

APPENDICES

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Appendix A

Using this Programmatic EA to Tier Future NEPA Reviews

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Using this Programmatic EA to Tier Future NEPA Reviews

What Is A Programmatic Document?

A programmatic document is a type of general, broad National Environmental Policy Act (NEPA) review (either an Environmental Assessment (EA) or Environmental Impact Statement (EIS)) from which subsequent EAs and EISs can be tiered. Programmatic EAs and EISs are prepared for broad federal actions, such as policies, plans, or programs, which address actions occurring over large areas or systems and may include groupings of similar actions or repeating actions over longer periods of time than other NEPA reviews. As stated in the Council on Environmental Quality's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, Title 40, Code of Federal Regulations (CFR), parts 1500-1508, (Council on Environmental Quality Regulations), a programmatic NEPA review allows for the analysis of a proposal that includes linked actions in the same general location, or activities that share relevant similarities such as timing, impacts, alternatives, implementation methods, or subject matter (see 40 CFR § 1502.4). Programmatic documents can also be useful in providing the basis for subsequent project-level specific environmental reviews. Paragraph 3-2 of Federal Aviation Administration (FAA) Order 1050.1F outlines the FAA's policies and procedures regarding programmatic NEPA documents and tiering.

Programmatic NEPA reviews are subject to the same process and procedural requirements as other EAs and EISs. If the FAA determines that the final actions analyzed in a programmatic EA do not have the potential for significant environmental impacts, then the FAA prepares a Finding of No Significant Impact (FONSI) with regard to those actions. As with any other EA, the FAA may document its decision in a Record of Decision (ROD). A ROD would be required following preparation of a Programmatic EIS. The finding or decision document describes how the agency will use the programmatic NEPA document as a basis for tiering future NEPA reviews, and indicates when any deferred issues will be addressed. The Council on Environmental Quality Regulations outline tiering in 40 CFR §§ 1500.4(i), 1502.20, and 1508.28.

How Are Programmatic Documents Different From Project-Specific Documents?

Programmatic and project-specific documents differ in the scope of their analyses. Project-specific EAs and EISs tend to focus on specific actions at specific locations. In contrast, programmatic EAs and EISs tend to be broader in scope and tend to be less specific. A programmatic document should consider the potential environmental impacts of the future implementation of policy, projects, or actions, even if they are not fully known. In contrast, a project-specific document analyzes the impacts of an action within known and clearly defined parameters.

What Is Tiering?

Tiering refers to the coverage of general matters in broad NEPA reviews (such as programmatic EAs or EISs prepared for policies, programs, or broad groups of related actions) with subsequent narrower statements or analyses (such as project-level or site-specific EAs or EISs) that are tiered from the broader programmatic documents (see 40 CFR § 1508.28). Tiering allows for more efficient and focused analyses. Instead of restating material, information from the programmatic NEPA review can be incorporated into subsequent tiered reviews by reference (see 40 CFR § 1502.21). The advantage of tiering is that it reduces and

eliminates redundant or duplicative analysis that has already been considered at the programmatic level, thereby expediting the preparation of future site- or project-specific NEPA reviews. Tiering can also be used to sequence environmental documents from the early stage of a proposed action (e.g., need for the action and site selection) to a subsequent stage (e.g., proposed construction) to help focus on issues that are ripe for decision and exclude from consideration issues not yet ripe or already decided (see Paragraph 3-2 of FAA Order 1050.1F).

Why Is This Proposed Action Being Analyzed In A Programmatic Document?

Under the FAA licensing process, separate licenses must be obtained for operation of a commercial space launch or reentry site¹ and operation of a commercial space launch vehicle.² The Adams County Board of County Commissioners' stated goal in developing "Spaceport Colorado" is to establish the site as an aerospace and technology park and a global hub for commercial space transportation. To attract the commercial space launch vehicle operators and supporting economic clusters necessary to meet this goal, the Adams County Board of County Commissioners proposes to demonstrate that Front Range Airport (FTG) is a viable launch site by obtaining a launch site operator license from the FAA.

Currently the FAA has not received a proposal from a commercial launch vehicle operator to launch or land their vehicle at FTG; as a result, detailed vehicle information such as launch frequency, flight profile, and the infrastructure needed to support such a launch vehicle is not available. When a commercial launch vehicle operator does propose to launch at FTG, the licensing process requires the operator to apply for a separate launch operator license from the FAA. This license application is required to contain enough information for the FAA to analyze the environmental impacts associated with a proposed launch (14 CFR § 431.931).

The FAA has determined that analyzing the Proposed Action described in this document (i.e., issuance of a launch site operator license to FTG and conditional approval of the modified Airport Layout Plan showing the proposed launch site boundary) programmatically is the best way to sequence environmental documents between the early conceptual stages of project development (when no specific launch vehicle has been identified) and subsequent stages when more detailed information is available for analysis (once an application for a launch operator license has been received). By analyzing the conceptual operations of the type of launch vehicle most likely to launch from FTG in the Programmatic EA (PEA), the FAA is able to focus the analysis on those issues that are ripe for decision and exclude from consideration issues not yet ripe for discussion due to lack of data and their uncertain nature. The FAA can then tier subsequent documents from this PEA to focus on environmental impacts specific to an applicant's proposed operations under a launch operator license.

¹ 14 CFR § 420.15(b) discusses environmental review requirements for licenses to operate a launch site; 14 CFR §§ 433.7 and 433.9 discuss environmental review requirements for licenses to operate a reentry site.

² 14 CFR §§ 415.201 and 415.203 discuss environmental review requirements for launch licenses for expendable launch vehicles; 14 CFR §§ 431.91 and 431.93 discuss environmental review requirements for launch and reentry of reusable launch vehicles.

What is Addressed in This PEA And How Will Future Reviews Be Tiered?

At present, the only FAA decisions under consideration are FAA issuance of launch site operator license to FTG and conditional approval of the modified Airport Layout Plan showing the launch site boundary. Because it is reasonably foreseeable that future commercial space launch vehicle operations may take place at FTG, the FAA has determined that it is necessary to analyze such launches, as well as other potentially connected actions that could reasonably be expected to result from issuance of a launch site operator license, in the PEA.

As detailed information about these connected actions is not presently available, the PEA makes assumptions about the type of vehicle most likely to be proposed for launch at FTG (the conceptual reusable launch vehicle (RLV)) and the infrastructure needed to accommodate the conceptual RLV. The PEA analysis reflects the broad and general environmental impacts that may be expected to result from these conceptual operations.

When a commercial launch operator approaches the FAA with a proposal to launch a specific vehicle or family of vehicles from FTG, the FAA will assess the particular aspects of the operator's proposal in a subsequent NEPA review that will tier from this PEA. Where the aspects of the operator's proposal align with the conceptual operations analyzed in this PEA, the tiered EA will incorporate the PEA analysis by reference. Where the operator's proposal deviates from the conceptual operations analyzed in this PEA, the tiered EA will present a unique analysis of the potential impacts of the proposal. Table A-1 outlines those actions supported by this PEA and which analyses will be deferred until an operator proposes to launch at FTG.

Table A-1. PEA Components to be analyzed in Future Environmental Reviews

FAA ACTION	PROJECT COMPONENTS AND ASSUMPTIONS ANALYZED IN PEA	COMPONENTS TO BE ANALYZED IN FUTURE TIERED REVIEWS
Issuance of a launch operator license for operation of a launch vehicle from FTG	Operation of a conceptual RLV	<i>Specific details of operator’s proposed launch vehicle, including vehicle type, flight profiles, propellant type and quantity, and launch trajectory.</i> Where the operator’s proposal aligns with conceptual RLV operations, the tiered EA will incorporate the PEA analysis by reference. Where the operator’s proposal deviates, the tiered EA will present a detailed analysis of the potential for environmental impacts not presented in the PEA.
	52 launch operations annually	<i>Number of annual launch operations in the operator’s proposal.</i> If annual operations are less than the 52 analyzed in the PEA, the tiered EA will incorporate the relevant components of the PEA by reference. If the operator proposes a greater launch frequency (for example, if a launch operator proposes 2 launches a week for a total of 104 launches annually), the tiered document will present a detailed analysis of the potential for environmental impacts likely to result from this launch frequency.
	Operations between the hours of 7:00 a.m. and 10:00 p.m.	<i>Timeframe for launch operations in the operator’s proposal.</i> If all launches are proposed to be conducted during the hours analyzed in the PEA, the tiered EA will incorporate the relevant components of the PEA by reference. If the operator proposes a different timeframe for launch operations (for example, night time launches), the tiered document will present a detailed analysis of the potential for environmental impacts likely to result from night time launches.

FAA ACTION	PROJECT COMPONENTS AND ASSUMPTIONS ANALYZED IN PEA	COMPONENTS TO BE ANALYZED IN FUTURE TIERED REVIEWS
	20 new permanent full-time employees to support proposed operations at FTG	<i>Number of new employees needed based on the operator’s proposal.</i> If the number of new employees needed is less than the 20 analyzed in the PEA, the tiered EA will incorporate the relevant components of the PEA by reference. If the operator proposes launch operations requiring greater staff levels, the tiered document will present a detailed analysis of the potential for environmental impacts likely to result from a significant influx of new personnel at FTG.
Approval of an Airport Layout Plan modification reflecting construction of new infrastructure to accommodate the launch vehicle	Designation of launch site boundary	<i>Figure showing the launch site boundary.</i> If the launch site boundary changes for future operations, the tiered EA will consider the changes to the boundary.
	Installation of aboveground propellant and fuel storage tanks; location generalized based on FTG layout and safety concerns	<i>Number and location of propellant and fuel storage tanks needed for launch operations in the operator’s proposal.</i> The tiered EA will consider the specific location of these facilities based on the needs of the vehicle proposed for operation. To the extent that the proposed location aligns with that analyzed in the PEA, the tiered EA will incorporate the PEA analysis by reference. Where the proposed location and/or type of storage deviates from that analyzed in the PEA, the tiered EA will present a detailed analysis of the potential for environmental impacts.
	Construction of concrete pads for mission preparation; location generalized based on conceptual RLV operations, FTG layout, and safety concerns	<i>Number, location, and dimensions of concrete pads.</i> The tiered EA will consider the specific size and location of these facilities based on the needs of the vehicle proposed for operation. To the extent that the proposed location and dimensions align with that analyzed in the PEA, the tiered EA will incorporate the PEA analysis by reference. Where the proposed location and/or dimensions deviate from that analyzed in the PEA, the tiered EA will present a detailed analysis of the potential for environmental impacts.

FAA ACTION	PROJECT COMPONENTS AND ASSUMPTIONS ANALYZED IN PEA	COMPONENTS TO BE ANALYZED IN FUTURE TIERED REVIEWS
	Construction of a concrete pad and a 150-foot access driveway for static hot-fire engine testing and operation of static engine testing	<i>Location and dimension of concrete pad and frequency of static engine testing.</i> The tiered EA will consider the specific location of this pad based on the needs of the vehicle proposed for operation. To the extent that the proposed location aligns with that analyzed in the PEA, the tiered EA will incorporate the PEA analysis by reference. Similarly, if the proposed frequency of static engine testing is the same or less than that analyzed in this PEA, the tiered EA will incorporate the PEA analysis by reference. Where the proposed location and/or frequency of engine testing deviates from that analyzed in the PEA, the tiered EA will present a detailed analysis of the potential for environmental impacts.
	Construction of new interior site roads to provide better access to the propellant storage area and static hot fire test stand	<i>Length and location of new roads.</i> The tiered EA will consider the specific location of these roads based on the needs of the vehicle proposed for operation. To the extent that the proposed location and length of roads aligns with that analyzed in the PEA, the tiered EA will incorporate the PEA analysis by reference. Where the proposed location and/or road length deviates from that analyzed in the PEA, the tiered EA will present a detailed analysis of the potential for environmental impacts.
	Installation of an aboveground water storage tank and non-potable water line for firefighting and daily operational needs	<i>Location and capacity of water storage tank and non-potable water line.</i> The tiered EA will consider the specific location and capacity of this tank and water line based on the needs of the vehicle proposed for operation. To the extent that the proposed location and capacity aligns with that analyzed in the PEA, the tiered EA will incorporate the PEA analysis by reference. Where the proposed location and/or capacity deviates from that analyzed in the PEA, the tiered EA will present a detailed analysis of the potential for environmental impacts.

FAA ACTION	PROJECT COMPONENTS AND ASSUMPTIONS ANALYZED IN PEA	COMPONENTS TO BE ANALYZED IN FUTURE TIERED REVIEWS
	Installation of high-speed fiber optic communication lines, security fencing, and access roads	<i>Dimension and locations of fiber optic lines, fencing, and access roads.</i> The tiered EA will consider the specific location of these facilities based on the needs of the vehicle proposed for operation. To the extent that the proposed location and dimensions align with that analyzed in the PEA, the tiered EA will incorporate the PEA analysis by reference. Where the proposed location and/or dimensions deviate from that analyzed in the PEA, the tiered EA will present a detailed analysis of the potential for environmental impacts.
Airspace modifications to accommodate operation of the launch vehicle	Airspace procedural changes, coordination, and notifications based on conceptual operations of the conceptual RLV	<i>Designation of RLV Operating Area.</i> The tiered EA will include an evaluation and designation of a new RLV operating area. While the vehicle will be required to operate within the parameters established in this PEA, a new RLV operating area may be designated based on the needs of the vehicle proposed for operation. To the extent that the proposed RLV operating area aligns with that analyzed in the PEA, the tiered EA will incorporate the PEA analysis by reference. Where the proposed RLV operating area deviates from that analyzed in the PEA, the tiered EA will present a detailed analysis of the potential for environmental impacts.

