in ink on the first page of the MSDS, and the archived MSDS will be retained for 30 years.

STEP-Generated MSDSs

If a project must generate an MSDS, the Corporate Safety & Health Manager will generate the MSDS. All internally-produced MSDSs must be updated by the Corporate Safety & Health Manager at least every three years.



13.8 Employee Information and Training

The Superintendent or Foreman will arrange for employee information and training of existing hazardous materials at the time of initial assignment and whenever a new hazardous material is introduced into the work area. Employees will be trained in accordance with the outline in Attachment 13-3.

13.9 Hazards from Non-Routine Tasks

Periodically, employees are required to perform non-routine tasks with hazardous materials. Prior to starting work on such projects, each affected employee will be given information by their superintendent about hazards to which they may be exposed during such an activity. The Corporate Safety & Health Manager may be consulted for a determination of potential hazards if not immediately apparent.

13.10 Program Review and Revision

This program will be reviewed at least annually by the Corporate Safety & Health Manager and will be revised to reflect any changes in procedures or best management practices. The assessment will address the degree and consistency of program element implementation in the workplace. The attached Program Performance Verification (PPV) criteria will be utilized to conduct and document this assessment. The Corporate Safety & Health Manager will be responsible for ensuring the conduct of the review and incorporation of any revisions. The latest PPV will be retained by the Corporate Safety & Health Manager.

13.11 Disciplinary Policy

All employees are expected to adhere to the procedures given in this written program. Failure to comply will result in disciplinary action as described in STEP's disciplinary policies.

13.12 Record Keeping

The individuals or departments listed below shall maintain the following information:

- All employee training records will be maintained by Human Resources at least two years from the last training date.
- All contractor safety information will be retained by the responsible person as stipulated in the Contractor Safety Program.
- The latest Program Performance Review and latest Hazardous Material Inventory will be retained by the Corporate H&S Manager.
- Original and archived MSDSs will be maintained by the Corporate H&S Manager.



Solutions To Environmental Problems (STEP)
Hazard Communication Program

Attachment 13-1 Hazard Communication, Program Performance Verification

Reviewer Names: _____

Date: _____

Hazard Communication Program	YES	NO
1. Is a written Hazard Communication Program complete and representative of the current organizational structure?		
2. Is the Hazardous Material Inventory maintained and updated at least annually to reflect products currently in use (updated in last 12 months)?		
3. Is there an MSDS for each chemical listed in the Hazardous Material Inventory?		
4. Are employees working with chemicals trained on how to protect themselves, recognize, and react to overexposure or spill?		
5. Is training documented?		
6. Are all secondary use containers labeled in accordance with the written Hazard Communication Program?		
7. Are contractors required to provide information on chemicals they plan to bring to the facility / site prior to doing so?		

Comments:



Solutions To Environmental Problems (STEP)
Hazard Communication Program

Attachment 13-2 Hazardous Materials Inventory

Material	How Used	Comments

Page ____ of ____



Attachment 13-3 Employee Information and Training

This training outline specifies the STEP procedure for Superintendents and Foremen to use to provide hazard communication training to the employees assigned to their work teams. To meet the training required by 29 CFR 1910.1200(h), all employees will receive the following information.

1.0 A review of the basic elements and requirements of hazard communication

A review of the company's Hazard Communication Program, including identifying the Corporate H&S Manager. This includes a discussion of the key elements of the OSHA Hazard Communication Standard 29 CFR 1910.1200, including:

- identification of hazardous chemicals used in the facility (or on site) and processes that may produce health or physical hazard exposures to personnel;
- availability of MSDSs for chemicals purchased and used in the facility / site and all processes where exposure to personnel may occur;
- provision of labels, signs, MSDSs, and process instructions to adequately warn of potential or known hazards;
- the training program for all affected employees;
- records retention; and
- periodic program periodic reviews and update procedures.

2.0 Operations or processes where exposures can occur and the hazardous chemicals that are used in the operation/process.

A discussion of each applicable each operation/process, along with a review of the applicable hazards, each hazardous chemicals in use. The Hazardous Material Inventory and appropriate MSDSs for each chemical will be reviewed or referenced. The following information is to be provided to the employees:

- name of hazardous chemicals used in applicable processes;
- controls in effect to limit exposures (e.g., engineering controls, workplace practices, personal protective equipment); and
- means by which the presence or release of hazardous materials can be detected (e.g., spills, industrial hygiene monitoring, direct-reading instruments, smells).

