Department of Toxic Substances Control

Linda S. Adams
Acting Secretary for
Environmental Protection

Deborah O. Raphael, Director
9211 Oakdale Avenue
Chatsworth, California 91311

Edmund G. Brown Jr.
Governor

MEMORANDUM

TO: Laura Rainey, P.G.
Senior Engineering Geologist
Brownfields and Environmental Restoration
Cleanup Program, Office of Geology

FROM: Frank S. Parr, CIH, CSP
Senior Industrial Hygienist
Health and Safety Program (HSP)

DATE: July 20, 2011

SUBJECT: Santa Susan Field Laboratory, Area IV
Revised Site Investigation Health and Safety Plan (HASP)
PCA Code: 22120 Site Number: 300381-48-37

BACKGROUND

The Brownfields and Environmental Restoration Program (BERP), Office of Geology in Cypress requested the HSP review the revised Camp Dresser and McKee (CDM) Site Specific Health and Safety Plan (HASP) for oversight activities associated with the installation of direct push soil borings and the collection of soil samples at the Santa Susan Field Laboratory, Area IV Site (herein referred to as the Site).

The original review request focused on whether the CDM HASP contained the basic HASP elements as specified on Page 11, Section 2.5.4.3. of the Administrative Order of Consent (AOC).

The SSFL comprises approximately 2,700 acres of mountainous terrain ranging from 1,700 to 2,200 feet above sea level. The SSFL is surrounded by Simi Valley to the north, the San Fernando Valley to the east, and Thousand Oaks to the southwest. SSFL is divided into four operational areas (areas I, II, III and IV). A wide variety of research and development activities have historically been conducted at the SSFL.

The proposed scope of work as described in the HASP is as follows: "This project involves observing HydroGeoLogic, Inc. and their subcontractors perform direct push boring and collection of soil samples, as well as conventional collection of surface soil

samples using stainless steel trowels. CDM personnel will collect surface soil samples using a slide hammer and stainless steel or brass sleeves".

DOCUMENT REVIEWED

The HSP reviewed the revised "Health and Safety Plan Form, CDM Health and Safety Program, Santa Susana Field Laboratory, Area IV, Ventura County, California". The document was prepared by CDM. The revised document was dated July 12, 2011, and received by the HSP reviewer on July 18, 2011.

REVIEW CRITERIA

As described above in the Background Section, page 11 of the AOC includes the statement found below (consistent with the criteria found within 8 CCR 5192) regarding the minimum content of Site Specific Health and Safety Plans used on Site.

"A Site-specific Health and Safety Plan shall be prepared in accordance with federal regulations (29 CFR 1910.120) and state regulations (Title 8 CCR Section 5192). This plan should include, at a minimum, the following elements:

(1) Site Background/History/Workplan;
(2) Key Personnel and Responsibilities
(3) Job Hazard Analysis/Summary;
(4) Employee Training;
(5) Personal Protection;
(6) Medical Surveillance;
(7) Air Surveillance;
(8) Site Control;
(9) Decontamination;
(10) Contingency Planning;
(11) Confined Space Operations;
(12) Spill Containment;
(13) Sanitation;
(14) Illumination; and
(15) Other applicable requirements based on the work to be performed."

CONCLUSIONS AND RECOMMENDATIONS

The revised CDM HASP adequately addresses the previously outstanding comment contained in the June 14, 2011 HSP HASP review memorandum.

The HSP is available to discuss this document and related issues. Should questions arise contact Frank Parr at (818) 717-6592.

PEER REVIEW BY: Ryan Kinsella

Ryan Kinsella, M.S.
Associate Industrial Hygienist

Department of Toxic Substances Control

Deborah O. Raphael, Director
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TO: Laura Rainey, P.G.
Senior Engineering Geologist
Brownsfields and Environmental Restoration
Cleanup Program, Office of Geology

FROM: Frank S. Parr, CIH, CSP
Senior Industrial Hygienist
Health and Safety Program (HSP)

DATE: June 28, 2011

SUBJECT: Santa Susana Field Laboratory, Area IV Field Visit
Field Visit Date: June 21, 2011
PCA: 22120 Site Number: 300381-48-37

INTRODUCTION AND BACKGROUND

On June 21, 2011, the HSP (Frank Parr) visited Area IV of the Santa Susana Field Laboratory. The intent of the field visit was to observe field operations associated with EPA contractor HydroGeoLogic (HGL).

The SSFL comprises approximately 2,700 acres of mountainous terrain ranging from 1,700 to 2,200 feet above sea level. The SSFL is surrounded by Simi Valley to the north, the San Fernando Valley to the east, and Thousand Oaks to the southwest. SSFL is divided into four operational areas (areas I, II, III and IV). A wide variety of research and development activities have historically been conducted at the SSFL.

