

M&T AGRA

(formerly Moore & Taber)

Geotechnical & Environmental Services

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June 22, 1994

Job No. 894-028

Brown & Roots Services Corp. (BSRC)
P.O. Box 32208
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Attention: Mr. Bert Nintemann

**ADDENDUM TO HEALTH AND SAFETY PLAN (HASP)
PROPOSED DRMO RELOCATION, LOT X
LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA**

M&T AGRA, Inc. is in receipt of the review comments from BSRC (Facsimile dated June 15, 1994) from the Government concerning the site-specific Health and Safety Plan (HASP) for the proposed DRMO Relocation project. The revisions to the HASP are presented below and provide responses to the comments in the Department of the Navy letter dated June 13, 1994 (Ens. M.A. Vieux) and Facsimile transmission from C. Anna Ulaszewski, dated June 13, 1994. This addendum is intended to incorporate and/or revise the original HASP dated May 24, 1994 to the review comments.

Comment: "Any substitutions of personnel must be documented and submitted to the ROICC office as an amendment to your Site Specific Health and Safety Plan."

Response: *Any such substitution of personnel, as described on page 7 in the HASP dated May 24, 1994, will be documented and submitted to the ROICC office as an amendment to the HASP.*

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Comment: "Work will not be allowed without an approved Site Safety Officer on-site."

Response: *The DRMO Relocation project involves many tasks, most of which do not involve the handling of potentially contaminated materials. As such, this HASP only applies for the duration of the handling of the potentially contaminated materials. It should be understood that other work on the DRMO site will occur prior to and following the handling of the potentially contaminated materials. The Site Safety Officer will be present on-site only for the duration of the handling of the potentially contaminated materials.*

Comment: "The HASP should include a route map to the nearest Hospital and the phone number."

Response: *Figure 4 of the HASP dated May 24, 1994 presents a route map to the nearest Hospital. BRSC has informed M&T AGRA that the base medical clinic can be reached by dialing 911.*

Comment: "What HAZWOPER training, in accordance with 29 CFR 1910.120, have the on-site workers received?"

Response: *TRAINING REQUIREMENTS - All applicable training guidelines set forth in 29 CFR 1926 shall be used to properly prepare the members of the work crew. The Site Safety Office shall refuse work area entry to anyone who has not received the required training and/or attended the daily tailgate meetings. The respiratory training shall have included a quantitative fit testing. Moreover, personnel in the work area must also be trained in the proper use of personal protective equipment. Tailgate meetings shall be held daily.*

All personnel who will be engaged in the construction activities at the site will be required to complete a minimum of 40-hours of instruction in the OSHA Emergency Response and Hazardous Materials Hauling Program which will include, but not be limited to the use of Level 'C' PPE, emergency procedures, hazard recognition and decontamination requirements.

Personnel who have completed the initial 40-hour OSHA training, in excess of 12-months, will be required to attend an 8-hour annual update training class to the OSHA 40-hour course. Recording of all training will be retained in the project office.

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RESPIRATOR FIT TESTING - Qualitative and quantitative respirator fit testing procedures shall be implemented in accordance with protocols presented in Title 8, Section 8-1529, Appendix C for negative-pressure air-purifying respirators (ARPS). Procedures common for all APR fit testing will include the following:

- Respirator selection from among various sizes and different manufactures.
- Performing conventional negative and positive-pressure fit checks. Before conducting the negative-or positive-pressure test the subject shall be told to "sear" the mask by rapidly moving the head from side-to-side and up and down, while taking deep breaths.
- Participating in fit testing exercises such as: normal and deep breathing, turning head side-to-side, moving head up and down, reading and talking, bending over and touching the toes and jogging in place.
- These tests shall not be conducted on individuals if there is any hair growth between the skin and facepiece sealing surfaces.
- Qualitative fit testing shall include: Irritant Smoke and Isoamyl Acetate Protocols.
- Fit testing shall be repeated at least every six (6) months.

Comment: "How will the decontamination water be disposed?"

Response: [TEXT IN DRAFT]

Comment: On page 1 of the HASP dated May 24, 1994, under "Previous Land Use," delete the words "foundry waste or hydrocarbon waste."

Response: The words "foundry waste or hydrocarbon waste" will be deleted from page 1 of the HASP dated May 24, 1994.