3.0 Location of documents related to hazard communication, including the following:

- Company Hazard Communication Program - Location of the program and the employee's right to review the written program at any time.
- Hazardous Material Inventory – Including the location of the inventory.
- Material Safety Data Sheets (MSDSs) – Including the location and availability for each hazardous material in use. An example MSDS will be reviewed, section by section, and instructions on interpreting the MSDS is to be given. All workers must know where the MSDSs are located and that all MSDSs are available for review as needed.



15.0 PERSONAL PROTECTIVE EQUIPMENT PROGRAM

15.1 Scope and Application

The PPE Program applies to all workers who will wear PPE as part of the overall injury and illness prevention process. Although engineering controls are generally preferred to PPE, these may not be reasonable, feasible, or practical. PPE use then becomes a necessary and effective control method. The goal is to eliminate exposures through inhalation, ingestion and absorption and to minimize PPE use. PPE is good only if properly selected and used. Improper selection or use can lead to diminished protection and injury. Proper PPE selection and use requires a high degree of personal responsibility. Competent people and training will be provided to assist with proper PPE selection and use. It is everyone's responsibility to properly wear the correct PPE. The STEP PPE Program will be reviewed annually and updated as needed.

15.2 Responsibilities

Responsibilities are defined by individual below.

15.2.1 Corporate H&S Manager

- Provide all materials and equipment required for effective implementation of this program.
- Provide guidance in the selection of appropriate PPE.
- Perform a documented Program Performance Verification of the program at least annually.

15.2.2 Superintendent and Forman

- Evaluate compliance with this program during weekly safety inspections.
- Discuss and document personal protection concerns during safety meetings.
- Ensure that only approved PPE is purchased and used.
- Ensure implementation of the Personal Protective Equipment program.

15.2.3 Employees

- Adhere to all requirements of the PPE Program.
- Inspect all PPE prior to use and obtain new PPE when damaged or defective.

15.2.4 Subcontractors

- Adhere to all requirements of the PPE Program.
- Inspect all PPE prior to use and obtain new PPE when damaged or defective.



Solutions To Environmental Problems (STEP) Personal Protective Equipment Program

15.3 Hazard Assessment

A survey of each work area will be conducted by the site Superintendent and Foreman. The purpose of the survey is to identify all potential hazards associated with the operations/tasks that are present on the jobsite. Once the hazards have been identified, the superintendent will make recommendations regarding PPE needs for the operation. The PPE Hazard Assessment Worksheet is included as an attachment and will be used for assessing each task.

15.4 General PPE Requirements

- Hard hats - shall be worn at all times on site. Hard hats are to be worn with the bill in front, except for welders who are actively welding. All hard hats must meet ANSI Z89.1 and contain labeling satisfying this requirement.
- Safety Glasses - shall be worn at all times when there is a potential exposure to flying projectiles. All safety glasses must meet ANSI Z87.1 and contain labeling satisfying this requirement. Goggles or a face shield over safety glasses are compulsory when drilling, burning, chipping, grinding, gas welding, grouting and where otherwise required by your foreman.
- Foot wear- no sandals, opened toed shoes, tennis shoes or look a likes will be allowed. Only good repairable type work boots or shoes.
- Harness and Lanyards - shall be used when fall potential is six feet or more above the ground. More specific requirements for fall protection PPE is contained within the STEP Fall Protection Program.
- Shirts - with at least 4 inch sleeves are to be worn at all times by all personnel while on a company site. Shorts, tank tops, loose or torn clothing will not be permitted.
- Finger rings and wristwatches - are a constant hazard and all employees are encouraged to remove them while working. No jewelry permitted when performing electrical work.
- Welding hoods - are mandatory for all arc welders and safety spectacles must be worn under the hood.
- Gloves – shall be worn when handling material with sharp or rough edges or as directed by your Supervisor.
- Respiratory Protection – Respirator use is covered under the Respiratory Protection Program.

15.5 Purchasing Of New PPE

When new job tasks or processes require new PPE, only approved equipment may be purchased. Most PPE purchased from safety suppliers is approved for intended use. Refer to specific OSHA and consensus standards (NIOSH, ANSI).