DTSC PERSONNEL PRESENT

Laura Rainey and Todd Wallbom of DTSC were also present on Site June 21, 2011. These individuals were participating in other Site activities and did not accompany the HSP representative.

SITE VISIT

The HSP representative met Laura Rainey at the main entrance of the Site at approximately 0750 hours. Upon entering the Site, Ms. Rainey escorted Mr. Parr to meet John Jones and Stephanie Jennings of DOE to discuss HGL field operations. Mr. Jones and Ms. Jenning raised concerns regarding the use of Tyvek by some of the HGL field personnel. Mr. Parr had no prior knowledge of DOE's interest associated with HGL's use of Tyvek prior to the pre-visit meeting. Upon the conclusion of this meeting, Ms. Rainey escorted Mr. Parr to meet the HGL Site Safety Officer, Rod Collins.

Mr. Parr and Mr. Collins spoke about the intent of the HSP field visit and the HGL field operations which were underway that day. Mr. Collins also introduced Mr. Parr to Dennis Smith with HGL's Corporate Health and Safety program. Mr. Collins also introduced Mr. Parr to Mary Aycock of EPA. Mr. Parr explained to Ms. Aycock the intent of the HSP field visit.

The emphasis of the HSP field visit was to observe HGL's field operations to determine if heat-illness and brush-fire prevention protocols were being effectively implemented by HGL.

Historically, field observations by DTSC representatives had raised concerns about potential heat-related illness issues and risk-factors relating to the initiation of brush-fires associated with field activities.

RESULTS

Mr. Parr and the HGL safety representatives discussed the heat-illness prevention protocols which were being implemented during the field activities. The HGL safety representatives indicated that heat-illness prevention measures were discussed routinely in employee tail-gate safety briefings. Also, employees were provided access to shade, fluids, breaks and were reminded of the signs and symptoms of the various heat-related illnesses. Mr. Collins indicated that employees were encouraged to consume fluids frequently and were observed for the signs and symptoms associated with heat-related illnesses. These measures are consistent with the provisions of the Cal-OSHA Heat Illness Prevention standard (8 CCR 3395). The HSP representative confirmed HGL employee understanding of the protective protocols available to them in regards to heat-related illness prevention via independent conversations with HGL field team members.

The HSP representative discussed the rationale for HGL's selection of PPE for the drilling operations with Mr. Collins. Mr. Collins indicated that the drilling personnel were using Tyvek coveralls primarily to mitigate hazards associated with particulate-type ionizing radiation hazards. Mr. Parr inquired as to whether data obtained to date indicated that particulate-type ionizing radiation hazards were a concern to the HGL drilling personnel. Mr. Collins informed Mr. Parr that to date, data had not indicated that

particulate-type ionizing radiation hazards were a concern. Mr. Parr asked Mr. Collins whether there had been any documented cases of heat-related illness associated with HGL's drilling operations. Mr. Collins informed Mr. Parr there had been no such cases.

Messrs. Collins and Smith informed the HSP representative the brush clearance activities were performed prior to the initiation of gamma scanning, magnetometry and sub-surface Site characterization activities. Furthermore, field staff were advised not to drive through or park on areas of the Site which had not been subject to recent brush clearance. Staff were also reminded not to place recently used power tools or equipment (e.g., "weed-whackers") on surfaces which could potentially ignite (e.g., dry brush and grass, etc.).

The HSP representative observed the following field activities during the June 21, 2011 field visit.

1) Direct-push drilling operations.

2) Magnetometry.

3) Surface gamma scanning.

4) Brush clearance.

HGL personnel participating in the direct-push drilling operations utilized modified level D PPE, including hard hats, Tyvek suits, gloves, safety glasses and hearing protection as needed. The field staff were observed to have access to shade and fluids and confirmed they routinely took breaks and were able to do so if the need arose.

CONCLUSIONS AND RECOMMENDATIONS

The use of personal protective equipment to mitigate occupational safety and health hazards is considered to be the least desirable option available in the hierarchy of controls (e.g., engineering, administrative/work practices, and PPE). This is primarily due to two reasons.

1) The use of PPE typically does not remove the hazard posed to the worker. The PPE serves as a "barrier" between the user and the hazard. Failure of the "barrier" or PPE may result in employee exposure to the hazard.

2) The USE of PPE may pose a risk to the user (e.g., reduced visibility and dexterity, slip, trip and fall hazards and a potential increase in the likelihood of developing a heat-related illness, etc.).

Unfortunately, in many instances, PPE is the only practical method available to mitigate occupational safety and health hazards. Determining the appropriate personal

protective equipment for specific tasks can often present challenges to occupational safety and health professionals. Protecting workers from occupational safety and health hazards via personal protective equipment can be a delicate balance; one requiring an on-going evaluation of the benefits of the PPE in reducing the exposure to the occupational safety and health hazard to the risks posed to workers from utilizing the PPE.

Mr Parr determined that Messrs.. Collins and Smith were well aware of the potential hazards associated with the use of Tyvek suits in relation to the increased potential for the development of heat-related illnesses.

Additional steps which could be taken to reduce the likelihood of developing heat-related illnesses were discussed during the Site visit. These included, shift modification and the use of lighter-weight, more breathable suit materials. Mr. Collins indicated that he would research the efficacy of such suit materials for the sub-surface Site characterization tasks. The uses of cooling vests and portable misting fans have also been demonstrated to have efficacy in reducing the potential for the development of heat-related illnesses.

A benefit of Tyvek suits is their ability to afford protection to the wearer from poison oak and ticks. Both of these biological hazards are present in multiple locations throughout the SSFL Site.

The rationale for HGL's selection of PPE ensembles for specific Site tasks should be clearly communicated to HGL personnel and other interested parties (as deemed necessary by HGL). Once selected, the PPE ensemble should be adhered to consistently by field team members participating in the discrete field task(s).

During the Site visit on June 21, 2011, the HGL health and safety staff demonstrated an awareness of the hazards associated with heat-related illnesses and brush fires. It is very important that the awareness remains at a high level as we move into the hotter portion of summer.

Thank you for the opportunity to participate in the Site visit. Should questions arise, please contact Frank Parr at (818) 717-6592.

Peer Reviewed by: SMS FOR Ryan Kinsella

Ryan Kinsella, M.S.
Associate Industrial Hygienist

Department of Toxic Substances Control

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MEMORANDUM

TO: Laura Rainey, P.G.
Senior Engineering Geologist
Brownfields and Environmental Restoration
Cleanup Program, Office of Geology

FROM: Frank S. Parr, CIH, CSP
Senior Industrial Hygienist
Health and Safety Program (HSP)

DATE: June 14, 2011

SUBJECT: Santa Susan Field Laboratory, Area IV
Revised Site Investigation Health and Safety Plan (HASP)
PCA Code: 22120 Site Number: 300381-48-37

BACKGROUND

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The original review request focused on whether the CDM HASP contained the basic HASP elements as specified on Page 11, Section 2.5.4.3. of the Administrative Order of Consent (AOC).

The SSFL comprises approximately 2,700 acres of mountainous terrain ranging from 1,700 to 2,200 feet above sea level. The SSFL is surrounded by Simi Valley to the north, the San Fernando Valley to the east, and Thousand Oaks to the southwest. SSFL is divided into four operational areas (areas I, II, III and IV). A wide variety of research and development activities have historically been conducted at the SSFL.

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samples using stainless steel trowels. CDM personnel will collect surface soil samples using a slide hammer and stainless steel or brass sleeves".

DOCUMENT REVIEWED

The HSP reviewed the revised "Health and Safety Plan Form, CDM Health and Safety Program, Santa Susana Field Laboratory, Area IV, Ventura County, California". The document was prepared by CDM. The revised document was received by the HSP reviewer on June 13, 2011.

REVIEW CRITERIA

As described above in the Background Section, page 11 of the AOC includes the statement found below (consistent with the criteria found within 8 CCR 5192) regarding the minimum content of Site Specific Health and Safety Plans used on Site.

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(8) Site Control;
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(10) Contingency Planning;
(11) Confined Space Operations;
(12) Spill Containment;
(13) Sanitation;
(14) Illumination; and
(15) Other applicable requirements based on the work to be performed."

CONCLUSIONS AND RECOMMENDATIONS

With the exception of comment #15, the revised CDM HASP adequately addresses the previously outstanding comments contained in the May 31, 2011 HSP HASP review memorandum.

Based upon increasingly hot environmental conditions, the level of protection and the proposed scope of work, the potential for employee exposure to heat-related illness is a concern.

Comment # 15, indicated "The CDM HASP does not include a discussion of heat-related illness monitoring and prevention protocols per the requirements of 8 CCR 3395".

The HSP requests that CDM revise the discussion of heat stress to incorporate or reference the basic requirements of 8 CCR 3395. This includes, but is not limited to the following; 1) Access to water (8 CCR 3395(c), 2) Access to shade (8 CCR 3395(d), 3) Procedures for high heat conditions (8 CCR 3395(e), and 4) Procedures for employee and supervisor training.

With the inclusion of the information requested above, the revised HASP will adequately address all previously outstanding comments contained in the original May 31, 2011 HSP HASP review memorandum.

Future changes in the document should be clearly identified.

The HSP is available to discuss this document and related issues. Should questions arise contact Frank Parr at (818) 717-6592.

PEER REVIEW BY:

Nannette Oseas, M.S., CIH
Senior Industrial Hygienist

Department of Toxic Substances Control

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Cleanup Program, Office of Geology

FROM: Frank S. Parr, CIH, CSP
Senior Industrial Hygienist
Health and Safety Program (HSP)

DATE: May 31, 2011

SUBJECT: Santa Susan Field Laboratory, Area IV
Site Investigation Health and Safety Plan (HASP)
PCA Code: 22120 Site Number: 300381-48-37

BACKGROUND

The Brownfields and Environmental Restoration Program (BERP), Office of Geology in Cypress requested the HSP review the Camp Dresser and McKee (CDM) Site Specific Health and Safety Plan (HASP) for oversight activities associated with the installation of direct push soil borings and the collection of soil samples at the Santa Susan Field Laboratory, Area IV Site (herein referred to as the Site).

The review request focused on whether the CDM HASP contained the basic HASP elements as specified on Page 11, Section 2.5.4.3. of the Administrative Order of Consent (AOC).

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samples using stainless steel trowels. CDM personnel will collect surface soil samples using a slide hammer and stainless steel or brass sleeves".

DOCUMENT REVIEWED

The HSP reviewed the "Health and Safety Plan Form, CDM Health and Safety Program, Santa Susana Field Laboratory, Area IV, Ventura County, California". The document was prepared by CDM. The document was received by the HSP reviewer on May 16, 2011.

REVIEW CRITERIA

As described above in the Background Section, Page 11 of the AOC includes the statement found below (consistent with the criteria found within 8 CCR 5192) regarding the minimum content of Site Specific Health and Safety Plans used on Site.

"A Site-specific Health and Safety Plan shall be prepared in accordance with federal regulations (29 CFR 1910.120) and state regulations (Title 8 CCR Section 5192). This plan should include, at a minimum, the following elements:

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(14) Illumination; and
(15) Other applicable requirements based on the work to be performed."

SPECIFIC COMMENTS

The following comments pertain to specific HASP elements described above which were not addressed within the HASP, or which required additional information and/or clarification. They are described using the same numbering sequence described in the AOC.

1) Site Background/History/Workplan. The CDM HASP does not specifically reference the Workplan as described in 8 CCR 5192(b)(3). The Workplan can

be incorporated by reference into the HASP, or, CDM can incorporate the specific elements specified within the Workplan into the HASP.

4) Employee Training. Page 6 of the CDM HASP indicates that no specialized training is required. The CDM HASP does not include a discussion of the training requirements as specified by 8 CCR 5192 (b)(4)(B)(2) and 8 CCR 5192 (e).

6) Medical Surveillance. Page 6 of the CDM HASP indicates that no specialized medical surveillance requirements are needed. The CDM HASP does not include a discussion of the medical surveillance requirements as specified by 8 CCR (b)(4)(B)(4) and 8 CCR 5192(f).

11) Confined Space Operations. A negative declaration must be included in the HASP indicating the confined space operations are not included in the anticipated scope. If confined space operations are anticipated, these activities must be conducted in accordance with 8 CCR 5157.

13) Sanitation. Please include a description of sanitation protocols per the requirements of 8 CCR 5192(n).

14) Illumination. If all activities described within the scope of work will be conducted during daylight hours and not within any structures located on Site, please state as such. If this is not the case, please describe how the minimum illumination intensities referenced in 8 CCR 5192(m) shall be quantified and maintained.

15) Other applicable requirements based on the work to be performed.

The CDM HASP does not include a discussion of heat-related illness monitoring and prevention protocols per the requirements of 8 CCR 3395.

The CDM HASP does not include a discussion of the anticipation, recognition, evaluation and control of biological hazards at the SSFL.

The CDM HASP does not address control measures to minimize the potential for the initiation of brush fires associated with project vehicles and equipment.

CONCLUSIONS AND RECOMMENDATIONS

The CDM HASP does not include or reference the minimum elements as described in section 2.5.4.3 of the AOC. The areas where the HSP has requested additional information and/or clarification must be corrected or clarified and resubmitted for further review.

Future changes in the document should be clearly identified.

The HSP is available to discuss this document and related issues. Should questions arise contact Frank Parr at (818) 717-6592.

PEER REVIEW BY:

Nanhette Oseas, M.S., CIH
Senior Industrial Hygienist