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Appendix B

USFWS Information, Planning, and Conservation Report

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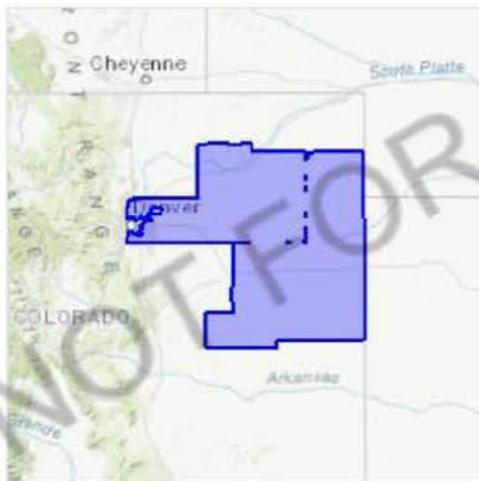
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Colorado



Local office

Colorado Ecological Services Field Office

☎ (303) 236-4773

📠 (303) 236-4005

MAILING ADDRESS

Denver Federal Center

P.O. Box 25486

Denver, CO 80225-0486

PHYSICAL ADDRESS

134 Union Boulevard, Suite 670
Lakewood, CO 80228-1807

<http://www.fws.gov/coloradoES>

<http://www.fws.gov/platteriver>

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please [contact NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

<p>Black-footed Ferret <i>Mustela nigripes</i></p> <p>This species only needs to be considered if any of the following conditions apply:</p> <ul style="list-style-type: none"> • Special incidental take provisions pursuant to Section 7 of the ESA apply to a reintroduced population of black-footed ferrets. Contact the Colorado Ecological Services Field Office for additional details. • Special incidental take provisions pursuant to Section 7 of the ESA apply to a reintroduced population of black-footed ferrets. Contact the Colorado Ecological Services Field Office for additional details. <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6953</p>	<p>Endangered</p>
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<p>Preble's Meadow Jumping Mouse <i>Zapus hudsonius preblei</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/4090</p>	<p>Threatened</p>
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Birds

NAME	STATUS
<p>Least Tern <i>Sterna antillarum</i></p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8505</p>	<p>Endangered</p>
<p>Mexican Spotted Owl <i>Strix occidentalis lucida</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8196</p>	<p>Threatened</p>
<p>Piping Plover <i>Charadrius melodus</i></p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6039</p>	<p>Threatened</p>

Whooping Crane *Grus americana*

Endangered

This species only needs to be considered if the following condition applies:

- Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/758>

Fishes

NAME	STATUS
Pallid Sturgeon <i>Scaphirhynchus albus</i> This species only needs to be considered if the following condition applies: <ul style="list-style-type: none"> • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7162	Endangered

Flowering Plants

NAME	STATUS
Colorado Butterfly Plant <i>Gaura neomexicana</i> var. <i>coloradensis</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6110	Threatened
Ute Ladies'-tresses <i>Spiranthes diluvialis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2159	Threatened
Western Prairie Fringed Orchid <i>Platanthera praeclara</i> This species only needs to be considered if the following condition applies: <ul style="list-style-type: none"> • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A
BREEDING SEASON IS INDICATED
FOR A BIRD ON YOUR LIST, THE
BIRD MAY BREED IN YOUR

PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Oct 15 to Jul 31

Buff-breasted Sandpiper *Calidris subruficollis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9488>

Breeds elsewhere

Burrowing Owl *Athene cunicularia*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9737>

Breeds Mar 15 to Aug 31

Cassin's Sparrow *Aimophila cassinii*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9512>

Breeds Aug 1 to Oct 10

Chestnut-collared Longspur *Calcarius ornatus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Aug 10

Golden Eagle *Aquila chrysaetos*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/1680>

Breeds Jan 1 to Aug 31

Lark Bunting *Calamospiza melanocorys*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds May 10 to Aug 15

<p>Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Lewis's Woodpecker <i>Melanerpes lewis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408</p>	Breeds Apr 20 to Sep 30
<p>Long-billed Curlew <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511</p>	Breeds Apr 1 to Jul 31
<p>Mccown's Longspur <i>Calcarius mccownii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9292</p>	Breeds May 1 to Aug 15
<p>Mountain Plover <i>Charadrius montanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3638</p>	Breeds Apr 15 to Aug 15
<p>Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Sprague's Pipit <i>Anthus spragueii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8964</p>	Breeds elsewhere
<p>Whimbrel <i>Numenius phaeopus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483</p>	Breeds elsewhere
<p>Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 20 to Aug 5
<p>Willow Flycatcher <i>Empidonax traillii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482</p>	Breeds May 20 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

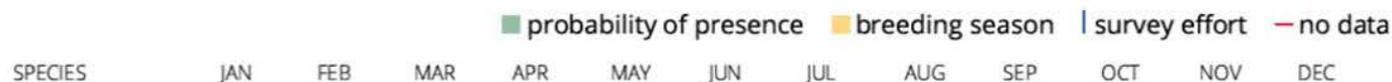
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.



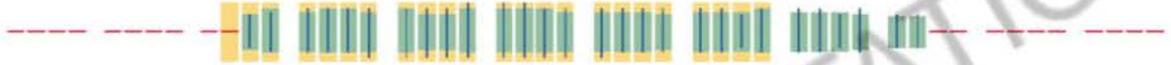
Bald Eagle
 Non-BCC Vulnerable
 (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Buff-breasted Sandpiper
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Burrowing Owl
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



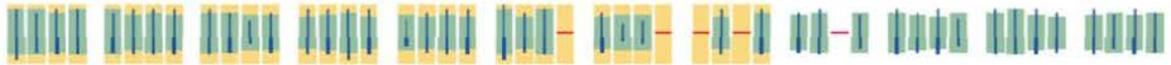
Cassin's Sparrow
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Chestnut-collared Longspur
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



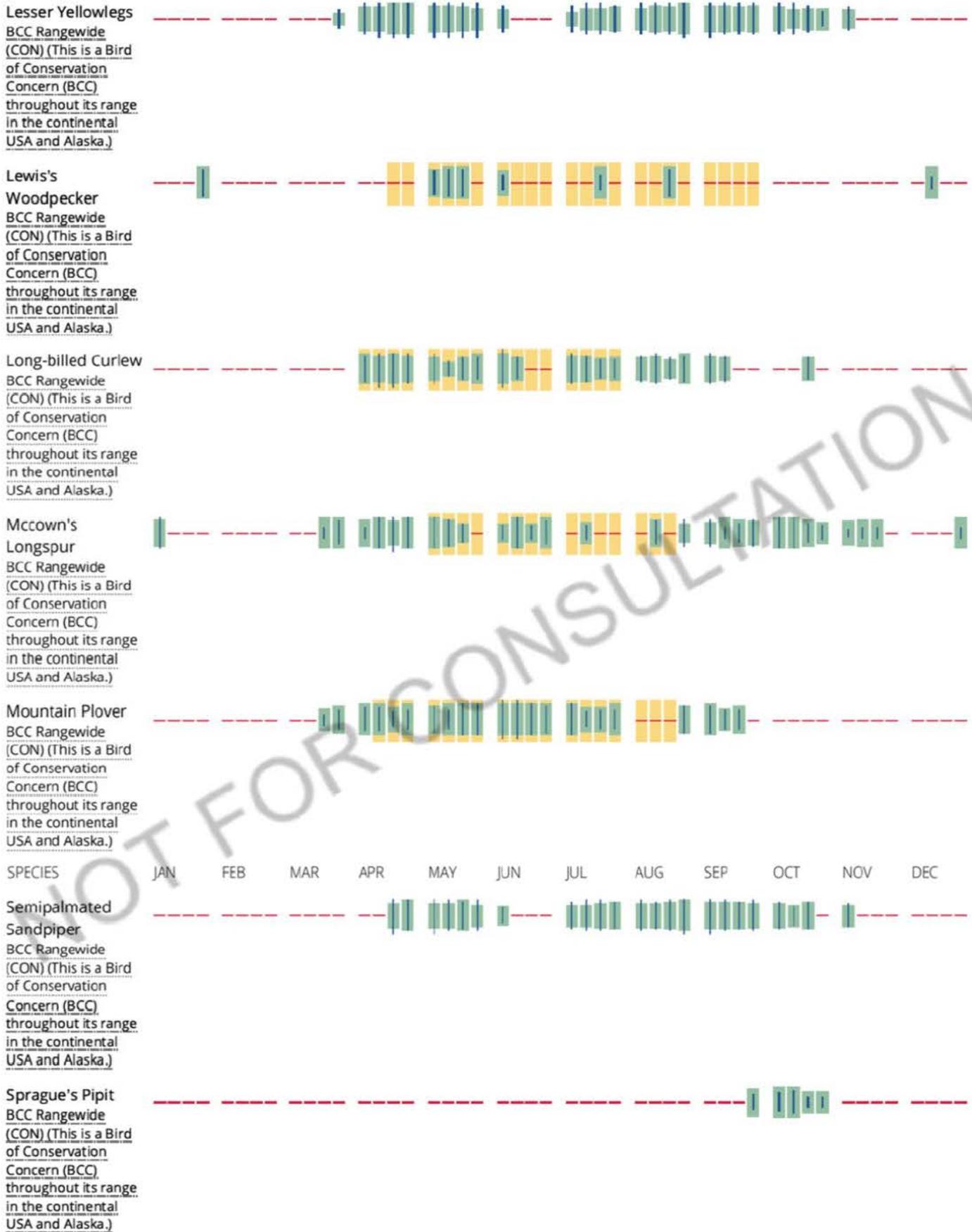
Golden Eagle
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

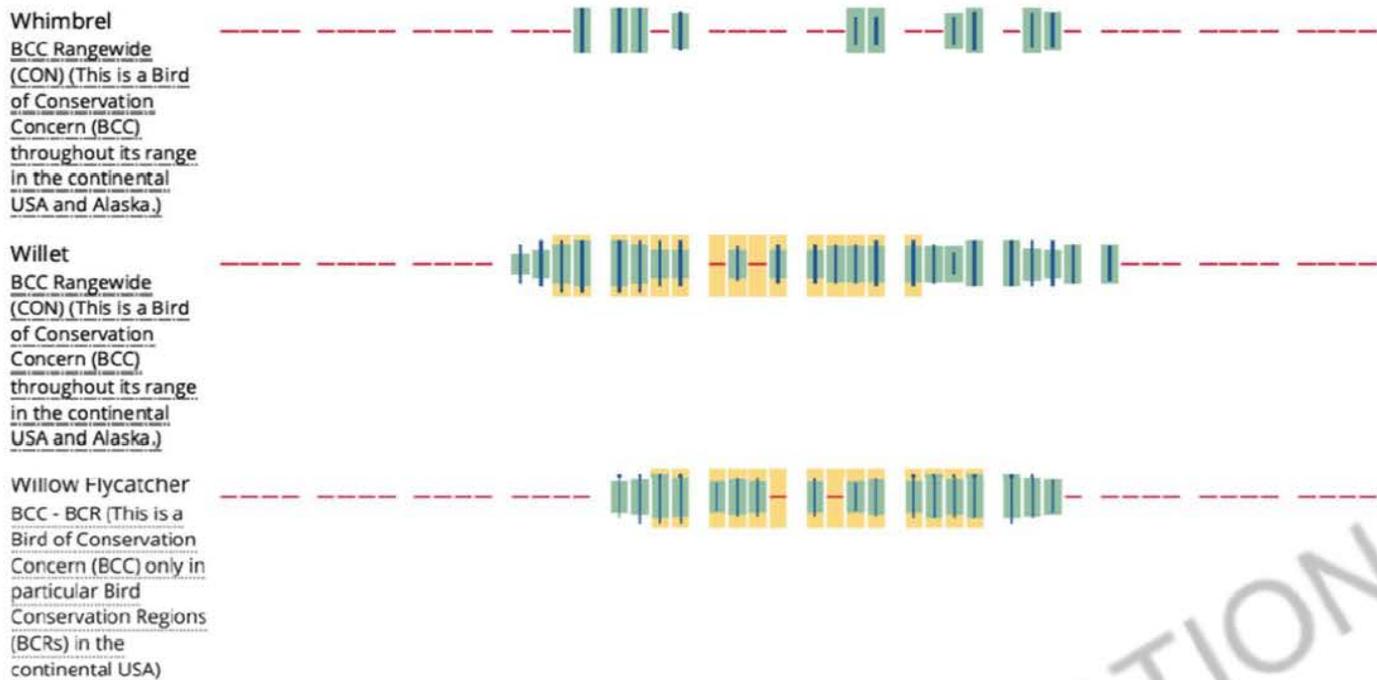


Lark Bunting
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



NOT FOR CONSULTATION





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuge lands:

LAND	ACRES
Rocky Mountain Arsenal National Wildlife Refuge	5,976.73 acres

☎ (303) 289-0232

📅 (303) 289-0579

6550 Gateway Road, Building 121
Commerce City, CO 80022-4327

<https://www.fws.gov/refuges/profiles/index.cfm?id=61170>

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

The area of this project is too large for IPaC to load all NWI wetlands in the area. The list below may be incomplete. Please contact the local U.S. Fish and Wildlife Service office or visit the [NWI map](#) for a full list.