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Comment: On pages 9 and 10 of the HASP dated May 24, 1994, under "JOB HAZARDS AND RISK ASSESSMENT SUMMARY," for each chemical compound or constituent, summarize the routes of entry and exposure risks.

Response: Chemical Hazards

Based on known conditions and available information, several different chemical compounds or constituents could be encountered during field activities at the subject site. Petroleum hydrocarbons and volatile aromatic hydrocarbons including benzene, toluene, ethylbenzene, and xylene (BTEX) are the chemical hazards that are likely to be encountered on this project. Inhalation and skin absorption are anticipated to be the primary routes of exposure by these substances. Ingestion of the material may also be of concern, thus personnel should follow decontamination procedures when exiting the work area for breaks, eating, drinking, or smoking.

EXPOSURE LIMITS AND RECOGNITION QUANTITIES

COMPOUND	EXPOSURE LIMIT	IDLH	ODOR	LEL	UEL
Benzene	1 ppm	CA	Aromatic odor	1.3%	7.1%
Ethylbenzene	100 ppm	2000 ppm	Aromatic odor	1.0%	6.7%
Toluene	100 ppm	2000 ppm	Aromatic Benzene odor	1.3%	7.1%
Xylene	100 ppm	1000 ppm	Aromatic odor	1.0%	6.0%
Copper (as Cu)	1 mg/m ³	--	odorless	--	--
Lead (as Pb)	0.05 mg/m ³	--	variable	--	--
Mercury (as Hg)	0.1 mg/m ³	28 mg/m ³	odorless	--	--
Zinc (as ZnCl ₂)	1 mg/m ³	2000 mg/m ³	acid odor	--	--

CA = Carcinogen
ppm = parts per million

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Response: Hazards Associated with the Materials of Concern
(Continued)

Since the following contaminants of concern have a moderate to high potential for exposure through inhalation and dermal contacts, precautions must be taken to avoid contact with contaminated soil and organic vapors released from the soil. In addition to organic compounds, heavy metals including copper, lead, mercury, and zinc may be encountered. Inhalation of dust contaminated with one or more of these metals could lead to respiratory tract problems.

Petroleum Hydrocarbons

These may exist as a mixture of hydrocarbons, including aliphatic hydrocarbons, aromatic hydrocarbons, and a variety of branched and unsaturated hydrocarbons. Extremely high-levels of exposure could produce symptoms such as dizziness, coma, collapse and death. Exposure to non-lethal doses is usually followed by complete recovery, although cases of permanent brain damage following massive exposure have been reported. In general, the toxicity is related to the content of benzene and other hydrocarbons.

OSHA Permissible Exposure Limit (PEL) and the American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Value (TLV) exposure limit for gasoline vapor, which may be present in petroleum hydrocarbons, is 300 parts per million (ppm) for an eight-hour day. The OSHA short-term exposure limit is 500 ppm. This level should not be exceeded for more than 15 minutes time-weighted average (TWA) during an eight-hour workday. Most people can detect gasoline vapor in concentrations as low as 50 ppm through their sense of smell.

Benzene

The primary effects of short-term exposure to benzene through inhalation are on the central nervous system (CNS). The exposure route is via inhalation of vapor or through skin and eye contact. At exposure levels greater than 10 ppm, inhalation or ingestion may cause headache, dizziness, drowsiness, and nausea. Exposure to liquid and vapor may produce primary irritation to skin, eyes, and upper respiratory tract. If the liquid is aspirated into the lung, it may cause pulmonary edema and hemorrhage. Target organs are the CNS, skin, bone marrow, eyes, and respiratory tract.

The Threshold Limit Value (TLV) is 1 ppm for an 8-hour period. The Short-Term Exposure Limit (STEL) is 5 ppm average for 15 minutes.

Ethylbenzene

Route of entry is via inhalation, ingestion, eye, and skin contact. Kidney disease, liver disease, chronic respiratory disease, and skin disease are some harmful effects and symptoms. The vapor can cause irritation to the eyes, nose and throat. If inhaled it will cause dizziness or difficult breathing. Erythema and inflammation of the skin may result from contact of the skin with liquid.

The TLV is 100 ppm and the STEL is 200 ppm for 30 minutes.

Toluene

The vapor irritates the eyes and upper respiratory tract. If inhaled, toluene will cause nausea, vomiting, headache, dizziness, difficulty breathing or loss of consciousness. The liquid is irritating to eyes and causes drying of skin. If swallowed, it will cause nausea, vomiting or loss of consciousness.

