

United States Department of the Interior

National Park Service
Pacific West Region
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San Francisco, California 94104

April 16, 2015

Memorandum

TO: Regional Director, Pacific West Region

FROM: Superintendent, Sequoia and Kings Canyon National Parks

THROUGH: Stephen J. Mitchell, P.E., NPS/PWR/FM, Operations/Environmental Program Lead

SUBJECT: Request for Non-Time-Critical Removal Action at Lower Kaweah Dump Area at Sequoia and Kings Canyon National Parks, Tulare County, California.

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed non-time critical removal action (NTCRA), as described herein, for the Lower Kaweah Dump Area at Sequoia and Kings Canyon National Parks (SEKI), Tulare County, California. This Action Memorandum addresses contamination associated with the former dump area at the Lower Kaweah Area, Solid Waste Management Unit (SWMU) #11 (Site). This Site meets the criteria for NTCRA under section 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal site evaluation

The National Park Service (NPS) identified an old dumpsite during inspections of the Lower Kaweah Area within the Giant Forest at Sequoia National Park. In 1998¹ and 2001², two site investigations reported that the dump fill consisted mostly of burn materials. Some of the observed fill materials consisted of ash, metal, glass, sheet metal, porcelain, aluminum pans and pitchers, wire, pipes, metal paint cans, wood chips and roots. A Human Health and Ecological

1 Kleinfelder, Inc. (Kleinfelder), 1998. *Site Investigation Report, Giant Forest – Lower Kaweah Dump Area, Sequoia National Park*. November 25.

2 Kleinfelder, 2002. *Lower Kaweah Dump Area Expanded Site Assessment, Sequoia National Park, California*. January 11.

Risk Evaluation³ (HERA) for the Site concluded that no unacceptable human or ecological effects from site contaminants were expected to occur.

The 1998 and 2001, Site Investigation (SI) and expanded Site Assessment (SA), respectively, indicated that Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances were present at elevated concentrations in materials and soils in the dump area but the extent of contamination was not clearly defined. Although the HERA concluded no human or ecological exposure risk existed, NPS reviewed available Site information and concluded that the SI and expanded SA did not completely characterize the nature and extent of contamination for purposes of conducting a NTCRA. To address these gaps in the characterization of contamination, NPS directed Environmental Cost Management, Inc. (ECM) to prepare and perform a Work Plan⁴ to address the remaining data needs for a complete Site characterization and the preparation of an EE/CA Report⁵.

Using the additional collected data, ECM completed a streamlined risk evaluation for human and ecological receptors that indicated hazard indices above one, for both ecological and human receptors, which indicate that leaving the impacted soil and waste materials associated with the Lower Kaweah Dump Area in its present condition, would pose an unacceptable risk to human health and the environment.

2. Physical location

The Site is located near a maintenance yard, at approximately 450 yards northwest of the Giant Forest Museum, located at the intersection of Generals Highway and Crescent Meadow Road in the Lower Kaweah area of the Giant Forest of SEKI.

3. Site Characteristics

SEKI hosted 1,697,617 visitors in 2012, with an average of 1,620,445 visitors annually from 2009 to 2012⁶. Recreational activities vary with each season and include day hiking, backpacking, horseback riding, stock use, rock climbing, snow sports, snow play, and auto touring⁷. Approximately 96.85 percent of SEKI is designated and managed as wilderness (838,000 acres).

The Site consists of an oval shaped area measuring approximately 150 feet in length by 100 feet in width, covering an area measuring approximately 11,780 square feet or 0.27 acres. The thickness of the dump fill material ranges from 2 to 9 feet, with an estimated average thickness of 5 feet. Based on these approximate measurements, the volume of the dumpsite is estimated at approximately 2,180 cubic yards.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant.

3 U.S. Army Corps of Engineers, 2005. *Human Health and Ecological Risk Evaluation Lower Kaweah Dump Area, Sequoia National Park, California*, Draft. August.

4 Environmental Cost Management, Inc. (ECM), 2014. *Work Plan for Additional Soil Assessment, Sequoia and Kings Canyon National Parks, Three Rivers, CA*. March 6.

5 ECM, 2015. *Engineering Evaluation and Cost Analysis Report, Lower Kaweah Dump Area, Sequoia and Kings Canyon National Parks, Tulare County, California*. March 13, 2015.

