



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

**Department of
Environmental Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

610 University Avenue
Fairbanks, AK 99709-3643
Phone: 907-451-2143
Fax: 907-451-2155
www.dec.alaska.gov

File: 860.38.046

June 30, 2017

Christiana Hewitt
AFCEC/CIBE
2261 Hughes Ave, Suite 155
JSBA Lackland, TX 78236-9853

Subject: Decision Document: Galena AFS/Airport - AST 1569 (CSS001) Electric Power Station
Cleanup Complete Determination

Dear Ms Hewitt:

The Alaska Department of Environmental Conservation (ADEC), Contaminated Sites Program has completed a review of the environmental records associated with the Galena AFS/Airport - AST1569 (CSS001) Electric Power Station located at Galena, Alaska. Based on the information provided to date, it has been determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment. No further remedial action will be required unless new information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the Former Galena Forward Operating Location (FOL), which is located in the ADEC office in Fairbanks, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:

AST 1569 (CSS001)
Electric Power Station
North of Galena Airport Runway
Galena, Alaska 99741

Name and Mailing Address of Contact Party:

Christiana Hewitt
AFCEC/CIBE
2261 Hughes Ave., Suite 155
JSBA Lackland, TX 78236-9853

DEC Site Identifiers:

File No.: 860.38.046
Hazard ID.: 25908

Regulatory Authority for Determination:

18 AAC 75 and 18 AAC 78

Site Description and Background

Site CSS001 (formerly known as Site AST1569) is located in the southern part of the Former Galena FOL cantonment triangle, northeast of the intersection of Birchwood Avenue and Airport Road, as shown on Figure 1. Site CSS001 is within the fenced yard that also contained the former Radar Approach Control (RAPCON) Building 1568.

Site CSS001 consists of the area surrounding a former 275-gallon aboveground storage tank (AST) that was part of a standby generator which provided emergency power to the Building 1568 RAPCON facility. The generator enclosure, AST, and all associated piping were removed by the City of Galena in 2011. Surface releases from overflowing or leaks associated with former fuel tank AST 1569-1 are the suspected sources of contamination.

Contaminants of Concern

The following contaminants of concern (those above approved cleanup levels) were identified following site characterization conducted at Site CSS001. Investigations and removal actions are summarized in the Characterization and Cleanup Activities section of this decision letter.

- C6-C10 gasoline-range organics (GRO)
- C10-C25 diesel-range organic (DRO)
- C25-C36 residual-range organic (RRO)
- Benzene
- 1,1,2-Trichloroethane (1,1,2 TCA)

Cleanup Levels

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)	Groundwater (mg/L)
GRO	300	2,2
DRO	250	1.5
RRO	11,000	1.1
Benzene	0.022	0.0046
1,1,2 TCA	0.0014	0.00041

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

Characterization and Cleanup Activities

Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in 2009. These activities are described below.

A reconnaissance-level site visit and ecological site survey were completed in October 2009 as part of the Preliminary Assessment (PA) for Site CSS001. No evidence was found that would indicate a potential release from AST 1569-1, and the tank appeared to be in good condition. No viable habitat for plants or animals was observed during the ecological site survey.

Site Inspection and Site Characterization sampling was conducted at Site CSS001 in 2010. Soil and groundwater samples were analyzed for DRO; gasoline range organics (GRO); residual range organics (RRO) and benzene, toluene, ethylbenzene and xylenes (BTEX). Ten percent of samples were also analyzed for polynuclear aromatic hydrocarbons (PAHs). The contaminants in Table 1 were detected above the approved cleanup levels in soil. Groundwater samples collected from one source area temporary probe detected DRO at concentrations exceeding the groundwater cleanup levels.

Subsequently, in 2011, an interim removal action (IRA) was completed to remove the petroleum-contaminated soil, and confirmation sampling was conducted. The excavation was terminated in the southeast portion because of utilities in the area although some petroleum contaminated soil remained

above cleanup levels. Following the IRA excavation, groundwater samples were collected from one downgradient monitoring well and a source area monitoring well. Groundwater samples were also collected from one downgradient temporary probe. Groundwater samples were analyzed for GRO, DRO, RRO, PAHs, and VOCs. In one sample, DRO concentrations exceeded the ADEC Table C CULs. However, soil from this sample location was excavated during the 2011 IRA and clean confirmation soil samples were obtained from the excavation bottom.

In 2013 a monitoring well was installed downgradient from the site for further characterization of groundwater. In August 2015, additional fieldwork was performed at Site CSS001. An additional monitoring well was installed where soil contamination remained in the southern excavation sidewall after the 2011 IRA. Soil and groundwater samples were collected to provide additional data for risk evaluations. DRO concentrations in soil were detected at 57,000 J mg/kg.