FRESHWATER EMERGENT WETLAND

[PEMA](#)

[PEMC](#)

[PEMF](#)
[PEMJ](#)
[PEMCx](#)
[PEMFx](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PFOA](#)
[PSSC](#)
[PSS/E](#)
[PSSA](#)
[PSSF](#)
[PSS/E](#)
[PFOAH](#)
[PFOC](#)

FRESHWATER POND

[PUSA](#)
[PUSC](#)
[PUBF](#)
[PABF](#)
[PUSJ](#)
[PUBH](#)
[PUBGx](#)
[PUBFx](#)
[PABG](#)
[PABFx](#)
[PUBK](#)
[PABFh](#)
[PUBFh](#)

LAKE

[L1UBK](#)
[L1UBHh](#)
[L1UBG](#)
[L2UBK](#)
[L1UBHx](#)
[L1ABGx](#)
[L2USCx](#)

OTHER

[Pf](#)
[PUSCx](#)
[PUSCh](#)

RIVERINE

[R4SBA](#)
[R2UBF](#)
[R4SBK](#)
[R4SBC](#)
[R4SBCx](#)

[R2UBH](#)[R2UBG](#)[R4USA](#)[R4USC](#)[R2UBK](#)[R4SBJ](#)[R2UBGx](#)[R2UBHx](#)[R2UBFx](#)[R2USA](#)[R2USC](#)

A full description for each wetland code can be found at the National Wetlands Inventory website:
<https://ecos.fws.gov/ipac/wetlands/decoder>

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix C

Air Quality Emission Calculations

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Table 1. Construct Concrete Pads and Utility Trenching
Excavation and Grading

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Excavator	9	243	0.59	0.343916573	1.209231	4.029509	0.115252678	0.222805	0.216121	535.7891	1.01	3.54	11.81	0.34	0.65	0.63	1,571
Skid Steer Loader	11	160	0.23	0.383254566	1.469899	4.338389	0.115226455	0.305387	0.296225	535.67	0.35	1.33	3.92	0.10	0.28	0.27	484
Dozer (Rubber Tired)	10	145	0.59	0.376649482	1.414327	4.173502	0.115230835	0.295988	0.287108	535.6899	0.72	2.69	7.93	0.22	0.56	0.55	1,018
Scraper Hauler Excavator	10	365	0.58	0.377251546	1.419341	4.186906	0.115230447	0.296517	0.287622	535.6882	1.77	6.68	19.70	0.54	1.40	1.35	2,520
Grader	10	285	0.58	0.343799843	1.20789	4.070091	0.115252734	0.22555	0.218784	535.7895	1.24	4.35	14.65	0.41	0.81	0.79	1,929
	Cumulative Hours	Engine HP	Mi/hr	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dump Truck	143	230	16.21622	0.001521323	0.008042	0.03607	1.80437E-05	0.001504	0.001458	3.438541	3.53	18.65	83.63	0.04	3.49	3.38	7,972
Subtotal (lbs):											8.61	37.23	141.64	1.66	7.19	6.97	15,494

Asphalt Demolition

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
D-6K Crawler Dozer with attachments	387	125	0.58	0.343748951	1.207338	4.080172	0.11525279	0.226082	0.2193	535.7896	21.27	74.70	252.43	7.13	13.99	13.57	33,148
Wheel mounted air compressor excavator	387	49	0.59	0.327732244	2.541372	4.527342	0.128025612	0.541969	0.52571	595.1645	8.09	62.70	111.69	3.16	13.37	12.97	14,683
	133	380	0.59	0.312262481	2.496895	4.506766	0.128035924	0.551911	0.535354	595.2113	20.58	164.56	297.01	8.44	36.37	35.28	39,227
	Cumulative Hours	Engine HP	Mi/hr	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dump Truck	301	230	27.27273	0.001521323	0.008042	0.03607	1.80437E-05	0.001504	0.001458	3.438541	12.47	65.93	295.71	0.15	12.33	11.95	28,190
Subtotal (lbs):											49.93	301.95	661.14	18.73	63.73	61.82	87,058

Gravel work

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dozer	93	185	0.59	0.343748951	1.207338	4.080172	0.11525279	0.226082	0.2193	535.7896	7.67	26.94	91.06	2.57	5.05	4.89	11,957
Wheel Loader for Spreading	116	87	0.59	0.348718159	1.248293	4.233317	0.115249451	0.238723	0.231562	535.7745	4.57	16.38	55.53	1.51	3.13	3.04	7,029
Compactor	359	103	0.43	0.359581158	1.338734	4.451694	0.115242198	0.257088	0.249375	535.7416	12.62	46.98	156.21	4.04	9.02	8.75	18,799
	Cumulative Hours	Engine HP	Mi/hr	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dump Truck (gravel delivery)	1198	230	25.80645	0.001659503	0.008579	0.03922	1.82086E-05	0.001691	0.001642	3.382435	51.30	265.22	1212.43	0.56	52.28	50.76	104,562
Subtotal (lbs):											76.16	355.51	1515.23	8.69	69.47	67.45	142,347

Concrete work

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Concrete Mixer (3 mixers total to one truck)	733	3.5	0.43	0.687530782	3.043976	6.171448	0.126540662	0.540419	0.524207	588	1.67	7.40	15.00	0.31	1.31	1.27	1,430
Concrete Truck	662	300	0.43	0.379564776	1.745752	6.182419	0.113983813	0.268699	0.260638	530	71.51	328.89	1,164.73	21.47	50.62	49.10	99,828
Subtotal (lbs):											73.18	336.29	1,179.73	21.78	51.93	50.38	101,258

Utility Trenching

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Trenching with backhoe loader	47	87	0.59	0.348718159	1.248293	4.233317	0.115249451	0.238723	0.231562	535.7745	1.84	6.58	22.31	0.61	1.26	1.22	2,823
	Cumulative Hours	Engine HP	Mi/hr	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dump Truck	100	230	16	0.001521323	0.008042	0.03607	1.80437E-05	0.001504	0.001458	3.438541	2.48	13.11	58.78	0.03	2.45	2.38	5,604
Delivery Truck	55	265	45	0.001521323	0.008042	0.03607	1.80437E-05	0.001504	0.001458	3.438541	3.77	19.90	89.27	0.04	3.72	3.61	8,510
Subtotal (lbs):											8.08	39.59	170.36	0.68	7.43	7.20	16,937

Construct 1,500,000 gallon water tank

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Crane - Small	320	300	0.58	0.245701462	1.219507	5.259786	0.11407306	0.207722	0.20149	530.2987	60.32	299.40	1,291.32	28.01	51.00	49.47	130,193
Telescopic Handler	240	100	0.58	0.390843681	1.534084	4.489544	0.115221386	0.314187	0.304761	535.6468	23.99	94.16	275.55	7.07	19.28	18.71	32,876
	Cumulative Hours	Engine HP	Mi/hr	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Delivery Truck	10	365	60	0.001521323	0.008042	0.03607	1.80437E-05	0.001504	0.001458	3.438541	0.91	4.80	21.53	0.01	0.90	0.87	2,052
Subtotal (lbs):											85.22	398.36	1,588.40	35.09	71.18	69.04	165,121

Table 2. Concrete Pad and Water Tank Construction and Utility Trenching Totals

Emissions for Concrete Pad and Water Tank Construction and Utility Trenching	VOC Tons	CO Tons	NOx Tons	SO2 Tons	PM10 Tons	PM2.5 Tons	CO2 Metric Tons
	0.15	0.73	2.63	0.04	0.14	0.13	264

Table 3. Construct Roads/Rehab Asphalt Excavation and Grading

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Excavator	3	243	0.59	0.343916573	1.209231	4.029509	0.115252678	0.222805	0.216121	535.8	0.33	1.15	3.82	0.11	0.21	0.20	508
Skid Steer Loader	3	160	0.23	0.383254566	1.469899	4.338389	0.115226455	0.305387	0.296225	535.7	0.09	0.36	1.06	0.03	0.07	0.07	130
Dozer (Rubber Tired)	1	145	0.59	0.376649482	1.414327	4.173502	0.115230835	0.295988	0.287108	535.7	0.08	0.32	0.94	0.03	0.07	0.06	121
Scraper Hauler Excavator	1	365	0.58	0.377251546	1.419341	4.186906	0.115230447	0.296517	0.287622	535.7	0.21	0.79	2.34	0.06	0.17	0.16	299
Grader	12	285	0.58	0.343799843	1.20789	4.070091	0.115252734	0.22555	0.218784	535.8	1.47	5.16	17.38	0.49	0.96	0.93	2288
	Cumulative Hours	Engine HP	Mi/hr	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dump Truck	17	230	16	0.001521323	0.008042	0.03607	1.80437E-05	0.001504	0.001458	3.4	0.42	2.21	9.92	0.00	0.41	0.40	946
Subtotal (lbs):											2.60	9.99	35.46	0.72	1.89	1.84	4292

Asphalt Demolition

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
D-6K Crawler Dozer with attachments	968	125	0.58	0.343748951	1.207338	4.080172	0.11525279	0.226082	0.2193	535.7896	53.17	186.74	631.08	17.83	34.97	33.92	82,871
Wheel mounted air compressor	968	49	0.59	0.327732244	2.541372	4.527342	0.128025612	0.541969	0.52571	595.1645	20.21	156.74	279.23	7.90	33.43	32.42	36,707
Excavator	333	380	0.59	0.312262481	2.496895	4.506766	0.128035924	0.551911	0.535354	595.2113	51.45	411.39	742.53	21.10	90.93	88.20	98,067
	Cumulative Hours	Engine HP	Mi/hr	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dump Truck	752	230	27	0.001521323	0.008042	0.03607	1.80437E-05	0.001504	0.001458	3.4	31.18	164.82	739.27	0.37	30.83	29.88	70,475
Subtotal (lbs):											156.01	754.87	1,652.84	46.82	159.33	154.55	217,645

Gravel Work

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dozer	11	185	0.59	0.343748951	1.207338	4.080172	0.11525279	0.226082	0.2193	535.7896	0.91	3.20	10.80	0.31	0.60	0.58	1,418
Wheel Loader for Spreading	13.75	87	0.59	0.348718159	1.248293	4.233317	0.115249451	0.238723	0.231562	535.7745	0.54	1.94	6.59	0.18	0.37	0.36	834
Compactor	42.625	103	0.43	0.359581158	1.338734	4.451694	0.115242198	0.257088	0.249375	535.7416	1.50	5.57	18.53	0.48	1.07	1.04	2,230
	Cumulative Hours	Engine HP	Mi/hr	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dump Truck (gravel delivery)	142.0833333	230	26	0.001659503	0.008579	0.03922	1.82086E-05	0.001691	0.001642	3.382435	6.08	31.46	143.81	0.07	6.20	6.02	12,402
Subtotal (lbs):											9.03	42.17	179.72	1.03	8.24	8.00	16,884

Paving

Equipment	Cumulative Hours	Engine HP	Load Factor	Emission Factors							Annual Emissions						
				VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO2 g/hp-hr	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Grader	1,225	145	0.59	0.376373909	1.412138	4.161301	0.115231028	0.29569	0.286819	535.6908	86.96	326.26	961.44	26.62	68.32	66.27	123,768
Steel drum roller/vibratory roller	1,838	401	0.59	0.341353962	2.462792	5.534875	0.115254378	0.33869	0.32853	535.7968	327.16	2,360.41	5,304.79	110.46	324.61	314.87	513,524
Paving Machine	2,450	164	0.59	0.380009803	1.44251	4.252114	0.115228607	0.300003	0.291003	535.6798	198.61	753.91	2,222.30	60.22	156.79	152.09	279,965
Asphalt Curbing Machine	245	130	0.59	0.395103771	1.57032	4.565822	0.115218543	0.319111	0.309538	535.634	16.37	65.06	189.15	4.77	13.22	12.82	22,190
	Cumulative Hours	Engine HP	Mi/hr	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
Dump Truck	985	230	17	0.001659503	0.008579	0.03922	1.82086E-05	0.001691	0.001642	3.382435	27.32	141.24	645.66	0.30	27.84	27.03	55,682
Water Truck	39	230	10	0.001659503	0.008579	0.03922	1.82086E-05	0.001691	0.001642	3.382435	0.65	3.36	15.37	0.01	0.66	0.64	1,326
Hot Mix Asphalt (HMA)	Volume of HMA	Weight of HMA (tons)	Emission Factors/ton of asphalt							Annual Emissions							
Standard Hot Mix Asphalt	133,333	9667		VOC lb/ton	CO lb/ton	NOx lb/ton	SO2 lb/ton	PM10 lb/ton	PM2.5 lb/ton	CO2 lb/ton	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO2 lb
				0.04	-	-	-	-	-	-	386.67	-	-	-	-	-	-
Subtotal (lbs):											1,043.73	3,650.24	9,338.72	202.39	591.44	573.73	996,455