6 National Park Service (NPS). "Sequoia and Kings Canyon – Fact Sheet 2013". August 23, 2013.

7 NPS. "Sequoia and Kings Canyon – Things To Do" <http://www.nps.gov/seki/planyourvisit/things2do.htm>. Updated December 12, 2014, accessed on December 30, 2014.

Concentrations for most metals exceeded the site specific screening levels (SSSL) for soil. Only beryllium was below the SSSL and therefore not considered a contaminant of concern (COC). Additionally, dioxin 2,3,7,8-Tetrachlorodibenzodioxin (TCDD) and pesticide 4,4'-dichlorodiphenyl-trichloroethane (DDT) exceeded SSSL concentrations in at least one sample and are considered COC.

The EE/CA Report⁸ presents the evaluation for the potential risk to human health or to the environment evaluation if no action were to occur. These risks are estimated by the following:

- Total Cancer Risk
- Hazard quotient – human health
- Hazard quotient – ecological receptors
- Hazard index – human health
- Hazard index – ecological receptors

Arsenic and 2,3,7,8-TCDD are the only COCs whose SSSLs are based on a cancer endpoint. Arsenic and 2,3,7,8-TCDD pose an excess lifetime cancer risk of 4.02×10^{-4} , or 4.02 in ten thousand. At SEKI, the overall cancer risk, estimated at 4.02×10^{-4} , is within a reasonable range based on the expected low human exposure to the Site.

Of all COCs with non-cancer endpoints, cadmium, chromium, copper, lead and zinc have human-health hazard quotients exceeding one. The hazard index is estimated at 33.18, indicating that collectively the COCs at the Site pose a significant risk to human health.

For ecological receptors, zinc poses the greatest risk with estimated hazardous quotients ranging from 23.11 to 1,146.94 for avian and invertebrates, respectively. Collectively, the hazard index is estimated at 45.4 for avian, 242.6 for mammalian, 1,423.9 for invertebrates, and 344.0 for plants, indicating that collectively the COCs at the Site pose a significant risk to ecological receptors.

Hazard indices above one for ecological and human receptors indicate that leaving the waste material and impacted soil associated with the lower Kaweah dumpsite in its present condition poses an unacceptable risk to human health and the environment.

5. NPL Status

The site is not currently on, nor proposed for the National Priorities List (NPL).

6. Maps, pictures and other graphic representations

Figure 1 shows the location of the Site.

B. Other Actions to Date

1. Previous actions

None.

2. Current actions

⁸ ECM, 2015. *Engineering Evaluation and Cost Analysis Report, Lower Kaweah Dump Area, Sequoia and Kings Canyon National Parks, Tulare County, California*. March 13, 2015.

None.

C. State and Local Authorities' Roles

None.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public or Welfare

NPS eliminated the following receptors from consideration in the Human Health Risk Conceptual Site Model (CSM) of the Site:

- Groundwater,
- Surface water,
- Air for chemicals volatilization, and
- Residents.

Based on field observations, no water is present at the surface or immediately beneath the waste material near the dump site. Although the constituents of potential concern (COPC) exceed soil-to-groundwater screening thresholds, COPC will not likely impact site groundwater, due to depth to groundwater and lack of presence of water at the site. Also, background concentrations of COPC are above soil-to-groundwater screening thresholds. The nearest downgradient surface water to the Site is the Marble Fork of the Kaweah River, approximately 4,900 feet downslope. The drainage pathway from the site to surface water is heavily vegetated, and no waste material was observed to be migrating more than a few feet from the dumpsite area. COPC are not expected to impact surface water. Results for volatile compounds in soil taken with field instruments (photoionization detector) indicated that no volatile organic compounds (VOC) are emanating from the Site. No residents live at or near the location of the dumpsite at SEKI.

During EE/CA Report⁹ preparation, significant threats to public or welfare were identified based on the Human Health Streamlined Risk Assessment prepared for the Site.

B. Threats to the Environment

NPS eliminated the following receptors from consideration in the Ecological Risk Conceptual Site Model (CSM) of the Site:

- Aquatic Organisms.

Aquatic organisms screening levels were removed because the exposure pathway is not complete based on the location of nearest surface body of water, Marble Fork Kaweah River, located at approximately 3,690 feet west of the dumpsite, as there is no confirmed transport pathway from the source that could reach the stream.