In August and September 2016, additional soil excavation was conducted. The objective of the soil excavation was to remove soil with DRO concentrations greater than the remediation target concentration of 10,250 mg/kg (the Method Two CUL for the ingestion pathway). Upon completion of the 2016 Removal Action, DRO remained in the excavation sidewalls within a silt layer between 5 and 8 feet bgs at concentrations below the Method Two CULs for ingestion, with the exception of one sample beneath the concrete slab of the utilidor vault. DRO concentrations collected above and below the silt layer were below the Method Two CULs, providing vertical delineation.

The extent of soil contamination at Site CSS001 is bounded by confirmation samples to the north, south, west, and east. One soil sample along the south excavation wall had a DRO concentration of 11,000 mg/kg; however, this sample was located beneath the 5-foot deep concrete slab that extends around the utilidor vault, thus preventing any further excavation to the south. Another hand auger sample on the south side of the utilidor vault confirmed that this concrete slab extends to the fenceline, which separates the southern edge of Site CSS001 from the northern edge of Site SS017.

Groundwater sampling has been performed at and immediately downgradient from the residual source area, located in the southeastern portion of the excavation area. In August 2015, a monitoring well was installed and sampled within the source area and the sample results were less than Table C CULs for all analytes. Monitoring well *AST1569-MW001*, located immediately downgradient from the residual source area, has been sampled four times (August 2013, April 2014, August 2014, and August 2015), and all groundwater sample results were less than the Table C CULs for all analytes.

Following the removal actions the estimated area still affected by DRO at concentrations greater than the ADEC Method Two Soil migration to groundwater CULs is approximately 25 feet by 25 feet, located adjacent to the communications line within the silt layer extending from approximately 5 to 8 feet bgs in the vadose zone. A small volume of soil, approximately 3 feet by 3 feet in the silt layer beneath the utilidor vault from 6 to 8 feet bgs has DRO concentrations above the Method Two CUL for ingestion. The excavation could not proceed any further south without potentially undermining and damaging the concrete slab beneath the utilidor vault. A 95 percent upper confidence limit (UCL) on the mean concentration of the samples within the source area was evaluated for the DRO exposure point concentration (EPC). The 95 percent UCL for remaining DRO in the soil source area is 6,769 mg/kg.

Concentrations of contaminants in groundwater samples collected from site monitoring wells installed at the source area and downgradient of the source area are below ADEC Method Two, Table C Cleanup Levels. There is no surface water present at this site.

Table 2 – Contaminant Concentrations Remaining at Site CSS001

Contaminant	Soil Cleanup Level Migration to Groundwater (mg/kg)	Soil Cleanup Level Direct Contact (mg/kg)	Highest Concentrations Remaining (mg/kg)
DRO	250	10,250	11,000 (6,769) ^a

^a = The maximum concentration (11,000 mg/kg) was detected beneath the utilidor vault and could not be further excavated. The EPC for DRO in the soil source area is the 95 percent UCL (6,769 mg/kg).

mg/kg = milligrams per kilogram

J = estimated value

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one across all exposure pathways. Cumulative risk is calculated using all contaminant concentrations remaining on site at concentrations above 1/10th the cleanup level, per 18 AAC 75.340 (k).

For CSS001, a human health risk evaluation using the Hydrocarbon Risk Calculator (HRC) under ADEC Method Three (18 AAC 75.340 (e) and 18 AAC 78.600 (d)) was undertaken. Cumulative risk was shown to be below the regulatory carcinogenic risk standard of 1E-05. The cumulative non-cancer hazard index (HI) estimates for the current industrial and hypothetical residential exposure scenarios are below the regulatory risk standard of 1 in the HRC evaluation.

Subsequent to evaluating site risk using the HRC, ADEC revised the site cleanup rules (18 AAC 75.325 to 390) and promulgated new cleanup levels for soil and groundwater. Cumulative risk from residual contamination at the site was further evaluated using the ADEC 2016 Method Three Cumulative Risk Calculator using a residential exposure scenario. The cumulative cancer risk estimate is below the regulatory risk standard of 1E-05, and the cumulative noncancer HI estimate is below the regulatory risk standard of 1, supporting a Cleanup Complete determination under the 2016 ADEC cleanup rules.

Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De-Minimis Exposure, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 3.

Table 3 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Contamination is no longer present in surface soil (0 to 2 feet below ground surface). Removed during excavations.
Sub-Surface Soil Contact	De-Minimis Exposure	Extensive soil removal has been conducted at this site. A small area remains with DRO above human health cleanup levels. The remaining contamination is beneath a concrete slab at the southern extent of the site.
Outdoor Air Inhalation	Pathway Incomplete	No contaminants remain above human health inhalation cleanup levels.