The TLV for an 8-hour period is 100 ppm, and the STEL is 600 ppm for 30 minutes. Chronic toxicity by ingestion may cause kidney and liver damage and CNS problems.

Xylene

Xylene exists in three isomeric forms: ortho-, meta-, and para-xylene. Xylene is a colorless, flammable liquid with a sweet odor similar to benzene.

Xylene is a constituent of some fuels. The route of entry is through the inhalation of vapor, as well as ingestion and skin and eye contact. Exposure may affect the CNS, eyes, gastrointestinal tract, blood, liver, kidneys and skin. Prolonged skin contact may cause drying and defatting of the skin, which may lead to dermatitis. Liquid xylene is irritating to the eyes and mucous membranes. If swallowed, it will cause nausea, vomiting or loss of consciousness. If this chemical gets into the eyes, irrigate immediately. If it contacts the skin, wash with soap and water promptly. If inhaled, move the victim to fresh air at once. If swallowed, do not induce vomiting and seek medical attention.

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The TLV is 100 ppm, and the STEL is 150 ppm for 30 minutes.

Copper

Copper is a metal with a distinct reddish color. It is a poison to humans by ingestion. Inhalation of copper dust has caused hemolysis of red blood cells, deposition of hemofuscin in the liver and pancreas, and injury to the lung cells. Copper chloride and sulfate have been reported as causing irritation of the skin and conjunctivae which may be on an allergic basis. Ingestion of a large quantity of copper sulfate has caused vomiting, gastric pain, dizziness, exhaustion, anemia, cramps, convulsions, shock, coma, and death. Symptoms attributed to damage to the nervous system and kidney have been recorded, jaundice has been observed, and the liver has been enlarged.

The TLV is 1 mg/m³ for copper dust, and 0.2 mg/m³ for copper fumes.

Lead

Lead is a bluish-gray, soft metal. It affects the human CNS. It is a poison by ingestion, and is moderately irritating. It is a carcinogen of the lungs and kidneys, and an experimental teratogen. It is flammable in the form of dust when exposed to heat or flame.

Lead's mode of entry into the body is by inhalation of the dusts, fumes, mists, or vapors; by ingestion of lead compounds trapped in the upper respiratory tract or introduced into the mouth on food, tobacco, fingers, or other objects; and through the skin in the case of organic lead compounds such as tetraethyl lead.

The TLV is 0.15 mg/m³ for inorganic lead dusts and fumes.

Mercury

Mercury is a silvery liquid, metallic element. It is a poison by inhalation, and it is an experimental carcinogen. It affects the gastrointestinal tract and the CNS. After absorption, it circulates in the blood and is stored in the liver, kidneys, spleen, and bone. In humans, mercury is readily absorbed by respiratory tract, intact skin, and the gastrointestinal tract. Organic mercury compounds, such as tetraethyl mercury, seem to have an affinity for lipid-containing organs, resulting in CNS disturbances.

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The TLV is 0.05 mg/m³, but 0.01 mg/m³ for alkyl compounds of mercury.

Zinc

Zinc is a bluish-white, lustrous metal. It is a human skin irritant and it has pulmonary system effects. Pure zinc is relatively non-toxic to humans by inhalation, but health effects result if zinc fumes are oxidized prior to inhalation or are combined with impurities such as cadmium, antimony, arsenic, or lead. The toxicity of zinc compounds is generally low. However, zinc salts such as chromates and arsenates are experimental carcinogens. Zinc oxide when inhaled fresh, can cause a disease known as "brass founders," sweet taste, throat dryness, cough, weakness, generalized aching, fever, nausea, and vomiting. There is no cumulative effect from the inhalation of zinc fumes.

The TLV is 10 mg/m³ for zinc oxide dust.

The revisions presented in this letter should be appended to the HASP dated May 24, 1994.

&T AGRA, Inc.

Douglas A. Harriman

Douglas A. Harriman
Environmental Project Manager
DAH/REC/ljo

Rodolfo E. Coto

Rodolfo E. Coto
Environmental Services Manager

Attachments: None

Distribution: (1) Addressee
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AGRA

Earth & Environmental Group

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NSY LONG BEACH
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HEALTH AND SAFETY PLAN
PROPOSED DRMO RELOCATION LOT X

DATED 24 MAY 1994

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