Table 4. Construct Road and Rehab Asphalt Totals

	VOC Tons	CO Tons	NOx Tons	SO2 Tons	PM10 Tons	PM2.5 Tons	CO2 Metric Tons
Emissions for Road & Asphalt	0.61	2.23	5.60	0.13	0.38	0.37	560

Table 5. Fugitive Dust

PM 10 tons/acre/mo	acres	days of disturbance	PM 10 Total	PM 2.5/PM 10 Ratio	PM 2.5 Total
0.42	4	180	0.945	0.1	0.0945

Table 6. 2014 Construction Totals

VOC Tons	CO Tons	NOx Tons	SO2 Tons	PM10 Tons	PM2.5 Tons	CO2 Metric Tons
0.76	2.96	8.23	0.17	1.46	0.59	824

Tab B. Concept Y RLV Launch Operational Emissions - FTG

Kerosene_{density} = 0.795 g/m³ or 6.6339294 lb/gal

¹Total mass of Kerosene consumed from launch = 2,400.00 lb
 Total gallons = 361.78

¹Mass flow of Kerosene per engine = 2.67 lb/s or 0.4024764 gal/s

Table 1. Launch Emissions - Greenhouse Gases

Launch Vehicle	Max # launches/yr	Kerosene Use gal/launch	Kerosene MMBtu/gal	² CO ₂ kg/MMBtu	³ CH ₄ kg/MMBtu	³ N ₂ O kg/MMBtu	CO ₂ kg	CH ₄ kg	N ₂ O kg	CO ₂ e MT/yr
Concept Y RLV	52	1,447.11	0.135	75.2	0.003	0.0006	763,933	30.47605551	6.0952111	766
Total CO₂e in Metric Tons per Year										766

Table 2. Static Runup Test Emissions - Greenhouse Gases

Launch Vehicle	Max # tests/yr	Duration of Test in s	Kerosene Use gal/s/engine	Total fuel per test (gal)	Kerosene MMBtu/gal	² CO ₂ kg/MMBtu	³ CH ₄ kg/MMBtu	³ N ₂ O kg/MMBtu	CO ₂ kg	CH ₄ kg	N ₂ O kg	CO ₂ e MT/yr
Concept Y RLV	208	2	0.402	3.220	0.135	75.2	0.003	0.0006	6,799	0.2712369	0.0542474	7
Total CO₂e in Metric Tons per Year												7

Table 3. Static Fire Test Emissions using Kerosene for 90% of Tests- Greenhouse Gases

Launch Vehicle	Max # tests/yr	Duration of Test in s	Kerosene Use gal/s/engine	Total fuel per test (gal)	Kerosene MMBtu/gal	² CO ₂ kg/MMBtu	³ CH ₄ kg/MMBtu	³ N ₂ O kg/MMBtu	CO ₂ kg	CH ₄ kg	N ₂ O kg	CO ₂ e MT/yr
Concept Y RLV	90	8	0.402	12.879	0.135	75.2	0.003	0.0006	11,768	0.4694485	0.0938897	12
Total CO₂e in Metric Tons per Year												12

Table 4. Static Fire Test Emissions using Methane for 10% of Tests - Greenhouse Gases^a

Launch Vehicle	Max # tests/yr	Total pounds CH ₄ used	⁵ lb CO ₂ /lb CH ₄	Emissions in lbs CO ₂
Concept Y RLV	10	214	2.75	587.40
Total Metric Tons per Year				0.29

^aIt is conservatively assumed that the same amount of methane would be combined with LOX for propellant as is required for use with kerosene and LOX.

Table 4. Launch Emissions - Criteria Pollutants

Launch Vehicle	Max # launches/yr	Total pounds kerosene used	⁴ Emission Indices in Pounds Emitted per Pound of Propellant					Emissions in Pounds				
			CO	NO _x	PM	SO _x	VOCs	CO	NO _x	PM	SO _x	VOCs
Concept Y RLV	52	124,800	0.20	0.00	0.00	0.00	0.00	24,960	0.00	0.00	0.00	0.00
Total Tons per Year								12.48	0.00	0.00	0.00	0.00

0.0341918

Table 5. Launch Emissions of CO below the mixing height (3000 feet above ground level)

Assume 50% of fuel consumed in 1st 3,000 vertical feet of launch profile

launch profile extends to 132,488 feet above ground level for engine shutoff

Total pounds kerosene used/yr	lb CO/lb kerosene	Total pounds CO	Total tons CO
62,400	0.2	12,480	6.24

Table 6. Static Fire Test Emissions Using Kerosene for 90% of Tests - Criteria Pollutants^b

Launch Vehicle	Max # test seconds/yr	Total pounds kerosene used	⁴ Emission Indices in Pounds Emitted per Pound of Propellant					Emissions in Pounds				
			CO	NO _x	PM	SO _x	VOCs	CO	NO _x	PM	SO _x	VOCs
Concept Y RLV	720	1,922	0.20	0.00	0.00	0.00	0.00	384.48	0.00	0.00	0.00	0.00
Total Tons per Year								0.19	0.00	0.00	0.00	0.00

^bNo criteria pollutants would be generated by the combustion of methane for the remaining 10% of Static Fire Tests.

Table 7. Static Runup Tests - Criteria Pollutants

Launch Vehicle	Max # tests/yr	Propellant per Test (lb)	⁴ Emission Indices in Pounds Emitted per Pound of Propellant					Emissions in Pounds				
			CO	NO _x	PM	SO _x	VOCs	CO	NO _x	PM	SO _x	VOCs
Concept Y RLV	208	5.34	0.20	0.00	0.00	0.00	0.00	222.14	0.00	0.00	0.00	0.00
Total Tons per Year								0.11	0.00	0.00	0.00	0.00

Table 8. Launch Emissions - Nitromethane⁶

26 lb/flight

Combustion Products	Mole Fractions	Molecular Weight	Weight (g/gmole)	Weight Fraction	Total Mass (lbm/launch)	X 520 launches per year	Total	
CO	0.2766	28.01	7.747566	0.439826894	11.43549925	595	0.30	Tons per Year
H2	0.22253	0.32204	0.071663561	0.004068318	0.105776266	5.50	0.00	Tons per Year
H2O	0.27631	18.015	4.97772465	0.282583869	7.347180584	382	0.19	Tons per Year
CO2	0.05648	44.01	2.4856848	0.141111547	3.668900227	191	0.09	Metric Tons per Year
N2	0.16652	14.0067	2.332395684	0.132409372	3.442643675	179	0.09	Tons per Year
SUM:	0.99844		18	1	26	1,352		

Table 9. Commuter Emissions

# vehicles	# days	¹ mi/day	⁷ VOCs lb/mi	⁷ CO lb/mi	⁷ NOx lb/mi	⁷ SO ₂ lb/mi	⁷ PM ₁₀ lb/mi	⁷ PM _{2.5} lb/mi	⁷ CO ₂ g/mi	⁸ CH ₄ g/mi	⁸ N ₂ O g/mi	VOCs lb	CO lb	NOx lb	SO ₂ lb	PM ₁₀ lb	PM _{2.5} lb	CO ₂ lb	CH ₄ lb	N ₂ O lb		
20	245	66	0.00119	0.03467	0.00486	0.00001	0.00020	0.00018	182.00	0.02	0.02	383.28	11,213.57	1,572.78	4.22	63.67	58.68	129,762	11	11		
												Tons per Year		0.19	5.61	0.79	0.00	0.03	0.03			
												Metric Tons per Year								59	0.01	0.01
																		CO2e in metric tons/year		55		

LOX Deliveries 550 gal X 520 Launches = 28,600 gal/yr /9000 gal per tanker = 3 Tanker trucks

Kerosene 307 gal X 520 Launches = 16,073 gal/yr /9000 gal per tanker = 2 Tanker trucks

Add 25% additional deliveries to cover other materials brought onsite. **5 Tanker trucks delivering propellant per year**

Table 10. Delivery Vehicle Emissions

6 total deliveries per year Roundtrip from Denver CO area = 66 miles

# vehicles	¹ mi/trip	⁷ VOCs lb/mi	⁷ CO lb/mi	⁷ NOx lb/mi	⁷ SO ₂ lb/mi	⁷ PM ₁₀ lb/mi	⁷ PM _{2.5} lb/mi	⁷ CO ₂ lb/mi	VOCs lb	CO lb	NOx lb	SO ₂ lb	PM ₁₀ lb	PM _{2.5} lb	CO ₂ lb		
6	66	1.66E-03	8.58E-03	3.92E-02	0	1.69E-03	1.64E-03	3	0.66	3.40	15.53	0.01	0.67	0.65	3		
									Tons per Year		0.00	0.00	0.01	0.00	0.00	0.00	
									Metric Tons per Year							0.0	
															CO2e in metric tons/year		0.0

Table 11. 2018 Annual Operational Emissions Summary

Activity	VOCs T/yr	CO T/yr	NOx T/yr	SO2 T/yr	PM10 T/yr	PM2.5 T/yr	CO2e MT/yr
52 Launches	0.00	6.65	0.00	0.00	0.00	0.00	773
100 Static Fire Tests	0.00	0.19	0.00	0.00	0.00	0.00	12
Commuter/Delivery Emissions	0.19	5.61	0.79	0.00	0.03	0.03	55
Total	0.19	12.45	0.79	0.00	0.03	0.03	840

NOTES:

- ¹Information provided via email from Stephen Matier, April 23, 2013
- ²CO₂ emission index from Federal Greenhouse Gas Accounting and Reporting Guidance: Technical Support Document (CEQ. 2010), Table D-1
- ³CH₄ and N₂O emission indices from Federal Greenhouse Gas Accounting and Reporting Guidance: Technical Support Document (CEQ. 2010), Table D-2
- ⁴Emission Indices from Table D-7 of Final Programmatic Environmental Impact Statement for Streamlining the Processing of Experimental Permit Applications, FAA, September 2009
- ⁵Combustion of methane from <http://cdiac.ornl.gov/pns/faq.html>
- ⁶Nitromethane combustion products data from *Combustion Characteristics and Flame Structure of Nitromethane Liquid Monopropellant*, J. Eric Boyer, 2005.
- ⁷VOC, CO, NOx, SO₂, PM and CO₂ emission indices from MOVES, EPA 2010.
- ⁸CH₄ and N₂O emission indices from Federal Greenhouse Gas Accounting and Reporting Guidance: Technical Support Document (CEQ. 2010), Table D-12

TAB C. CONSTRUCTION SUMMARY BY PROJECT

Project Name	FootPrint (AC)	Grading (sf)	Demo asphalt/ concrete (SF)	Site Prep - Excavate/Fill (CY)	Trenching (LF)	Paving - Surface area (SF)	Paving - HMA (CF)	Gravel Work (CY)	Concrete Work (CY)
CONSTRUCTION PROJECTS - 2014									
Trenching for Utilities	0.51	N/A	N/A	N/A	22,000	N/A	N/A	N/A	N/A
Mission Prep Area Concrete Pads	5.1	220,000	160,000	4,074	N/A	N/A	N/A	8,148	12,222
Static fire test pad	0.01	400	N/A	7	N/A	N/A	N/A	15	22
Storage Tank Pads	0.69	30,000	N/A	556	N/A	N/A	N/A	1,111	1,667
Total for concrete pads	5.75	250,400	160,000	4,637	N/A	N/A	N/A	9,274	13,911
Tank Resupply Road & Paving Rehab	9.9	29,700	400,000	550	N/A	400,000	133,333	1,100	N/A
TOTALS	16.1	280,100	560,000	5,187	22,000	400,000	133,333	10,374	13,911

- 15000 gal tank of LOX
- 800 gal tank of H2
- 10000 gal tank of CH4
- 10000 gal tank of kerosene
- 5-55 gal drums of nitromethane
- 40-55 gal drums of kerosene
- 1,500,000 gal water

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Appendix D

Front Range Noise Analysis

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Spaceport Colorado Noise Study Report

March, 2018

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1. Introduction

The Board of County Commissioners (the BOCC) of Adams County, Colorado proposes to operate a commercial space launch site, called “Spaceport Colorado”, at the Front Range Airport (FTG), located in Watkins, Colorado (Figure 1). FTG is located just east-southeast of Denver International Airport (DEN), with a distance of just under 5 statute miles from the westernmost runway end at FTG to the southeastern most existing runway end at DEN. The Adams County BOCC would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs).

To operate a commercial space launch site, the Adams County BOCC must obtain a launch site operator license (LSOL) from the Federal Aviation Administration (FAA). The FAA is preparing a Programmatic EA for this action. This noise report was prepared to determine if the Proposed Action would result in a significant noise impact, per FAA Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures* (FAA Order 1050).