The estimated environmental risk for ecological receptors¹⁰ in the Site vicinity indicated that leaving the waste materials and the impacted soil in place poses an unacceptable risk to the environment.

⁹ *Ibid.*

¹⁰ *Ibid.*

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response action selected in this Action Memorandum, present an imminent and substantial endangerment to Human Health and the Environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

Removal of the waste materials and impacted soils and off-site disposal is the most protective of human health and ecological receptors and it will completely eliminate all environmental concerns in the short- and long-term, immediately after completion, meeting all the evaluation criteria.

A. Proposed Actions

1. Proposed Action Description

The proposed action, excavation and off-site disposal, will consist of the following components.

Documentation

This alternative will require engineering designs, construction management, and a health and safety plan. Contacts with appropriate agencies and tribes regarding historical and cultural resources and potential cultural items, remains, and funerary objects could be required.

A biological and botanical resource inventory report prepared by NPS concluding that the project will not impact sensitive species will be required before implementation. In addition, a historical and cultural resources survey report prepared by NPS concluding that the project will not impact these resources will be required before implementation. The EE/CA underwent internal interdisciplinary review and public review. Mitigation measures were generated by the parks' subject matter experts during that process. Mitigation measures are attached to this Action Memorandum (NPS, Sequoia and Kings Canyon National Parks, December 16, 2014).

Excavation

The proposed action involves removing the waste materials from the dumpsite area to match the pre-existing natural grade. No additional imported soil will be required, as no depression will be created by the removal activities since the waste materials were deposited on top of the pre-existing surface, which doesn't need to be excavated. A storm water pollution prevention plan (SWPPP) shall be prepared containing measures such as drainage swales, sediment ponds, or silt fencing and be incorporated into the project to minimize the potential for adverse impacts to water quality during excavation activities. Fugitive dust emissions will be minimized by laying down water spray during excavation and soil loading operations, and will conform to the applicable EPA regulations for earth-moving activities in contaminated areas.

Off-Site Disposal

After the Site has been excavated, the dump fill materials and soil will constitute a waste and will be disposed off-site. The exposure point concentration of zinc (5,089 mg/kg) exceeds the California Total Threshold Limit Concentration (TTLC) of 5,000 mg/kg, so if disposed in California, an authorized hazardous waste landfill could only accept the waste as a non-RCRA hazardous waste solid. Other metals (arsenic, cadmium, chromium, copper, and lead) could potentially contain leachable concentrations exceeding California's Soluble Threshold Limit

Concentration (STLC). The exposure point concentration for lead is 632.38 mg/kg, which can potentially contain leachable concentrations exceeding RCRA limits. If so, then the waste will require chemical stabilization prior to off-site landfill disposal.

Chemical Stabilization

If STLC metals concentration values deem the removed impacted soil as a RCRA Hazardous Waste for off-site disposal purposes, chemical stabilization will be performed at the landfill. Chemical stabilization uses reagents added to the contaminated soils to form less soluble compounds while controlling pH in a range of minimum solubility. The cost estimate presented in this Action Memorandum assume that the excavated waste will be classified as RCRA Hazardous Waste requiring chemical stabilization for off-site disposal.

Confirmation Sampling

Following the removal of the contaminated material from the site, confirmation sampling will verify that contamination was fully removed to the extent practicable. Confirmation samples will be collected for metals analysis. Once confirmation sampling shows that metal concentrations meet the removal action objectives designated for the project, restoration activities will be completed.

Restoration Activities

If any depressions are left at the dumpsite area after completing the removal of the waste materials and impacted soils, they will be re-graded to match the pre-existing natural grade in order to direct surface water into natural channels and drainages. All disturbed areas will be re-graded for positive drainage, and then vegetated with native species, to the extent practicable and as soon as practicable, to minimize construction-related sediment transport.

2. Contribution to remedial performance

The proposed action is considered a final and permanent remedy.

3. Description of alternative technologies

As this site is categorized as a NTCRA site, an EE/CA Report¹¹ was completed. The EE/CA Report identifies and presents the description of the seven removal action technologies reviewed for the development of the four removal action alternatives evaluated.