15.6 Employee Information and Training

Employees must receive training initially. Retraining must be conducted when work processes change; types of PPE are changed; or when there is reasonable belief that employees have not retained the requisite understanding of the above requirements. The training should contain the following content:



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Personal Protective Equipment Program

- When PPE is necessary;
- What PPE is required;
- How to properly don, doff, adjust and wear PPE;
- Limitations of the PPE; and
- The proper care, maintenance, useful life and disposal of PPE.

15.7 Medical Evaluations

Medical evaluations may be necessary for specific types of PPE (e.g., respirators). The Corporate Safety & Health Manager shall establish which employees are to be included in medical surveillance, as well as the nature of the medical surveillance.

15.8 Program Review and Revision

The Corporate Safety & Health Manager shall perform an annual assessment of this program. The assessment will address the degree and consistency of program element implementation in the workplace. The attached Program Performance Verification criteria will be utilized to conduct and document this assessment.

15.9 Disciplinary Policy

All employees are expected to adhere to the procedures given in this written program. Failure to comply will result in disciplinary action as described in STEP's disciplinary policies.

15.10 Record Keeping

Human Resources shall maintain an accurate record of the following information:

- All employee medical records shall be retained for the duration of the affected employee's employment plus thirty years.
- The most current employee training records.
- Incident Forms will be maintained for five years.



Solutions To Environmental Problems (STEP)
Personal Protective Equipment Program

Attachment 15-1 Personal Protective Equipment, Program Performance Verification

Location: _____

Review Date: _____

No.	Program Element	Status	
		Complete (√)	Target Date
1.	The Corporate S&H Manager has been appointed and trained to oversee the administration of this program.		
2.	Is only approved PPE purchased for use?		
3.	Have employees been trained in the use and care of PPE?		
4.	Have hazard assessments been conducted for all job tasks?		
5.	Are visitors supplied with required PPE?		
6.	Is defective PPE removed from service promptly and replaced?		
7.	Are all employees and subcontractors wearing the required minimum PPE?		

Comments:	Reviewer Names:



Solutions To Environmental Problems (STEP)
Personal Protective Equipment Program

Attachment 15-2 PPE Hazard Assessment Worksheet

Location: _____ Date: _____
Job Task: _____ Assessor: _____
Check All That Apply _____ Comments / PPE Required _____

Hand Protection

PPE TO BE USED:

Cuts	☐	Abrasions	☐
Hot	☐	Cold	☐
Wet Work	☐	Dry Work	☐
Chemical	☐	Vibration	☐

Foot Protection

PPE TO BE USED:

Object weight _____ lbs.

Sharp Objects in area ☐

Eye Protection/ Face Protection

PPE TO BE USED:

Impact Only ☐

Safety glasses with side shields

Chemical Splash ☐

Goggles/Face Shield

Welding, Sparks, Grinding ☐

Safety glasses & face shields

Head Protection

PPE TO BE USED:

Possible injury/falling object ☐

Contact w/ electrical hazards ☐

Body

PPE TO BE USED:

Protective Clothing ☐

Apron ☐

Hearing Protection

PPE TO BE USED:

Plugs ☐

Apron ☐

Respiratory Protection

PPE TO BE USED:

Disposable (Dust Mask) ☐

Cartridge Type and Changeout Frequency: _____

Other: _____



7.0 TOOL BOX SAFETY MEETINGS

7.1 Scope and Application

The scope of the Tool Box Safety Meetings is to ensure proper instruction is provided for employees in the recognition and avoidance of unsafe work practices or conditions. Tool Box Safety Meetings will also provide information on the safety regulations and STEP safety program requirements that apply to their work environment. This program is applicable to all STEP employees and subcontractors.

7.2 References

STEP Tool Box Safety Meeting Manual, and OSHA 29 CFR 1926.21.

7.3 Responsibilities

Program responsibilities are defined below for the individuals designated to ensure that Tool Box Safety Meetings are properly conducted and documented.

7.3.1 Corporate Safety & Health Manager

- Ensure all management and affected employees are aware of the requirement to conduct Tool Box Safety Meetings on a weekly basis.
- Provide all materials and hardware for effective presentation and documentation of the Tool Box Safety Meetings and ensure they are properly utilized and maintained.
- Periodically review worksites to ensure meetings are being properly conducted and documented.

7.3.2 Superintendent, Foreman, Project Manager

- Be knowledgeable of Tool Box Safety Meeting requirements.
- Acquire a Tool Box Safety Meeting manual from the Corporate Safety Manager
- Prepare for and present the weekly safety meetings to STEP field crews and subcontractors.
- Ensure safety meetings are properly documented.
- Ensure all affected employees and subcontractors attend weekly safety meetings.