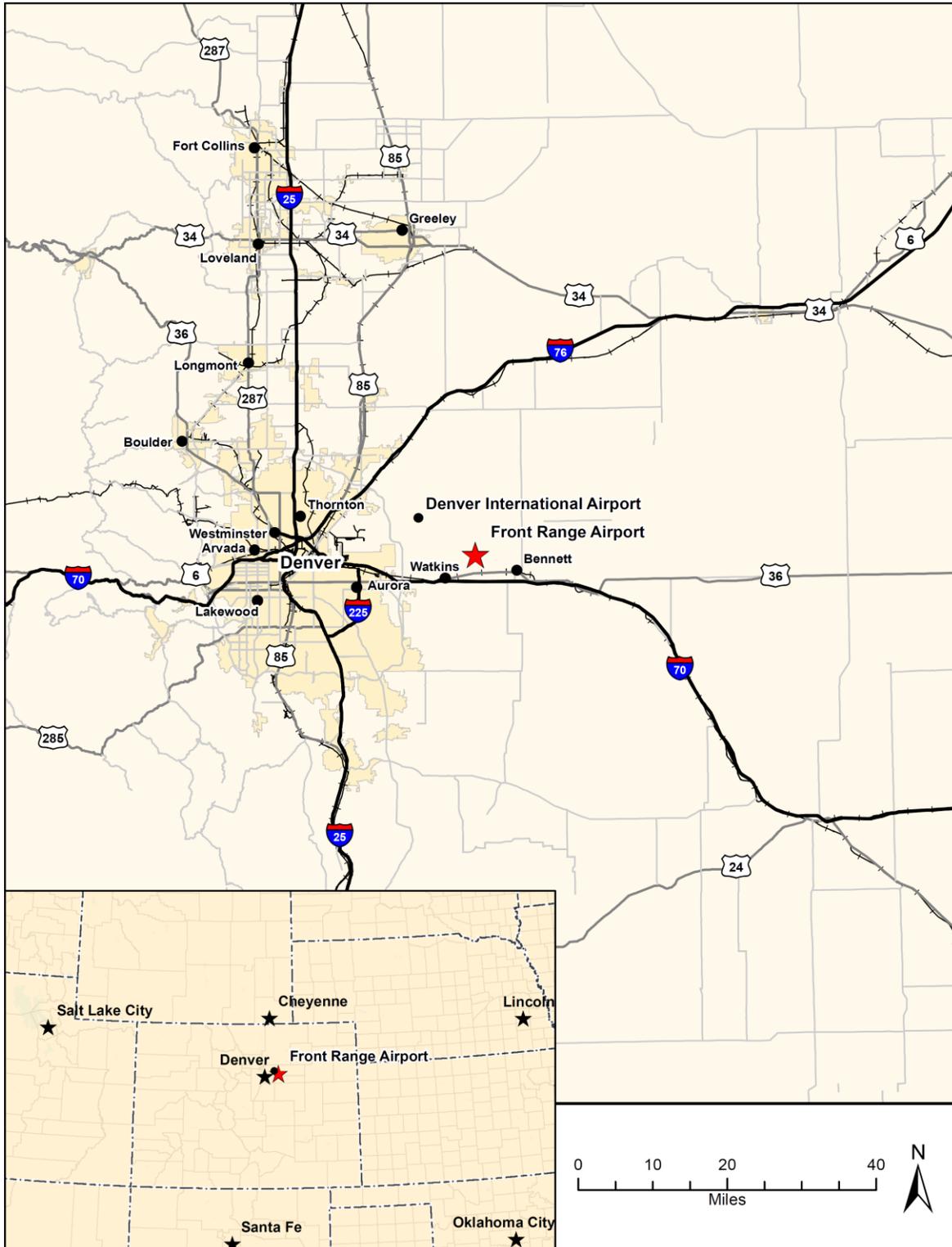


Figure 1. Regional Location of Front Range Airport

The conceptual horizontal launch vehicle analyzed in this study is the RocketPlane, shown in Figure 2.



Figure 2. RocketPlane

This study analyzes the noise effects of vehicle launches, in terms of jet powered take offs and landings, as well as the rocket engine powered portions of flights, and sonic booms generated by the vehicle at velocities more than Mach 1.

Section 2 discusses noise metrics and criteria, Section 3 describes the general methodology of launch noise and sonic boom analysis, Section 4 provides the inputs to the modeling, and Section 5 presents the results of the analysis.

2. Noise Metrics and Criteria

2.1 Noise Metrics

Noise is defined as unwanted sound that interferes with human activities or wildlife behavior. Noise sources can be steady-state (constant) or transient. An example of a constant noise is the noise of a fan. A sonic boom is an example of a very short transient noise event. Human perception of noise depends on a number of factors including overall noise level, number of noise events, the extent of audibility above the background ambient noise level, and frequency content. Frequency content refers to pitch. Rocket noise generally has low frequency content which can be described as a low pitch rumble.

Sound is measured in terms of the decibel (dB), which is the ratio between the sound pressure of the sound source and 20 micropascals (μPa), which is nominally the threshold of human hearing. Various weighting schemes have been developed to collapse a frequency spectrum into a single dB value. The A-weighted decibel (dBA) corresponds to human hearing accounting for the

higher sensitivity in the mid-range frequencies. Another sound level weighting is the C-weighted scale (dBC) which emphasizes low frequency sounds, such as sonic booms.

Launch noise is a transient noise event initially at a high sound pressure level which then recedes into the background noise level as the rocket climbs in altitude. The Sound Exposure Level (SEL) is a noise metric applicable to launch noise. The SEL normalizes the acoustic energy of a launch event as if it occurred in one second. The SEL allows an “apples to apples” comparison between two different noise events which may have different durations and magnitudes.

Other noise metrics used in launch noise analysis include OASPL (Overall Sound Pressure Level) which can also be used to express an un-weighted linear value (dB). L_{\max} refers to the maximum level that occurs during a noise time history sequence.

Sonic booms are typically measured in pounds per square foot (psf) for comparison with building structural damage criteria.

2.2 Noise Criteria

2.2.1 Human Annoyance

Past and present research by the Federal Interagency Committee on Noise (FICON) verified that the DNL metric provides an excellent correlation between the noise level an aircraft generates and community annoyance to that noise level. The Day Night Average Sound Level (DNL) is a 24-hour average of noise levels with a 10 dB penalty for noise occurring at night. This adjustment is made to account for people’s greater sensitivity to noise during nighttime hours (between 10 p.m. and 7 a.m.). DNL can be calculated on the basis of SEL and the number of daytime and nighttime noise events.

Per FAA Order 1050, a significant noise impact would occur if analysis shows that the Proposed Action would cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the No Action Alternative for the same timeframe.

2.2.2 Hearing Conservation

In terms of hearing conservation, the Occupational Safety and Health Administration (OSHA) set a limit of 115 dBA¹ for short exposure periods (less than 15 minutes).

2.2.3 Structural Damage

Rocket Noise

Structural damage due to rocket engine noise is extremely rare. The reasons for this include the fact that airborne sound pressure levels must be extremely high to induce vibration levels high enough to cause damage. Glass windows and particularly fragile windows would be the most

likely candidate for structural damage if it did occur. Table 5.3² shows that window damage may occur at sound pressure levels of 150 dB (linear) or higher. Such high sound pressure levels would only be possible for residential locations in very close proximity to large rockets.

Air Overpressure Threshold Scale^[1,7]		
dB (lin)	Categorisation	Source
180 ^[6]	Onset of structural damage	BS 6472, BS 5228
171 ^[5]	General window breakage	USBM [34]
170	Most windows crack	BS 6472, BS 5228
160	Cracking of pre-stressed or poorly mounted windows	BS 6472, BS 5228
151 ^[4]	Some window breakage	USBM [41]
150	Pre-stressed or poorly mounted windows may crack	BS 6472, BS 5228
140 ^[3]	Reasonable threshold to prevent glass and plaster damage	USBM [34]
134 ^[2]	USBM 'Safe' maximum	USBM [34]
120	Secondary vibration effects including rattling windows and objects	BS 6472, BS 5228, USBM [34]
<120	No material effect	-

TABLE 5.3: AIR OVERPRESSURE THRESHOLDS FOR DAMAGE EFFECTS ON BUILDING STRUCTURE

Notes:

[1] – Compendium of advised thresholds from BSi and USBM sources.

[2] – USBM [34]. Level based on measurements with high pass filtering at 0.1 Hz. Precautionary advice for design of blasting, pre-supposes groundborne vibration components. Not recognised by BSi. Included for information.

[3] – USBM [34] – 'Despite the widely varied source characteristics, assumptions of damage probabilities and experimental design, and also the differing interpretations among the studies, there is a consensus that damage becomes improbable below approximately 140 dB'.

[4] – Perkins and Jackson (as cited in USBM [42]) – damage thresholds for 'poorly mounted glass under stress'

[5] – USBM [34] – 'Damage to properly mounted glass is reported to have occurred at overpressures of 170 dB to 172 dB, while none was observed at 167 dB to 168 dB'. Mean value of 171 adopted.

[6] – BS 6472 -2. 'Structural damage would not be expected at air overpressure levels below 180 dB(lin)'.

[7] – Shaded entries originate from primary sources of information and are recommended for application to the main study.

Modern frequency-based structural damage criteria such as promulgated in the DIN 4150 standard³ and shown in Figure 2.2.3 are useful to assess potential structural effects on commercial, residential, and sensitive structures. Recent studies by Garg et al⁴ have developed empirically-based methods to predict the airborne sound induced vibration effects on various building elements such as floors and walls. These methods can be used to calculate induced-vibration levels in buildings based on rocket noise spectra, for comparison with the DIN 4150 standard. Such frequency-based methods are useful for the specific requirements of launch

vehicle noise where the low-frequency content may not be completely accounted for by using single value linear values (i.e., dB).

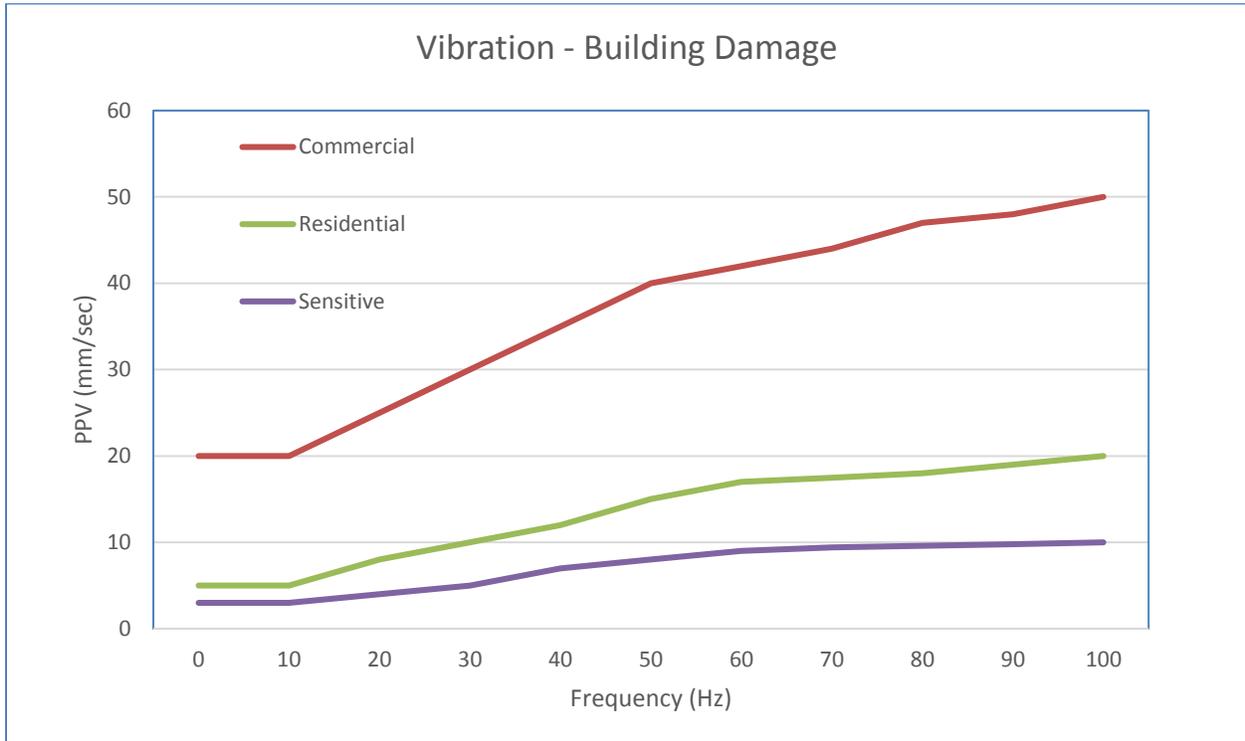


Figure 2.2.3. DIN 4150 Building Vibration Standard

Sonic Booms

A sonic boom can cause building damage, in terms of glass breakage and other effects, if the magnitude is great enough. However, in most cases, the potential for sonic booms to damage structures is extremely small. At 1 psf, the probability of a window breaking ranges from one in a billion⁵ to one in a million⁶. At 10 psf, the probability of breakage is between one in a hundred and one in a thousand.⁷ In general, the threshold for building damage due to sonic booms is 2 psf⁷, below which damage is unlikely.

The following Table 2.2.3⁷ shows possible types of building damage at increasing sonic boom psf values.

Sonic Boom Peak Overpressure (pounds per square inch)	Item Affected	Type of Damage
0.5 - 2	Cracks in Plaster	Fine; extension of existing; more in ceilings; over door frames; between some plaster boards.
	Cracks in Glass	Rarely shattered; either partial or extension of existing.
	Damage to Roof	Slippage of existing loose tiles/slates; sometimes new cracking of old slates at nail hole.
	Damage to Outside Walls	Existing cracks in stucco extended.
	Bric-a-brac	Those carefully balanced or on edges can fall; fine glass (e.g., large goblets).
	Other	Dust falls in chimneys.
2 - 4	Glass, plaster, roof, ceilings	Failures show that would have been difficult to forecast; nominally in good condition.
4 - 10	Glass	Regular failures within a population of well-installed glass; industrial as well as domestic; green houses; ships; oil rigs.
	Plaster	Partial ceiling collapse of good plaster; complete collapse of very new, incompletely cured, or very old plaster.
	Roofs	High-probability rate of failure in nominally good slate, slurry-wash; some chance of failures in tiles on modern roofs; light roofs (bungalow) or large area can bodily move.
	Walls (outside)	Old, free-standing walls in fairly good condition can collapse.
	Walls (inside)	"Party" walls known to move at 10 pounds per square inch.