The seven removal action technologies presented in the EE/CA Report are:

1. No action;
2. Institutional controls;
3. Capping;
4. Engineering controls – Re-vegetation;
5. Phytoremediation;
6. Excavation; and,
7. Off-site disposal

The four removal action alternatives evaluated in the EE/CA Report are:

1. No action;

¹¹ *Ibid.*

2. Capping, re-vegetation and institutional controls;
3. Capping, phytoremediation and institutional controls; and,
4. Excavation and off-site disposal.

4. EE/CA

Refer to the attached EE/CA Report¹² and the EE/CA Approval Memorandum¹³ for a discussion of removal action alternatives considered for this NTCRA.

5. Applicable or Relevant and Appropriate Requirements (ARARs)

The EE/CA Report present a detailed assessment of ARARs for this site. These ARARs include:

Federal ARARs:

- Comprehensive Environmental Response, Compensation, and Liability Act
- Resource Conservation and Recovery Act
- National Environmental Policy Act
- Clean Water Act
- Safe Drinking Water Act
- Clean Air Act
- Endangered Species Act
- Fish and Wildlife Coordination Act
- Wilderness Act
- Historic Sites, Buildings, and Antiquities Act and Executive Order 11593
- Historic and Archeological Data Preservation Act of 1974
- Consultation and Coordination with Indian Tribal Governments Executive Order 13171
- Protection of Indian Sacred Sites Executive Order 13007
- Migratory Bird Treaty Act
- National Park Resource and Protection, Public Use and Recreation 36 CFR Part 2
- National Park Service Management Policies 2006
- Protection of Wetlands Order, Executive Order 11990
- Native American Graves Protection and Repatriation Act
- Hazardous Materials Transportation Act
- Solid Waste Disposal in Units of the National Park System
- Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act
- Criteria for Municipal Solid-Waste Landfills
- Closure Criterial for Municipal Solid-Waste Landfills
- Special Provisions for Cleanup Corrective Action Management Units

State and Local ARARs:

- California Environmental Quality Act
- California Hazardous Waste Control Act
- California Safe Drinking Water Act

¹² *Ibid.*

¹³ *EE/CA Approval Memorandum, Lower Kaweah Dump Area at Sequoia and Kings Canyon National Parks.* November 7, 2013.

- California Air Quality Control Act
- California Hazardous Waste Disposal and Transportation Program
- California Solid Waste Management Regulations
- California Global Warming Solutions Act of 2006
- Porter-Cologne Water Quality Act
- California Wildlife Conservation Act
- California Preservation Laws
- California Drinking Water Policy
- California Cultural and Paleontological Resources
- California Department of Toxic Substance Control Preliminary Endangerment Assessment Guidance Manual
- California Endangered Species Act
- Environmental Ordinances of the County of Tulare
- Mulford-Carrell Air Resources Act
- San Joaquin Valley Unified Air Pollution Control District - San Joaquin Valley Air Basin Program

6. Project Schedule

Following approval of this Action Memorandum, NPS must secure congressional funding for the implementation of the proposed removal action. A project schedule can be developed once congressional funding has been secured, most likely no sooner than fiscal year 2016.

B. Estimated Costs

Table 1: Estimated Costs and Schedule for the Proposed Removal Action at Lower Kaweah Dump Area at Sequoia and Kings Canyon National Parks.

Proposed Removal Action	Estimated Cost	Anticipated Schedule
Excavation, Transportation and Off-site Disposal	\$ 1,590,000 \$2,385,000 (+ 50% Ceiling Estimate)	To be determined. Most likely no sooner than fiscal year 2016.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Leaving the dump fill materials and the impacted soil associated with the Lower Kaweah Dumpsite in place poses an unacceptable risk to human health and the environment based on the streamlined risk assessment results for human health and ecological receptors presented in the EE/CA Report¹⁴.

VII. OUTSTANDING POLICY ISSUES

None.

¹⁴ ECM, 2015. *Engineering Evaluation and Cost Analysis Report, Lower Kaweah Dump Area, Sequoia and Kings Canyon National Parks, Tulare County, California.* March 13, 2015.

VIII. ENFORCEMENT

None.

IX. RECOMMENDATION

This decision document represents the current selected removal action for the Lower Kaweah Dump Area at Sequoia and Kings Canyon National Parks, in Tulare County, California, developed in accordance with CERCLA as amended, and consistent with NCP. This decision is based on the administrative record for the Site.

Conditions at the Site meet the NCP section 300.415(b)(2) criteria for NTCRA and we recommend your approval of the proposed removal action alternative. The total project ceiling, if approved, will be \$2,385,000.