7.3.3 Employees

Employees actively participate in the weekly Tool Box Safety Meetings and adhere to the safety instruction provided.

7.4 Safety Meeting Preparation, Presentation and Documentation



Solutions To Environmental Problems (STEP) Tool Box Safety Meetings

7.4.1 Safety Meeting Preparation

- The Corporate Safety & Health Manager will furnish the STEP Supervisors with a copy of the STEP Tool Box Safety Meeting manual.
- The Tool Box Safety Meeting manual provides fifty-two (52) suggested construction safety topics, which are organized into twelve tabs, corresponding to each month of the year. You are not required to use the suggested topics, but you are required to hold a toolbox meeting each week.
- Preparing for a toolbox safety meeting can be as elaborate or as brief as needed, based on the topic you are presenting. In general, a toolbox safety meeting is defined as a short safety-training meeting with employees, usually on Mondays at the start of the shift.
- After selecting the meeting topic, you should determine if you need any visual aids or other reference material to present the meeting. You may also need to review relevant OSHA standards or STEP Corporate Safety Program documents to supplement the standardized Toolbox Safety meeting material.

7.4.2 Safety Meeting Presentation

- When you conduct the safety meeting, it is best to include only those employees who need the information. For example, for a talk on operating heavy machinery, you would probably only include operators, not everyone on the jobsite. But for a talk about working in areas where heavy equipment is operating, you may include many more workers from the site, perhaps even all of them.
- Introduce each toolbox talks by explaining why you selected the topic, as well as how it applies to them. You need to project your commitment, concern, and interest in the safety program.
- Toolbox safety meetings are also an excellent time to discuss specific jobsite hazards, past accident, and employee safety concerns. After reviewing the topic selected for the week, you will then address the following four topics:
 1. Accident Investigations – Review of any recent accident investigations from any accidents with injuries/illnesses or near misses, which may have happened on this project or similar project environment.
 2. Job Hazards – Review of any site-specific safety hazards identified as part of the site Hazard Assessment or through conduct of site safety inspections.
 3. Old Business – Review of any safety issue or concerns that may have been raised by employees at a previous safety meeting or during the course of the project.
 4. New Business – Open the floor for questions or comments on the main topic, site-specific hazards, or any other safety issues that employees would like to share.

7.4.3 Safety Meeting Documentation

The STEP form for documentation of the Toolbox Safety meeting is included as an attachment to this program. This form documents the names of the employees who attended, the companies represented, date, location, topic, and provides space to document the site-specific hazard information discussed. The Toolbox Safety meeting form should be completed for each meeting and maintained with other documentation for that project.



Solutions To Environmental Problems (STEP)

Tool Box Safety Meetings

7.5 Program Review and Revision

The Corporate Safety & Health Manager shall perform an annual assessment of this program. The assessment will address the adherence to program requirements and the overall effectiveness of the Toolbox Safety meetings. The attached Program Performance Verification criteria will be utilized to conduct and document this assessment.

7.6 Disciplinary Policy

All employees are expected to adhere to the procedures given in this written program. Failure to comply will result in disciplinary action as described in STEP's disciplinary action policies.

7.7 Recordkeeping

All Toolbox Safety meeting records will be maintained in project files for at least two years from the project completion date.



Solutions To Environmental Problems (STEP)
Tool Box Safety Meetings

Attachment 7-1 Tool Box Safety Meeting Form

Date: _____ Supervisor/Crew Leader: _____	
Topic: _____ Job Location: _____	
Accident Investigation Review:	
Job Hazards Review:	
Old Business:	
New Business:	
Print Employee Name	Employee Company



Solutions To Environmental Problems (STEP)
Tool Box Safety Meetings

Attachment 7-2 Tool Box Safety Meetings, Program Performance Verification

Reviewer
Names:

Date:

Toolbox Safety Meeting Program	YES	NO
1. Does the Superintendent have a Tool Box Safety Meeting Manual?		
2. Is the Superintendent aware of Tool Box meeting requirements?		
3. Does documentation exist for Tool Box Safety meetings?		
4. Are Tool Box meeting forms being completed properly?		
5. Do interviewed employees reveal that meetings occur?		
6. Do interviewed employees feel that the meetings are effective?		
7. Is site-specific information (Job Hazards, Old Business, etc.) also reviewed?		

Comments: