



Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control



Miriam Barcellona Ingenito
Acting Director
700 Heinz Avenue
Berkeley, California 94710-2721

Edmund G. Brown Jr.
Governor

October 22, 2014

Mr. Greg Haet
EH&S Associate Director, Environmental Protection
Office of Environment, Health & Safety
University of California, Berkeley
University Hall, 3rd Floor, #1150
Berkeley, California 94720

Dear Mr. Haet:

The Department of Toxic Substances Control (DTSC) received the *Draft Phase IV Field Sampling Plan Addendum 1* (Addendum) for the University of California (UC), Berkeley, Richmond Bay Campus, Former Richmond Field Station Site, located in Richmond, California. The October 03, 2014 Addendum was prepared by Tetra Tech, Inc. and transmits to DTSC as an Attachment the September 30, 2014 document titled *Exploratory Excavation Work Plan, Exploratory Investigation for Magnetic Anomaly Source in Bulb* (Work Plan). The Work Plan, prepared by Cabrera Services Inc. for UC, is the subject of our review. Comments and recommendations based on our review are provided as attachments to this letter. Also attached are comments and recommendations on the Work Plan prepared by DTSC's industrial hygiene branch, and human and ecological risk branch.

As discussed with UC personnel, please prepare a response-to-comments type of reply rather than immediately amending the Work Plan. If you have any questions, please contact Lynn Nakashima at lynn.nakashima@dtsc.ca.gov or (510) 540-3839.

Sincerely,

Lynn Nakashima, Project Manager
Senior Hazardous Substances Scientist
Brownfields and Environmental
Restoration Program
Berkeley Office - Cleanup Operations

Mark Vest, P.G.
Senior Engineering Geologist
Brownfields and Environmental
Restoration Program
Sacramento Office - Geologic Services

Enclosures

cc: next page

Mr. Greg Haet
October 22, 2014
Page 2

cc: Karl Hans
University of California, Berkeley
Environmental Health & Safety
317 University Hall, No 1150
Berkeley, California 94720

Jason Brodersen
Tetra Tech EM Inc.
1999 Harrison Street, Suite 500
Oakland, CA 94612

J. Michael Eichelberger, Ph.D.
Human and Ecological Risk Office
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Kimi Klein, Ph.D.
Human and Ecological Risk Office
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710

Coby A. Graham
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710

Attachment –

Department of Toxic Substances Control Comments to 09/30/2014 UC Phase IV Work Plan, Addendum I

Exploratory Excavation Work Plan

1. Page 2-4, Section 2.3.2 Geophysical Survey: Clarify whether the data generated by this geophysical survey will be logged and reported in the investigation report.
2. Page 2-5, Section 2.4 Exploratory Excavation Procedures:

It is proposed in the plan that a single excavation should be completed, centered on the strongest magnetic anomaly. As illustrated below, the strongest anomaly measured by the magnetometer is not expected to be directly above the center of the metallic source but rather off-set to the south by some distance. Accordingly, the excavation must include the area north of the maximum anomaly. Figure 1, illustrating the anomaly and surrounding area, is attached for your reference.

Rather than opening a 10 ft by 10 ft excavation, we recommend excavating three trenches extending across the anomaly as identified by the highest magnetometer readings. The trenches should traverse the anomaly in directions roughly perpendicular to the northwest-southeast anomaly trend and extend beyond the illustrated anomaly farther to the north or northeasterly directions than to south or southwesterly directions. Each trench can be backfilled before starting the next trench minimizing the amount of open excavation and associated stockpiled materials. Recommended trench locations are illustrated on the attached Figure 2.

Figure - Diagram of Magnetic Anomaly over a Burial Trench¹

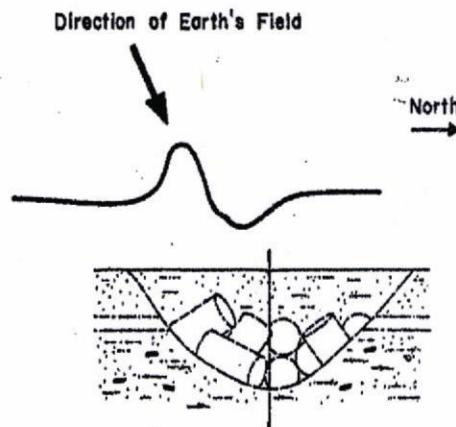


Figure 102. Diagram of magnetic anomaly over burial trench. Note that the peak anomaly may not necessarily lie over the center of the trench due to the angle of the earth's field.

¹ Source: Benson R., R.A. Glaccum, and M.R. Noel 1982. Geophysical Techniques for Sensing Buried Waste and Waste Migration. National Ground Water Association. 236 pp.

3. As per requirements in the California Business and Professions Code (Sections 6735 and 7835), the documents should be signed and/or stamped by a California registered civil engineer and/or professional geologist indicating their responsibility for engineering and/or geologic content of the documents.
4. Amend the references to the DTSC confirmation magnetometer survey to indicate that the survey has been performed and the anomaly location is confirmed. Two figures that are based on the survey are attached to this letter.
5. Page 2-8, Section 2.6 Collection of Soil and Drum Samples: State the type of sample container that will be used for suspected radiologic samples or refer to the relevant section of the document that includes this discussion.
6. Page 2-9, Site Restoration and Demobilization: Site restoration and erosion controls will need to be conducted as required by the site's Storm Water Pollution Prevention Plan (SWPPP).
7. Page 3-2, Section 3.3 Spill Prevention and Control Measures: DTSC recommends that California Office of Emergency Services *California Hazardous Materials Spill/Release Notification Guidance*, February 2014 be consulted and additional notification requirements be added to the plan. For example, the Local Unified Program Agency and other state and federal agencies need to be included.
8. Page 3-3, Section 3.7 Archeological Monitoring: If potential archeological resources are observed in the excavation, in addition to suspending work, a qualified archeologist needs to be called to evaluate the find and make recommendations.

Appendix B, Sampling and Analysis Plan

1. Page 2-4, Section 2.4.3.7 Sample Packaging and Shipping: Clarify whether there are any specific requirements for shipping of radioactive samples.
2. Page 2-4, Section 2.4.4 Decontamination of Sampling Equipment: Include analysis of one equipment blank per day to assess decontamination procedures of sampling equipment.
3. Operating Procedure for Subsurface Soil Sampling OP-352, Revision 3.0, Page 7 of 11, Section 7.2.4: Revise this section so that collection of soil samples for VOC analysis follows SW-846 Method 5035 to limit the potential for volatilization of VOCs.
4. Operating Procedure for Field Activity Documentation, OP-359, Revision 1.0, Attachment A, Cabrera Daily Report: Please ensure that any shifts in wind direction throughout the day are noted on the OP 359, Field Activity Documentation Form.

Appendix C, Air Monitoring Plan

1. Table 1. Work Area Air Action Levels: Please explain the basis of the VOC action level of 5.0 parts per million.

Comments and Recommendations by the DTSC Human and Ecological Risk Branch

1. Attachment A: Perimeter Air Monitoring Plan, Section 2.1 Real-time Perimeter Dust Monitoring. Data measuring real-time air monitoring of dust will be downloaded daily onto a computer, and the data will be posted on the Richmond Bay Campus web-site within one week. If it is possible, these data should be posted daily, rather than 'within' a week, in order to proactively address community concerns about dust levels and adverse health effects.
2. Attachment A: Perimeter Air Monitoring Plan, Section 2.1 Real-time Perimeter Dust Monitoring. At the top of Page 2, a sentence should be added that two Personal Data Rams (PDRs) will be deployed at the perimeter, as stated in the Air Monitoring Plan.
3. The Air Monitoring Plan states that alpha and beta radiation will be monitored at the perimeter (Table 2 – Perimeter Air Action Levels). However, there is no mention of the instruments and method to be used to perform this monitoring in the Perimeter Air Monitoring Plan. Please explain or revise the perimeter air monitoring plan.
4. Hydrogen sulfide will be measured in the work area but not at the perimeter. Explain the rationale for not measuring this odiferous chemical at the perimeter.



Location of background readings

- Monitoring Well
- Flagged Anomalies**
- ★ primary
- 🚩 secondary
- Survey Grid**
- Reading (Gammas)**
- 48140 - 48317
- 48318 - 48493
- 48494 - 48670
- 48671 - 48846
- 48847 - 49023
- 49024 - 49199
- 49200 - 49376

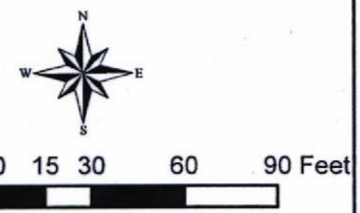


Figure 1
Richmond Field Station
Magnetometer Survey
September 30, 2014
1" = 60' scale



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aergrid, IGN, IGP, swisstopo, and the GIS User Community

Coordinate System: NAD 1983 2011 StatePlane California III FIPS 0403 Ft US||Projection: Lambert Conformal Conic||Datum: NAD 1983 2011