Pathway	Result	Explanation
Groundwater Ingestion	Pathway Incomplete	Groundwater is not impacted above Table C cleanup levels.
Surface Water Ingestion	Pathway Incomplete	This site is 0.3 miles upgradient of the Yukon River. Groundwater is not impacted and contamination is not expected to migrate to surface water.
Wild and Farmed Foods Ingestion	Pathway Incomplete	An ecological evaluation, including an ecoscoping form, was presented in the Site Characterization Results Report. Terrestrial ecological exposure pathways are considered incomplete at Site CSS001. Therefore, the wild foods ingestion pathway is considered incomplete.
Indoor Air Inhalation (vapor intrusion)	Pathway Incomplete	Although the presence of a utilidor at the southern extent of the site presents a preferential pathway, the buildings nearest to the site along the utilidor have been evaluated for vapor intrusion and no vapor intrusion is occurring. In addition, the utilidor is not accessible by people due to its size.
Other Human Health	De Minimus	A small area remains (approximately 1 cubic yard) with DRO above human health cleanup levels. The remaining contamination is beneath a concrete slab at the southern extent of the site.
Ecological	Pathway Incomplete	An ecological evaluation, including an ecoscoping form, was presented in the Site Characterization Results Report. Terrestrial ecological exposure pathways are considered incomplete at Site CSS001. Because Site CSS001 is located more than 1,000 feet from the Yukon River, there is no potentially complete aquatic ecological pathway.

Notes to Table 3: “De-Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be adversely affected by the minimal volume or concentration of remaining contamination. “Pathway Incomplete” means that in ADEC’s judgment contamination has no potential to contact receptors. “Exposure Controlled” means there is an institutional control in place limiting land or groundwater use and there may be a physical barrier in place that prevents contact with residual contamination.

ADEC Decision

A *de-minimis* volume of petroleum contaminated soil was left in place approximately 5 to 8 feet below ground surface with concentrations above the migration to groundwater cleanup levels but EPCs below direct contact or ingestion cleanup levels. However, groundwater samples indicate that all analytes in groundwater are below Table C cleanup levels. Migration to groundwater is not a concern at this site. All remaining contamination in soil and groundwater is either below approved cleanup levels or has been deemed “*de-minimis*” by ADEC. Therefore, this site will be updated in the Contaminated Sites Database to reflect that the Site CSS001 is no longer of concern and will be considered closed, without institutional controls, subject to the following standard conditions.

Standard Conditions

1. Any proposal to transport soil or groundwater off-site requires ADEC approval in accordance with 18 AAC 75.325(i). A “site” [as defined by 18 AAC 75.990 (115)] means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership. (See attached site figure.)
2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

3. Groundwater throughout Alaska is protected for use as a water supply for drinking, culinary and food processing, agriculture including irrigation and stock watering, aquaculture, and industrial use. Contaminated site cleanup complete determinations are based on groundwater being considered a potential drinking water source. In the event that groundwater from this site is to be used for other purposes in the future, such as aquaculture, additional testing and treatment may be required to ensure the water is suitable for its intended use.

This determination is in accordance with 18 AAC 75.380 and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that contaminants at this site may pose an unacceptable risk to human health, safety, or welfare or to the environment.

Appeal

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 555 Cordova Street, Anchorage, Alaska 99501-2617, within 15 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, P.O. Box 111800, Juneau, Alaska 99811-1800, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