Greater than 10	Glass	Some good glass will fail regularly to sonic booms from the same direction; glass with existing faults could shatter and fly; large window frames move.
	Plaster	Most plaster affected.
	Ceilings	Plaster boards displaced by nail popping.
	Roofs	Most slate/slurry roofs affected, some badly; large roofs having good tile can be affected; some roofs bodily displaced causing gable-end and wall-plate cracks; chimneys damaged if not in good condition.
	Walls	Internal party walls can move even if carrying fittings such as hand basins or taps; secondary damage due to water leakage.
	Bric-a-brac	Some nominally secure items can fall (e.g., large pictures; especially if fixed to party walls).

Table 2.2.3 Possible Building Damage Due to Sonic Booms of Increasing Magnitude

3. Launch Noise Modeling

The RocketPlane conceptual vehicle analyzed in this study takes off under jet engine power and subsequently is powered by its rocket engine once the vehicle is at a sufficient altitude. The jet engine noise analysis was performed by using USAF’s NOISEMAP computer model and the rocket engine portion of the flight was analyzed using FAA’s Launch Noise Model (LNM). The following section discusses the modeling algorithms used in LNM.

3.1 Distributed Source Method

LNM is based on Eldred’s Distributed Source Method 1 (DSM-1) reported in NASA SP-8072⁸. The noise level at a specific listener location depends on the vehicle specific sound power level and the distance between the listener and rocket. Sound power level is a measure of the overall acoustic energy of the launch vehicle. The DSM-1 method determines the launch vehicle’s total sound power level based on its total thrust and exhaust velocity.

For launch vehicles with multiple engines, the DSM-1 method computes an effective exit diameter and total thrust for the vehicle. The modeled noise source comprises a range of frequencies, each of which contains a portion of the total sound power. “Distributed Source Method” refers to the fact that noise generated along the rocket plume can be modeled as

separate frequency-dependent sources distributed along the rocket plume. The Eldred model was originally developed to evaluate near-field or mid-field structural concerns on launch facilities. However, in the far field where the rocket plume would be relatively small compared to the distances of concern, the distributed sources can be modeled as a single compact noise source. Noise contours generated by LNM for NEPA analyses are in this far field category.

3.2 Atmospheric Absorption

The atmosphere absorbs sound and this mechanism is a function of several variables including humidity, temperature, and air pressure. High frequencies are attenuated more than low frequencies. Consequently, low frequency sound of rockets can propagate through the atmosphere for greater distances than high frequency sounds. The total attenuation provided by atmospheric absorption can be considerable over long distances.

LNM employs the equations detailed in ISO 9613⁹ and ANSI S1.26¹⁰ to calculate atmospheric absorption as a function of 1/3 octave band frequency.

3.3 Ground Interference

A sound source such as a rocket on its trajectory has two ray paths to an observer location, a direct path and a reflected path from the ground, both combining at the observer location (as shown in Figure 3.3). If the ground is soft, the total combined noise level can be reduced somewhat, whereas if the surface is hard (for example, water), the total combined noise level can be increased somewhat. These acoustical interactions are complex, including interference at specific frequencies due to a phase shift of the reflected acoustic ray.

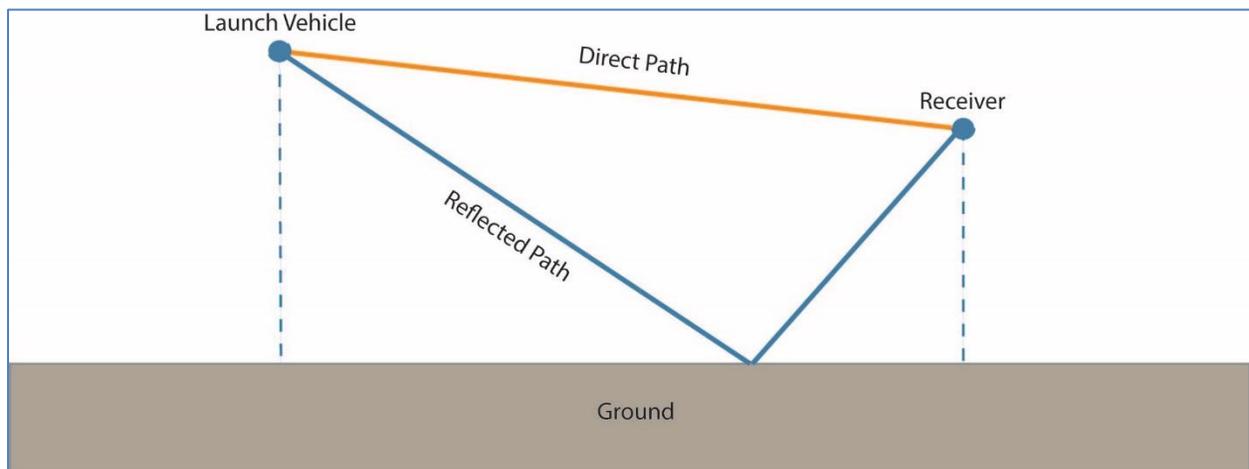


Figure 3.3 Ground Interference Acoustical Paths

The ground interference equations in references 11 to 26 are incorporated into LNM. Ground surfaces and water bodies with associated flow resistivity values can be input into LNM according to a user-specified grid system.

3.4 Acoustic Efficiency

The acoustic efficiency of a rocket engine refers to how much mechanical energy is converted to sound. Smaller rockets typically have lower acoustic efficiency than larger rockets. Figure 3.4 shows the relationship between acoustic efficiency²⁷ and the launch vehicle mechanical power (in watts). LNM calculates the acoustic efficiency based on this relationship.

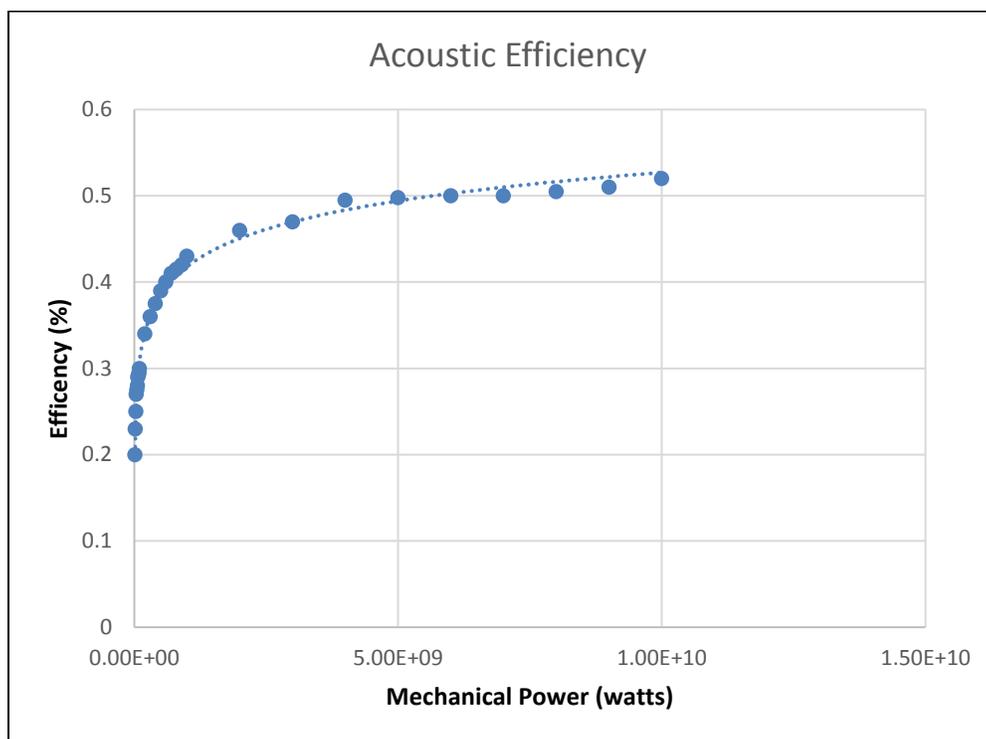


Figure 3.4 Acoustical Efficiency of Rocket Engines

3.5 Directivity

Rocket engine/plume generated noise is highly directive. The frequency content of the rocket noise is dependent upon the angle of orientation between the rocket plume and listener location. In 2009, NASA's Project Constellation²⁸ updated the rocket engine directivity data originally included in Eldred's methodology. Figure 3.5 shows the results of this data collection effort which greatly improved the accuracy and range of angles between the source and listener location. LNM calculates directivity based on these improved directivity data.

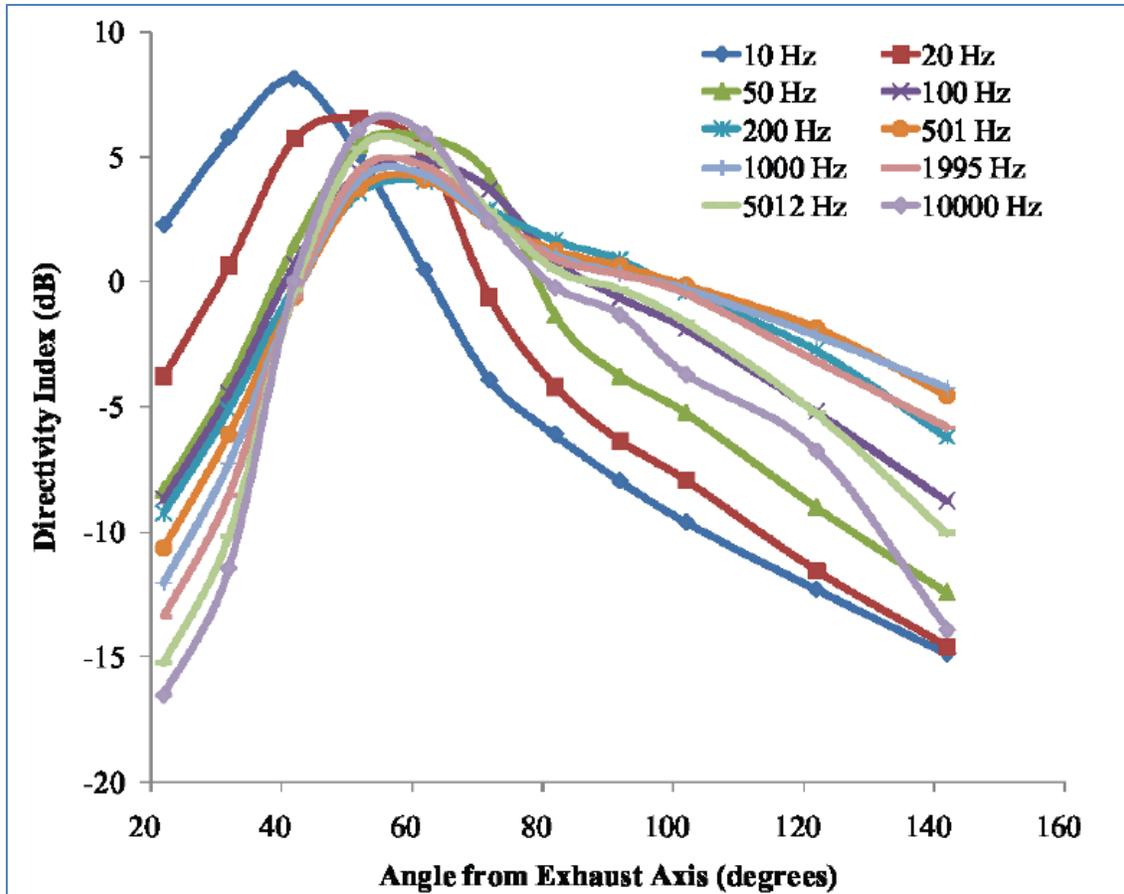


Figure 3.5 NASA Project Constellation Updated Directivity Data

3.6 Doppler Shift

Doppler shift refers to the effect of a moving sound source either coming toward or moving away from an observer. The frequency of the sound will increase when the sound source approaches the observer and will decrease when moving away from the observer. A common example is the sound of a siren changing in frequency or pitch as the vehicle passes by an observer.

As a launch vehicle ascends away from an observer, the doppler shift would result in a downward shift of the launch noise frequencies. As a result, the A-weighted noise level would also decrease since A-weighting de-emphasizes low frequencies. LNM includes algorithms to calculate the doppler shift.

3.7 Jet Noise Modeling

The RocketPlane takes off and lands horizontally under jet engine power, using two J85 (with afterburner) jet engines. The appropriate FAA-approved noise model for analyzing takeoffs and landings for this launch vehicle is USAF's NOISEMAP computer program since the F-5 military jet has this same engine configuration and is of similar size and thrust. Departure and arrival

profiles, number of operations, and other data are used to generate airfield noise contours which are displayed in the companion program NMPlot.

RocketPlane airfield noise contours are then logarithmically added to the Integrated Noise Model (INM) commercial aviation baseline data to determine whether a 1.5 dBA increase would occur due to RocketPlane launches.

3.8 Static Engine Testing

The Polaris AR-36 rocket engine would be tested periodically at a static engine test pad at the airfield. LNM was used to perform this analysis.

3.9 Sonic Boom Modeling

The FAA-approved sonic boom computer program PCBOOM was used to generate psf contours at ground level. For many commercial space launches such as this one, the launch vehicle's orientation upward during ascent results in no sonic boom impinging on the earth. In this case, the vehicle generates sonic booms during descent which do impinge on the earth.

4. Spaceport Colorado Modeling Input

4.1 Vehicle Modeling Parameters

Figure 4.1 shows the RocketPlane dimensions, jet and rocket engine thrust values and other data needed for input to the noise models. The Polaris rocket engine nozzle is 36" in diameter. Rocket engine exhaust velocity is calculated¹ to be 2999 meters/second.

¹ ISP=306 seconds, $V_e = ISP \times g = 2999$ m/sec

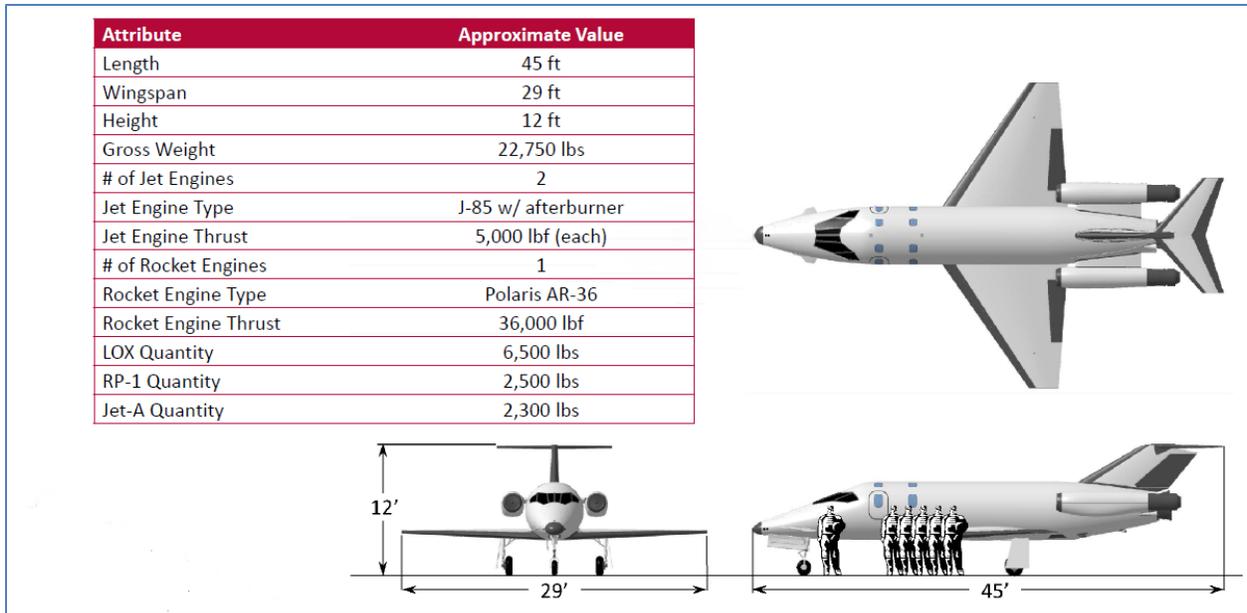


Figure 4.1 RocketPlane Data

4.2 Flight Trajectory Data

Figures 4.2 and 4.3 show plan and profile views of the RocketPlane Trajectory.

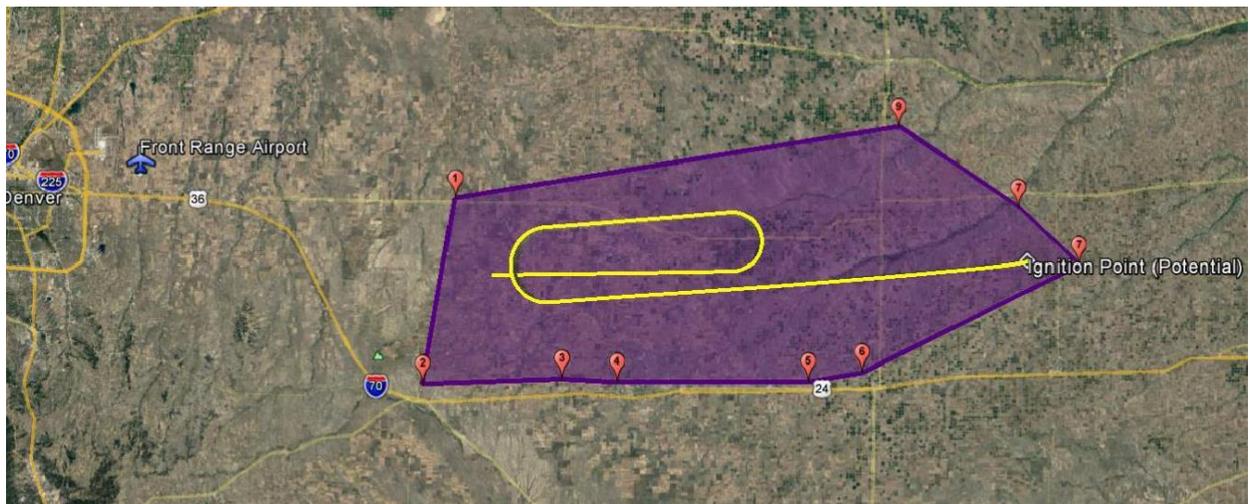


Figure 4.2 Plan View of RocketPlane Trajectory

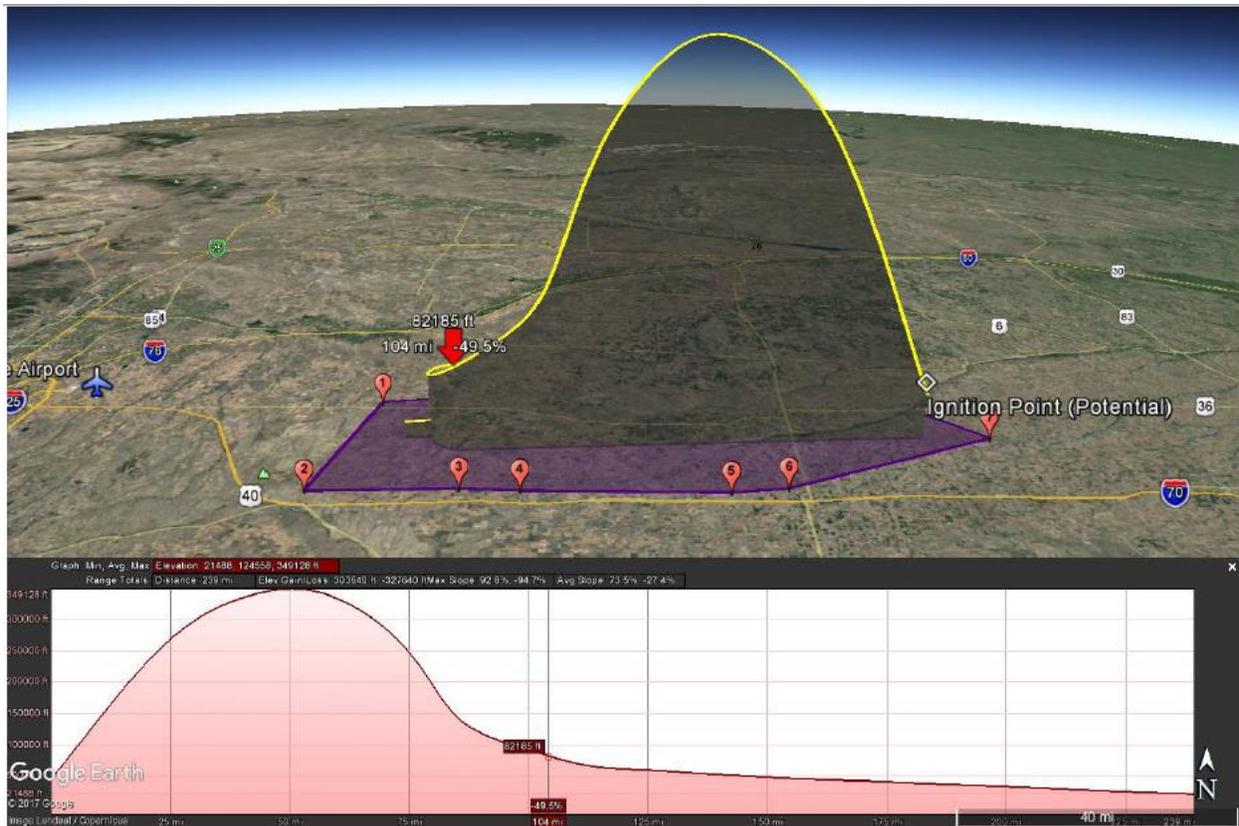


Figure 4.3 Profile View of RocketPlane Trajectory

A trajectory file “FTG Mapped Flight Path” was provided for the analysis and includes such variables as vehicle velocity, downrange distance, altitude, heading, and latitude/longitude for every second of the launch sequence. The data indicates that the RocketPlane would transition from Mach 1 to below Mach 1 twice during descent, once at 59,000 feet and again at 51,000 feet.

4.3 Operational Data

The number of planned launches is 52 launches per year and no nighttime launches are anticipated.

4.4 Baseline Commercial Aviation Noise Contours

Figure 4.4 shows the 2015²⁹ No Action 65 DNL Noise Contours which serve as the baseline noise environment for the project area. These noise contours were generated using INM-modeled commercial aviation operations, departure and arrival profiles, and fleet mix.

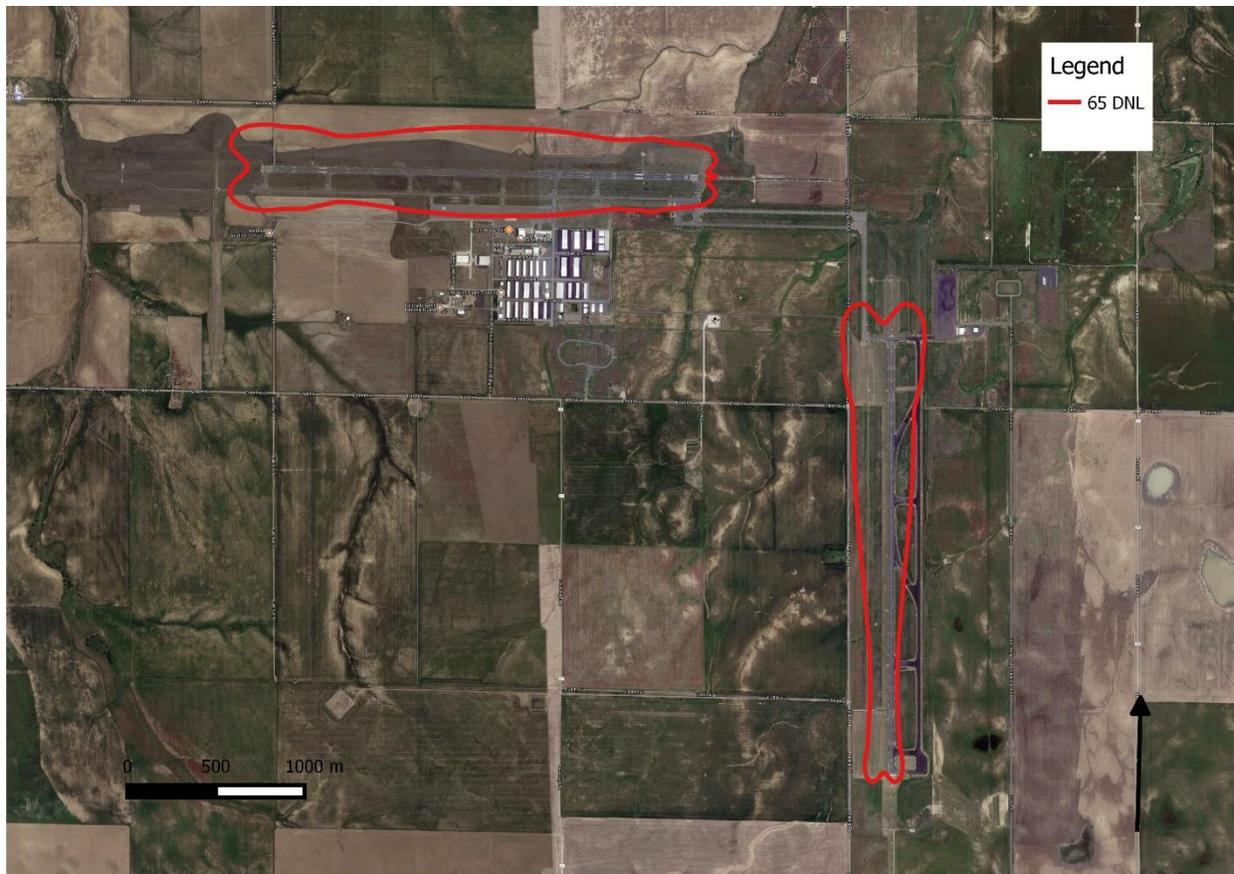


Figure 4.4 2015 No Action 65 DNL Noise Contours

5. Results

The following sections present the study results and findings in terms of RocketPlane jet noise for departures and arrivals, RocketPlane rocket engine noise, static rocket engine tests, and sonic boom impacts.