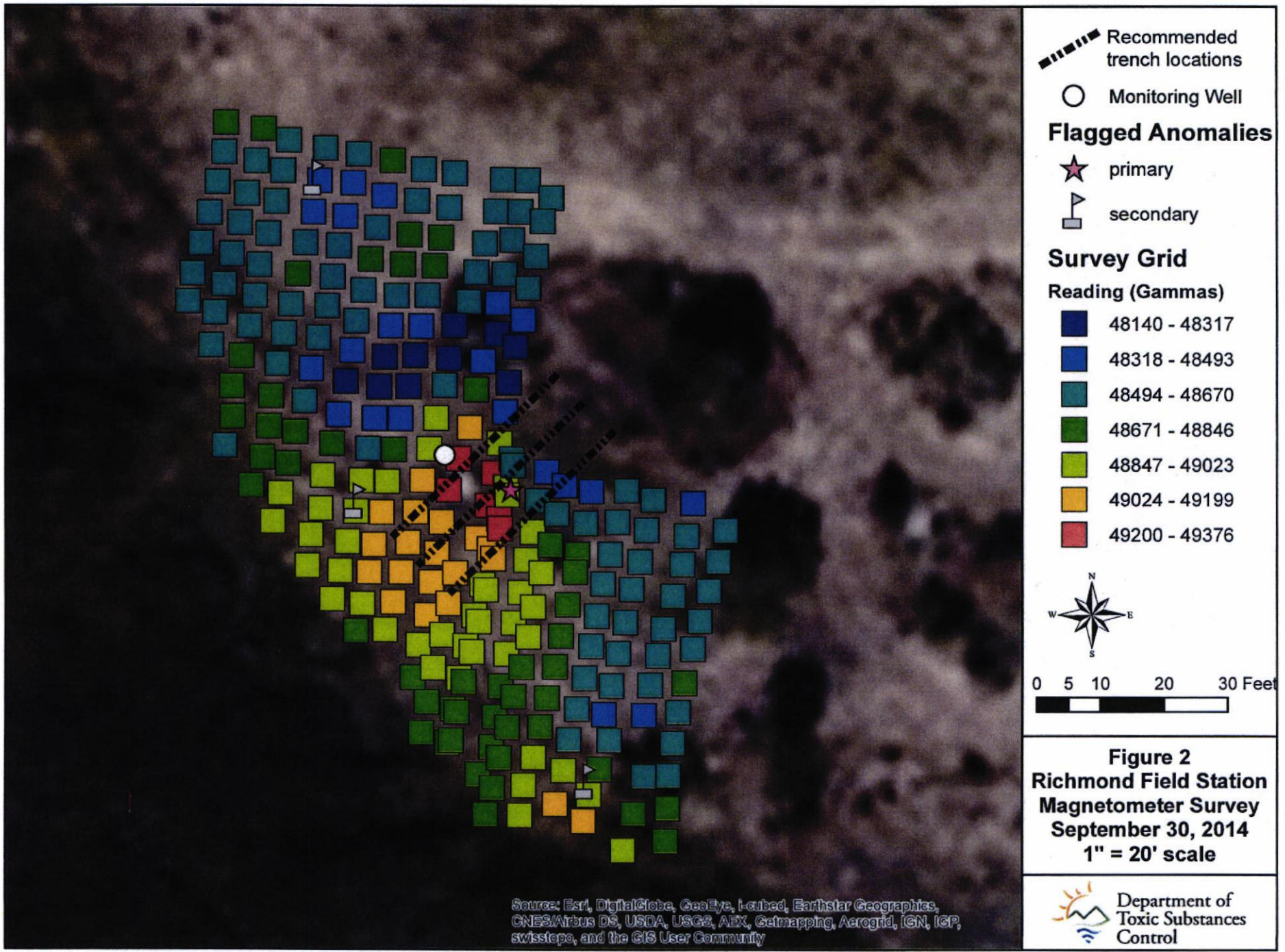


Figure 2
Richmond Field Station
Magnetometer Survey
September 30, 2014
1" = 20' scale

 Department of
 Toxic Substances
 Control

Source: Esri, DigitalGlobe, GeoEye, I-cubed, Earthstar Geographics,
 CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP,
 swisstopo, and the GIS User Community

Coordinate System: NAD 1983 2011 StatePlane California III FIPS 0403 Ft US|Projection: Lambert Conformal Conic|Datum: NAD 1983 2011



Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control

Miriam Ingenito, Acting Director
700 Heinz Avenue, Suite 200
Berkeley, California 94710



Edmund G. Brown Jr.
Governor

DRAFT M E M O R A N D U M

TO: Lynn Nakashima
Senior Environmental Scientist
Brownfields and Environmental Restoration - Berkeley

FROM: Coby Graham
Associate Industrial Hygienist
Health and Safety Program (HSP) - Berkeley

DATE: October 20, 2014

SUBJECT: UC Berkeley, Richmond Field Station
Richmond, California
Air Monitoring Plan; Health and Safety Plan Review
PCA Code: 11018 Site Number: 201605-00

BACKGROUND

The Brownfields and Environmental Restoration Program (BERP), in Berkeley requested the HSP review the Health and Safety Plan addressing the exploratory excavation to investigate a sub-surface metal anomaly at the UC Richmond Field Station (Site), located in Richmond, California.