Patricia L. Neubauer

Acting Regional Director, PWR Approval Signature

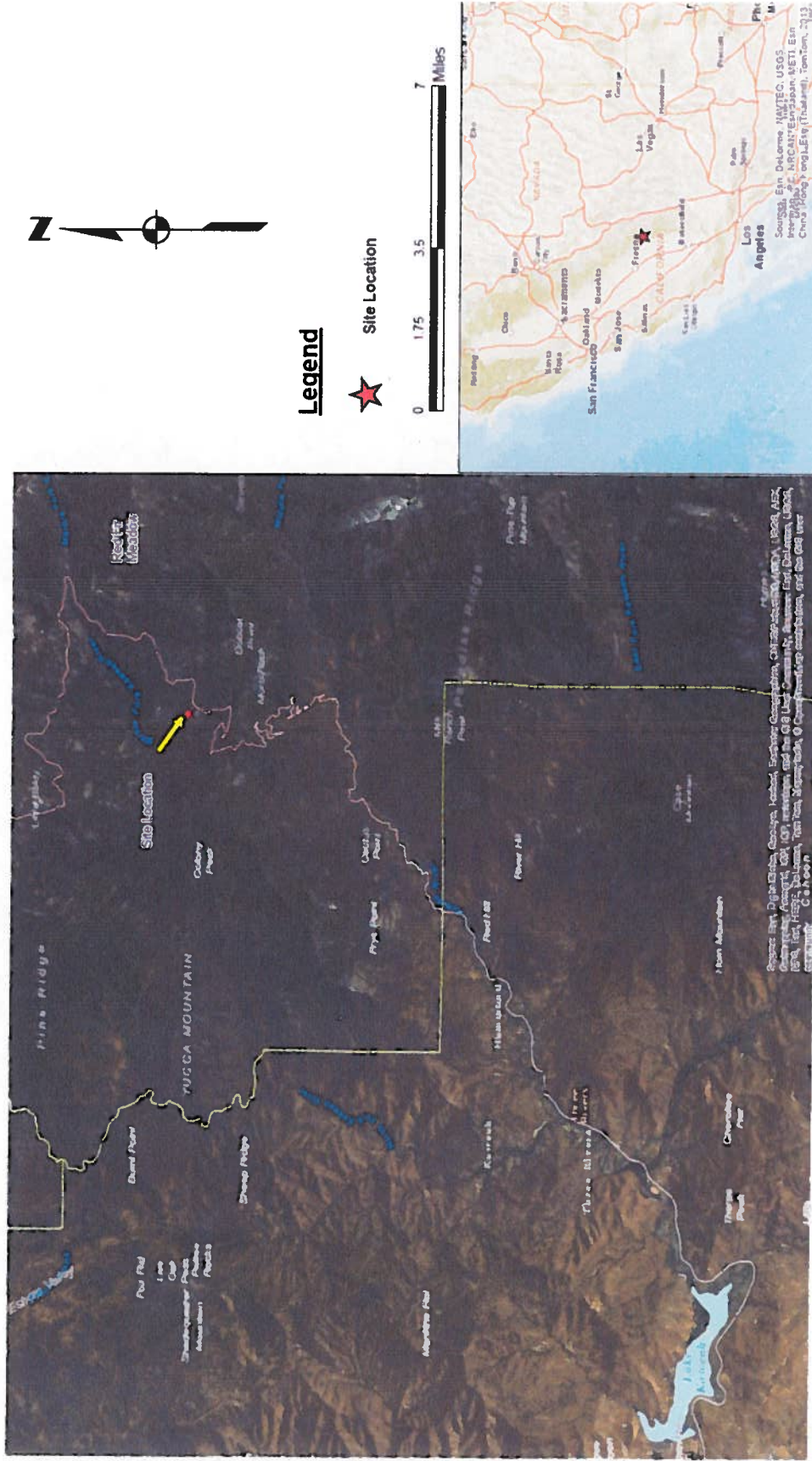
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Date

Acting Regional Director, PWR Disapproval Signature

Date

Figure 1 - Site Location Map
Lower Kaweah Dump Area at Sequoia and Kings Canyon National Parks



**Action Memorandum
Lower Kaweah Dump Area
Sequoia and Kings Canyon National Parks**

April 16, 2015

Figure 1