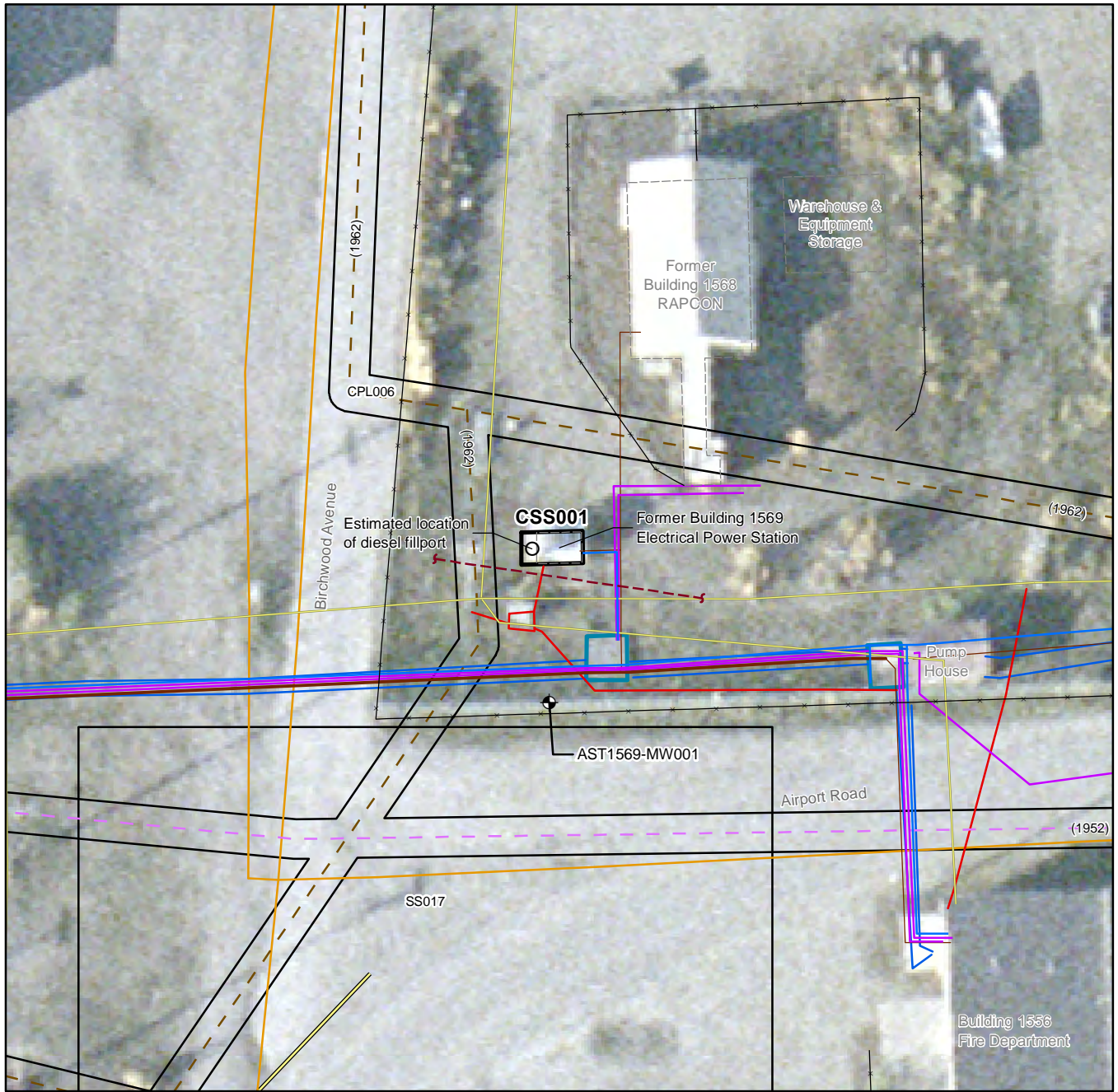
If you have questions about this closure decision, please feel free to contact me at (907) 451-2180, or email at dennis.shepard@alaska.gov.

Sincerely,

Dennis Shepard
Project Manager

Enclosures: Figure 1 – Site CSS001 Location

cc, via email: Donna Kozak, Booz Allen Hamilton
 Angela Sederquist, Booz Allen Hamilton
 Sam Myers
 Bruce Henry, Parsons
 Win Westervelt, CH2M HILL
 Andi Beausang, CH2M HILL
 Shanda Huntington, City of Galena
 Jamie McKellar, ADEC



LEGEND

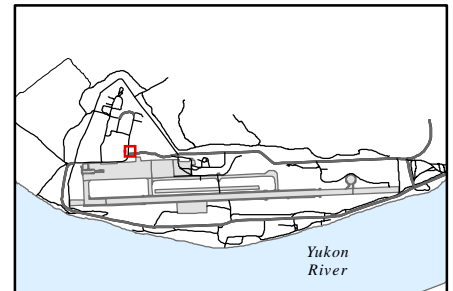
- CSS001
- Adjacent Site
- Approximate Location of Former Feature
- Fence
- Active Buried Telecommunication Line
- Abandoned Fuel Line (1952)
- Abandoned Fuel Line (1962)
- Electrical Line
- Heating/Cooling Line
- Water Line

Underground Utility Locates – 2010

- Electrical Line
- Communications Line
- Potable Water Main
- Fuel/Gas Line
- Electrical Transformer
- Utility Vault

Existing Permanent Wells

- Monitoring Well



Notes:

1. Aerial photography courtesy Alaska Department of Commerce, Community and Economic Development, Division of Community and Regional Affairs. September 4, 2009. Pixel size 0.25 meters.

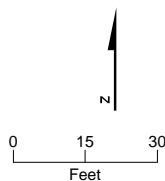


FIGURE 1
Site CSS001 Layout

ADEC Method Three Risk Evaluation
Former Galena Forward Operating Location, Alaska