The Site is "located at 1301 South 46th Street, Richmond, California, along the southeast shoreline of the city of Richmond on the San Francisco Bay to the northwest of Point Isabel (see Figure 1) consisting of the Former Richmond Field Station (RFS) and the Regatta Property west of the Former RFS. The Former RFS is a 170 acre property consisting of 96 acres of upland areas that includes a remnant coastal terrace prairie, and 74 acres of tidal salt marsh, mudflats and transitional habitat." [EEWP § 1.0 (p. 1-1).] The Bulb is within the transition area of the Site and consists of a rounded Bay-ward extension. [See UC Berkeley, "Radioactive Materials Investigation: Historic Use Assessment Transition Area 'Bulb' Alleged Buried Drum Area" (May 2014) p. 4; SHSP § 3.1.3, p. 3-2.]

In early 2005, DTSC was informed that a former RFS employee claimed to have been instructed to transport drums of radioactive rocks from Lawrence Berkeley National Labs and the UC Berkeley campus to the RFS for burial in an area approximate to the

Bulb. The purpose of this exploratory excavation is to determine the source of a magnetic anomaly in the Bulb identified as a possible drum burial location. [See EEWP § 1.2, p. 1-3.]

Suspected contaminants of concern at the Site include volatile organic compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Hydrogen sulfide, polychlorinated biphenyls (PCBs), and potentially radioactive materials. [See SHSP § 3.1, pp. 3-2 to 3-3.]

DOCUMENTS REVIEWED

The HSP reviewed the "Air Monitoring Plan" and the "Site Specific Health and Safety Plan" for the "Exploratory Investigation for Magnetic Anomaly Source in Bulb". The HSP also consulted the "Exploratory Excavation Work Plan" and the "Sampling and Analysis Plan" to assist in its review of these plans. These documents were prepared by Cabrera Services, Inc.

Additionally, the HSP referred to the "Radioactive Materials Investigation: Historic Use Assessment Transition Area 'Bulb' Alleged Buried Drum Area" as prepared by UC-Berkeley to assist in its review.

These documents were received by the HSP reviewer on October 10, 2014.

GENERAL COMMENTS

The HASP is required to be a stand-alone document. The minimum required information necessary to ensure the health and safety of personnel on the "Site" must be contained within the HASP. The HASP may refer to other documents for community safety and health information, such as an air monitoring plan, which is often located in the work plan for a Site.

The Department of Toxic Substances Control (DTSC) has reviewed the HASP for conformance with Title 8, California Code of Regulations (T8 CCR), section 5192: "Health and Safety for Hazardous Waste Operations and Emergency Response"; and T8 CCR, subchapter 4 "Construction Safety Orders." The requirements of 29 CFR § 1910.120, T22 CCR, the California Health and Safety Code, as well as DTSC Policies and Procedures may also be considered in the DTSC review. Some of the general areas of concern include field safety issues such as electrical hazards (including overhead and buried electrical lines); confined spaces; excavations; controlling hazards through engineering, administrative, work practice controls and personal protective equipment; slip trip and fall hazards; lighting issues; heavy equipment safety; heat and cold stress; noise; radiation; and chemical hazards. Please note that in addition to the requirements of these citations, the employer is responsible for the implementation of an effective Injury and Illness Prevention Program which is required by T8 CCR, sections 1509 and 3203. The requirements of those sections have not been included in this review.

The HASP should apply to all contractors, sub-contractors, and regulatory personnel on-site. In the event that the HASP does not cover a contractor or sub-contractor, they must submit their own HASP to the DTSC for review. If the scope of work changes significantly, (an unanticipated chemical, physical, or biological hazard is discovered or introduced to the Site), then the new hazard must be addressed in an addendum to the HASP and submitted to the DTSC for review.

The DTSC review of the HASP does not constitute a guarantee that all potential hazards have been anticipated, recognized, and addressed, or that the HASP will be properly and safely implemented. The DTSC is unable to foresee every health and safety hazard in the work-place by reviewing the HASP. Effective implementation and regulatory compliance are the employer's responsibilities. Continuous surveillance of the Site and creation of an effective health and safety program by the employer will reduce work place injuries and liability.

The HASP was reviewed for scientific content and regulatory compliance. Minor grammatical or typographical errors that do not affect interpretation have not been noted; however, these errors, if any, should be corrected in future versions of the document.

An industrial hygienist from the DTSC may perform a field audit in order to confirm the implementation of the provisions and specifications presented in the HASP. The DTSC review of the HASP and field audit does not guarantee that the HASP will be properly implemented.

SPECIFIC COMMENTS

Please refer to the Cal/OSHA Pocket Guide for the Construction Industry (located at http://www.dir.ca.gov/dosh/dosh_publications/constguideonline.pdf) for helpful information pertaining to California's construction safety orders.

Air Monitoring Plan

2.0 Air Monitoring Strategy (p. 2-1).

Please include information from the SHSP in the air monitoring plan regarding oxygen and LEL monitoring. The air monitoring plan does not include monitoring provisions for oxygen and the LEL even though these concerns are addressed in the SHSP. [See SHSP § 5.6.3, Table 5-7, pp. 5-14 to 5-16.]

2.1 Laboratories and Testing Services, "Table 1. Work Area Air Action Levels" (pp. 2-1 to 2-2). [See also SHSP § 5.6.3, Table 5-7, pp. 5-14 to 5-16.]

Table 1 presents action levels based upon occupational exposure limits, and applies to both personal (breathing zone) and work area measurements and samples. Please

provide the corresponding occupational exposure limits used to derive the action levels; DTSC typically sets the action level at 10 to 50 % of the occupational limit.

A table (DTSC Table A) has been provided with the applicable occupational exposure limits for this site based on the information provided.

DTSC Table A. Occupational Exposure Limits

Substance	CAS No.	Regulatory Limits		Recommended Limits	
		OSHA PEL	Cal/OSHA PEL	NIOSH REL	ACGIH 2014 TLV
		8-hour TWA (ST) STEL (C) Ceiling	8-hour TWA (ST) STEL (C) Ceiling	Up to 10-hour TWA (ST) STEL (C) Ceiling	8-hour TWA (ST) STEL (C) Ceiling
Benzene	71-43-2	1 ppm (ST) 5 ppm See 1910.1028	1 ppm (ST) 5 ppm See Section 5218	Ca 0.1 ppm (ST) 1 ppm See Appendix A	0.5 ppm (ST) 2.5 ppm
Coal tar pitch volatiles (benzene soluble fraction) (VOC)	65966-93-2	0.2 mg/m ³	0.2 mg/m ³	Ca 0.1 mg/m ³ (cyclohexane Extractable fraction) See Appendix A See Appendix C	0.2 mg/m ³ (as benzene soluble aerosol)
Chlorodiphenyl (42% Chlorine) (PCB)	53469-21-9	1 mg/m ³	1 mg/m ³	Ca 0.001 mg/m ³ See Appendix A	1 mg/m ³
Chlorodiphenyl (54% Chlorine) (PCB)	11097-69-1	0.5 mg/m ³	0.5 mg/m ³	Ca 0.001 mg/m ³ See Appendix A	0.5 mg/m ³
Hydrogen sulfide	7783-06-4	(C) 20 ppm	10 ppm (ST) 15 ppm (C) 50 ppm	(C) 10 ppm [10-min]	1 ppm (ST) 5 ppm
Particulates, Not Otherwise Regulated				See Appendix D	
- Total Dust		15 mg/m ³	10 mg/m ³		10 mg/m ³
- Respirable Fraction		5 mg/m ³	5 mg/m ³		3 mg/m ³
Radiation		1.25 Rems per calendar quarter	5 mRem/year	2 mRem/hr	50 mSv/year (5 Rem/year)
- α- & β-particles (airborne exposure)		2E-13 μCi/mL [DAC] (10 CFR 20, Appendix B, Table 1)	2E-13 μCi/mL [DAC] (10 CFR 20, Appendix B, Table 1)		
- γ-rays (airborne exposure)		1E-10 μCi/mL [DAC] (10 CFR 20, Appendix B, Table 1)	1E-10 μCi/mL [DAC] (10 CFR 20, Appendix B, Table 1)		

Occupational Exposure Limits from OSHA Annotated Table Z-1 (29 CFR 1910.1000), 29 CFR 1910.1096, 29 CFR 1926.53, 8 CCR § 5155 (Table AC-1), 8 CCR § 5076 (adopting 17 CCR § 30253 (incorporating 10 CFR §§ 20.1001 through 2402 and Appendices A through G with exceptions)), NIOSH's Pocket Guide to Chemical Hazards, NIOSH's "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities" (NIOSH 85-115), and ACGIH's 2014 TLVs and BEIs.

Action Level for VOCs should be based upon the OEL for Coal Tar Pitch Volatiles. Typically, if the VOC concentration exceeds the action level for Coal Tar Pitch Volatiles,

then the appropriate step would be to screen for benzene to determine if exposure controls should be implemented or more protective PPE should be donned. Please note that NIOSH recommends SCBA, rather than APR, as respiratory PPE for benzene concentrations above the NIOSH REL.

2.1 Laboratories and Testing Services, "Table 2. Perimeter Air Action Levels" (p. 2-2). [See also SHSP § 5.6.3, Table 5-7, pp. 5-14 to 5-16.]

OSHA and NIOSH regulations should not be used to derive public exposure limits.

According to the Bay Area Air Quality Management District, "California's air quality standards are the most stringent and health-protective standards in the nation." Because this site is located in the Bay Area which has a Nonattainment designation for PM₁₀ – 24-hour with respect to the California Standard of 50 µg/m³, this concentration should be used to determine the action level for particulate matter at the site perimeter. [See 17 CCR § 70200.] In addition to the California Standard for PM₁₀ – 24-hour, fugitive dust emissions from the site should also comply with the requirements found in Bay Area Air Quality Management District's ["BAAQMD"] Regulation 6, Rule 1 for Particulate Matter. Specifically, this rule restricts the visible emission of particulate matter.

Furthermore, the BAAQMD's Manual of Procedures, Volume VI, contains specific air monitoring procedures for different constituents – including volatile compounds, such as hydrogen sulfide, and particulates, such as lead – and contains procedures for instrumentation and siting which should be used for ground level monitoring for particulate matter at this site. Moreover, Appendix A of this volume of the Manual of Procedures includes information for meteorological monitoring.

Moreover, the air monitoring plan should include hydrogen sulfide in Table 2. The California Air Quality Standard for hydrogen sulfide is 0.03 ppm for 1-hour. Additionally, the OEHHA Reference Exposure Levels for hydrogen sulfide are 10 mg/m³ for chronic exposure and 42 mg/m³ for acute (1-hour) exposures.

A toxicologist familiar with this site may need to be consulted on the plan's action level to prepare a site-specific action level for PCBs to determine if the California PM₁₀ – 24-hour Nonattainment Standard is protective of public health.

2.2 Air Monitoring Design (pp. 2-2 to 2-3).

Please refer to the recommendations in the BAAQMD's Manual of Procedures, Volume VI, Air Monitoring Procedures, for siting procedures and meteorological guidance. [Located at <http://www.baaqmd.gov> (Last Viewed on October 20, 2014).] Please, make any changes necessary to conform to these procedures, if applicable.

[See also EEWP § 3.1 Erosion Control Measurements, p. 3-1.]

The erosion control measurements found in the work plan should be related to the onsite air monitoring plan regarding dust measurements at the work zone and the perimeter with appropriate action levels to protect the public, including the health and safety of workers and the community. If instrument readings for dust control at the site exceed their respective action levels, then erosion control measures would need to be examined, increased, and/or implemented.

Health and Safety Plan

Executive Summary (p. iii).

Action Level for VOCs should be based upon the OEL for Coal Tar Pitch Volatiles. Typically, if the VOC concentration exceeds the action level for Coal Tar Pitch Volatiles, then the appropriate step would be to screen for benzene to determine if more protective PPE should be donned.

The action level for hydrogen sulfide should be set at 50% of the OEL to ensure that workers are protected against unnecessary exposures to hydrogen sulfide above the TLV.

Please explain how airborne PCB concentrations will be determined based on field measurements. Section 5.6, Chemical Exposure Monitoring, does not include information on field measurements for PCBs.

Please include information about gamma radiation in the summary table.

2.4 Site Radiation Safety Lead (pp. 2-2 to 2-3).

Please include information pertaining to the Authority and Qualifications of the Site Radiation Safety Lead ["SRSL"].

2.5 Employees (p. 2-3). [See also SHSP § 6.1 HAZWOPER Qualifications, p. 6-1.]

Please include information pertaining to the Qualifications of different employees; e.g., 40-hour HAZWOPER with current refresher courses, on-the-job training, etc....

2.7 Subcontractors (p. 2-4). [See also SHSP § 6.1 HAZWOPER Qualifications, p. 6-1.]

Please indicate any minimum qualifications.

2.8 Visitors (pp. 2-4 to 2-5).

Will HAZWOPER training be required for site visitors? If so, please indicate any minimum qualifications and areas where such training would be required.

3.1.3 Investigation Area Description (pp. 3-2 to 3-3).

Please include the maximum soil and groundwater concentrations for the Contaminants of Concern.

Given the maximum expected soil concentration of PCBs for the work area, the action level for worker protection based on the potential airborne concentration of PCB absorbed to dust can be calculated using the following equation:

$$[(\text{OEL in air in mg/m}^3) \times (10^6 \text{ mg/kg})] / [(\text{Conc. in soil in mg/kg}) \times (\text{Safety Factor})]$$

Assume the safety factor is two (2).

3.2 Scope of Work (p. 3-3). [See also EEWP § 2.6, pp. 2-8 to 2-9.]

Per the requirements of 8 CCR § 5192(b)(4)(B), please include an activity hazard analysis for the collection of soil and drum sampling. These two activities are found in the work plan, yet no hazard analysis was included in the Site-Specific Health and Safety Plan.

3.2.1.2 Site Preparation (pp. 3-3 to 3-4). [See also EEWP § 2.2.6 Waste Management, p. 2-3; SAP § 2.4.1 Sampling Locations, p. 2-2.]

Please incorporate any applicable requirements found in 8 CCR § 5192(j) regarding handling drums, as they may apply to this work plan. In addition, please include an activity hazard analysis for drum handling.

The work plan states that any intact drums placed into secondary containment using a B-25 waste container "will be sampled [within 30 days] using all health and safety precautions (placed into a HEPA filtered tented containment or equivalent protection and opened by staff in Level A PPE)."[SAP § 2.4.1, p. 2-2.] Is there a Cabrera operating procedure with "all health and safety precautions" for sampling drums with potential radioactive materials inside secondary containment? If so, please include this document with the work plan and/or health and safety plan.

[See also EEWP § 2.2 Mobilization and Site Preparation, p. 2-1.]

Is an excavation or open-pit permit required from the city?

Excavation work and site preparation activities should follow the general requirements for Excavations found in Article 6 of the California Code of Regulations. [See 8 CCR Article 6, §§ 1539-1541.1 and appendices.]

According to the almanac for Berkeley, California, the expected times for sunrise for October 29 and 30 are 7:30 AM and 7:31 AM, respectively. Accordingly, regular site work hours for the activities in this work plan should be from 7:30 AM to 5:00 PM

because "activities will only be conducted during daylight hours." Any work occurring prior to 7:30 would require illumination.

3.2.1.4 Excavation of Soils (p. 3-4).

[See also EEWP § 2.2.5 Stockpiling Area, p. 2-2.]

Although employee's will not be working in the trench, stockpiles and equipment should be placed and kept "at least 2 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary." [See 8 CCR 1541(j)(2).]

[See also EEWP § 2.3.3 Air Monitoring, p. 2-4.]

Will instruments be capable of data-logging? If instruments are capable of data-logging, then this feature should be used and the information from this event provided to the department in a reasonable time after this activity has been completed.

4.3.1 Slips, Trips, Falls, and Protruding Objects (pp. 4-2 to 4-3). [See also Cabrera, OP-590, Elevated Work Platforms.]

According to Cabrera's operating procedure, OP-590, fall protection shall be worn when workers are in the aerial lift. [See Cabrera OP-585 § 7.1 (p. 6).] Will a safety harness be required for any workers conducting field activities near the excavation but not within the aerial lift? If so, at what distance to the open excavation would a worker be required to wear a safety harness?

4.3.7 Excavations and Trenches (p. 4-5). [See also Cabrera OP-583, Excavation and Trenching.]

Please ensure the requirements of 8 CCR §§ 1539 to 1541.1 are met, as they may apply to this work plan. For example, section 1541 requires employees involved in the excavation and exposed to excavation operation hazards to "be trained in the excavator notification and excavation practices required by this section and Government Code Sections 4216 through 4216.9." [8 CCR § 1541(b)(1)(D).]

4.3.10 Working at Heights (pp. 4-5 to 4-6). [See also Cabrera OP-585, Fall Protection.]

Please refer to 8 CCR § 1541(l) for California specific requirements for fall protection at excavations. How close will workers be to the edge or sides of the excavation? At what distance to the excavation's unprotected sides and edges would fall protection be utilized? Will an adequate physical barrier be provided to protect workers working near the excavation's edge?

4.3.11 Dust and Odor Control (p. 4-6).

Will hydrogen sulfide from the excavation be encountered in concentrations that would require odor control? Generally, a human nose can detect hydrogen sulfide in the air at very low concentrations. [See SHSP § 5.1.2, p. 5-2 (“The odor threshold is 0.008 ppm.”).]

4.4.3 Poisonous Plants (pp. 4-8 to 4-9).

Poison Ivy and Giant Hogweed have not been reported at this site.

4.4.4 Insects (p. 4-9).

Lyme disease infected Western Black-Legged ticks have been found in Contra Costa county. [See California Department of Public Health, “Testing Results for *Borrelia burgdorferi* (Lyme Disease Agent) From Western Black-Legged Ticks (*Ixodes pacificus*)” (Updated through 2009) pp. 7-8.]

Black widow spiders are located throughout California. Their venom is a systemic venom that can cause various symptoms including severe muscle pain and cramps, weakness, sweating, headache, itching, nausea, difficulty breathing and high blood pressure. Black widow spiders generally prefer dark, quiet places, such as well boxes, electrical boxes, and storage sheds.

5.2.2 Radiation Surveys and Monitoring (pp. 5-5 to 5-7) and 5.3 Personnel Radiological Monitoring (p. 5-9). [See also EEWP § 2.4 Exploratory Excavation Procedures, p. 2-5; SHSP § 5.6.3, Table 5-7, pp. 5-14 to 5-16.]

Please include the information pertaining to radiological surveys found in section 2.4 of the EEWP into the SHSP by either incorporation into the text or reference/citation to the work plan. Specifically, the language pertaining to radiological surveys and work stoppages should be included into the SHSP.

Will dose rates be collected and monitored both at the surface at depth of the excavation and at the ground surface – or only in areas where employees are working? If the dose rate exceeds 50 mR/hr above background, at which location would this reading instigate a work stoppage, sampling, and backfilling the excavation? [See EEWP § 2.4, p. 2-5.] Should this metric also be incorporated into the SHSP?

5.6.3 Monitoring Procedures, Table 5-7: Work Zone Monitoring Procedures and Action Levels (pp. 5-14 to 5-16).

Please refer to previous comments on the Air Monitoring Plan with respect to the occupational exposure limits and the action level.

8.1 Personal Protective Equipment (p. 8-1). [See also AMP § 1.0 Introduction (p. 1-1).]

Cal/OSHA requires foot protection that meets the requirements of ASTM F 2412-05 and ASTM F 2413-05 for safety footwear purchased after January 26, 2007. For footwear purchased before January 26, 2007, protective footwear must meet the above standards or ANSI Z41-1999. [See 8 CCR § 3385.]

9.1 Emergency Action Plan (p. 9-1).

Please refer to 8 CCR § 5192(l) for the emergency response requirements at an uncontrolled hazardous waste site. Please make any necessary changes so that the Emergency Action Plan conforms to these requirements.

Please note that “[e]mployers who will evacuate their employees from the danger area when an emergency occurs, and who do not permit any of their employees to assist in handling the emergency, are exempt from the requirements of this subsection if they provide an emergency action plan complying with 8 CCR 3220 of the General Industry Safety Orders.” [8 CCR §5192(l)(1)(B).]

CONCLUSIONS AND RECOMMENDATIONS

The submitted HASP is very thorough and well written; it also contains valuable information relating to occupational safety and health, as well as community health and safety. However, the areas where the HSP has requested additional information and/or clarification should 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 Coby Graham at (510) 540-3934.

PEER REVIEW BY: _____
Ryan Kinsella, MS, REHS, CIH
Senior Industrial Hygienist

Cal/OSHA requires foot protection that meets the requirements of ASTM F 2412-05 and ASTM F 2413-05 for safety footwear purchased after January 26, 2007. For footwear purchased before January 26, 2007, protective footwear must meet the above standards or ANSI Z41-1999. [See 8 CCR § 3385.]

9.1 Emergency Action Plan (p. 9-1).

Please refer to 8 CCR § 5192(l) for the emergency response requirements at an uncontrolled hazardous waste site. Please make any necessary changes so that the Emergency Action Plan conforms to these requirements.

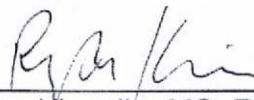
Please note that “[e]mployers who will evacuate their employees from the danger area when an emergency occurs, and who do not permit any of their employees to assist in handling the emergency, are exempt from the requirements of this subsection if they provide an emergency action plan complying with 8 CCR 3220 of the General Industry Safety Orders.” [8 CCR §5192(l)(1)(B).]

CONCLUSIONS AND RECOMMENDATIONS

The submitted HASP is very thorough and well written; it also contains valuable information relating to occupational safety and health, as well as community health and safety. However, the areas where the HSP has requested additional information and/or clarification should 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 Coby Graham at (510) 540-3934.

PEER REVIEW BY: 
Ryan Kinsella, MS, REHS, CIH
Senior Industrial Hygienist