5.1 Rocket Engine Launch Noise

Because the rocket engine would be ignited at 45,000 feet, rocket engine noise at ground level would be minimal. The rocket engine powered portion of the flight was modeled using LNM and the resulting noise contours are shown in Figure 5.1. DNL noise contours at such low levels essentially are non-existent. Instead L_{max} (dBA) contours, with the outermost contour line at 52 (52-55) dBA are shown. These non-criteria-based levels however do indicate that rocket engine noise would likely be audible in these areas since these noise levels would likely be above typical ambient noise levels. These noise levels are far below FAA significance criteria and well below any conventional human noise annoyance standard.

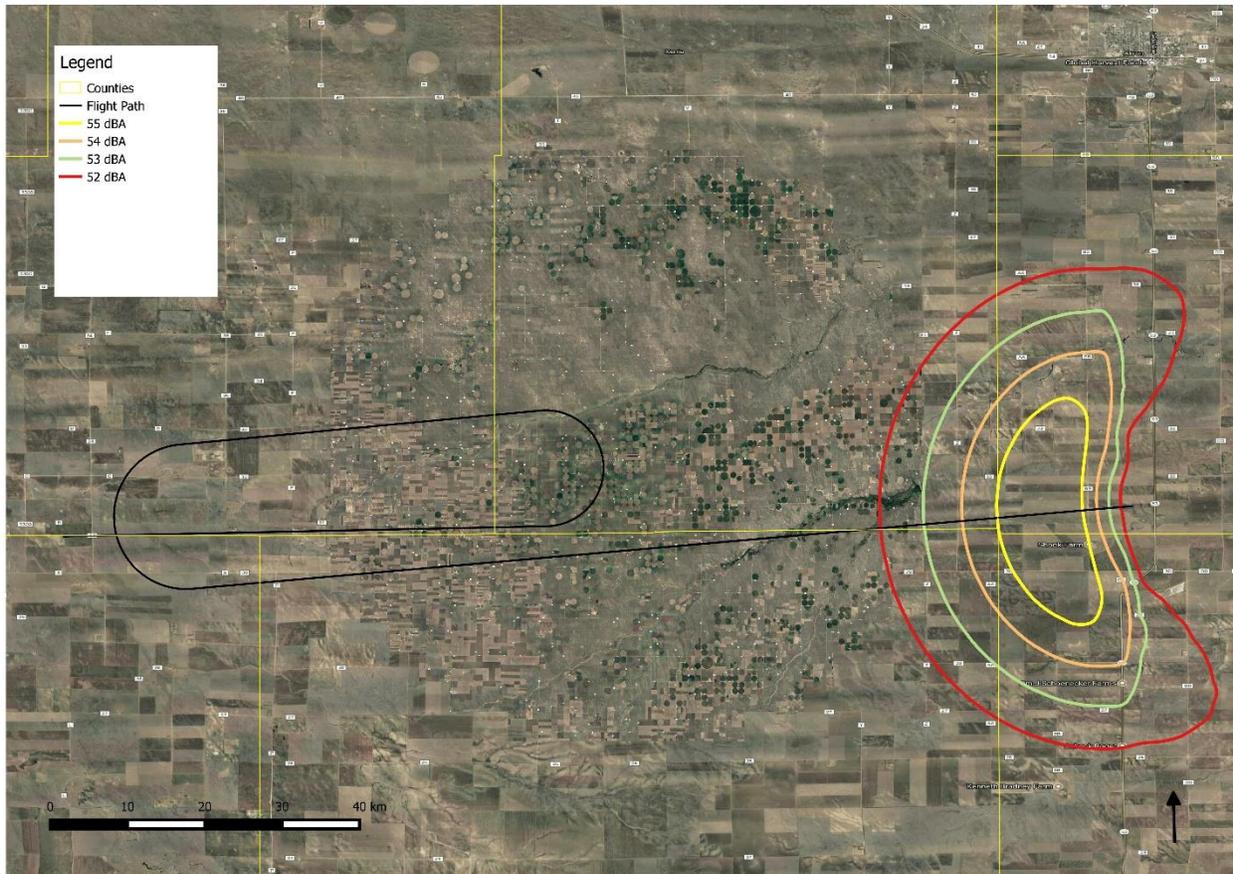


Figure 5.1 Rocket Engine Noise at 52-55 dBA (L_{max})

5.2 Jet Engine Departure and Arrival Noise

The RocketPlane takes off and lands horizontally under jet engine power, using two J85 (with afterburner) jet engines. USAF's NOISEMAP computer program was utilized to model the RocketPlane since the F-5 military jet has this same engine configuration and is of similar size and thrust. F-5 departure and arrival profiles and 52 flights per year were modeled. Figure 5.2 shows the 65 DNL contours generated by NOISEMAP. The 65 DNL contours are entirely within airport property and barely extend beyond the runway which is primarily driven by the low number of annual operations.

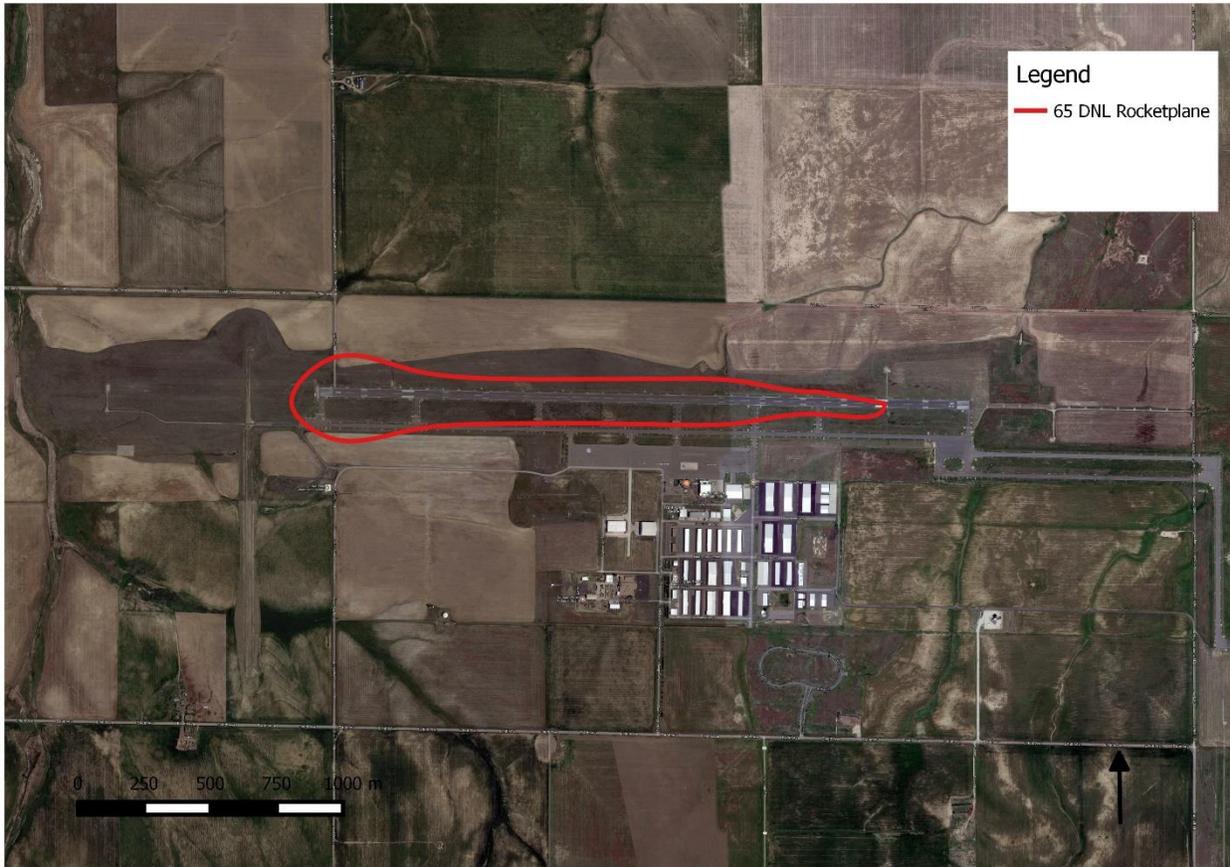


Figure 5.2 RocketPlane Airfield 65 DNL Contours

5.3 Proposed Action 65 DNL Contours

Using NMPlot, the RocketPlane airfield noise contours were logarithmically added to the INM baseline contours shown in Figure 4.4. The resulting composite noise contour with the static engine testing is shown in Figure 5.3. The only differences between this figure and Figure 4.4 are the static engine contours and the slight bulge at the eastern part of the runway. This does not comprise a significant noise impact since all 65 DNL contours are on airport property and the increase is less than 1.5 dBA.

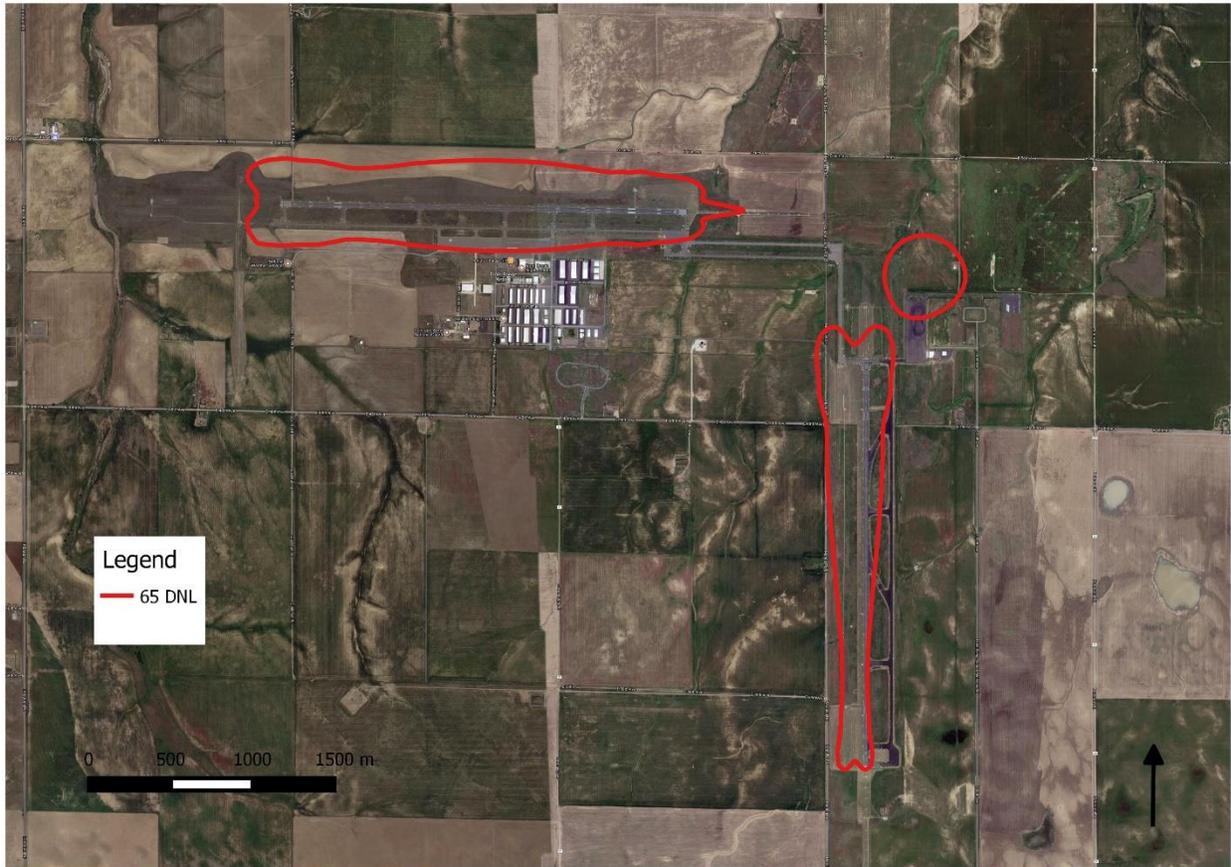


Figure 5.3 Proposed Action 65 DNL Contours (Baseline + RocketPlane + Static Engine Testing)

5.4 Sonic Boom Footprint

PCBOOM sonic boom modeling software was utilized to generate the descent sonic boom footprint. As the RocketPlane descends and turns, it transitions from Mach 1 to below Mach 1 twice, once at 59,000 feet and again at 51,000 feet. As a result, the sonic boom footprint is spread over a relatively large area, but at relatively low psf values. Figure 5.4 shows the resulting sonic boom footprint. The sonic boom footprint ranges from 0.2 psf to 0.7 psf with the 0.7 psf value (in red) occurring in a relatively small area.

These psf values are well below the 2 psf building damage threshold, and therefore building damage would be extremely unlikely. At 52 sonic booms per year, the 0.7 psf contour is approximately equivalent to CDNL 41 which is substantially lower than FAA’s significance criteria. However, sonic booms of this magnitude would be very noticeable and would be similar to the sound of distant thunder.

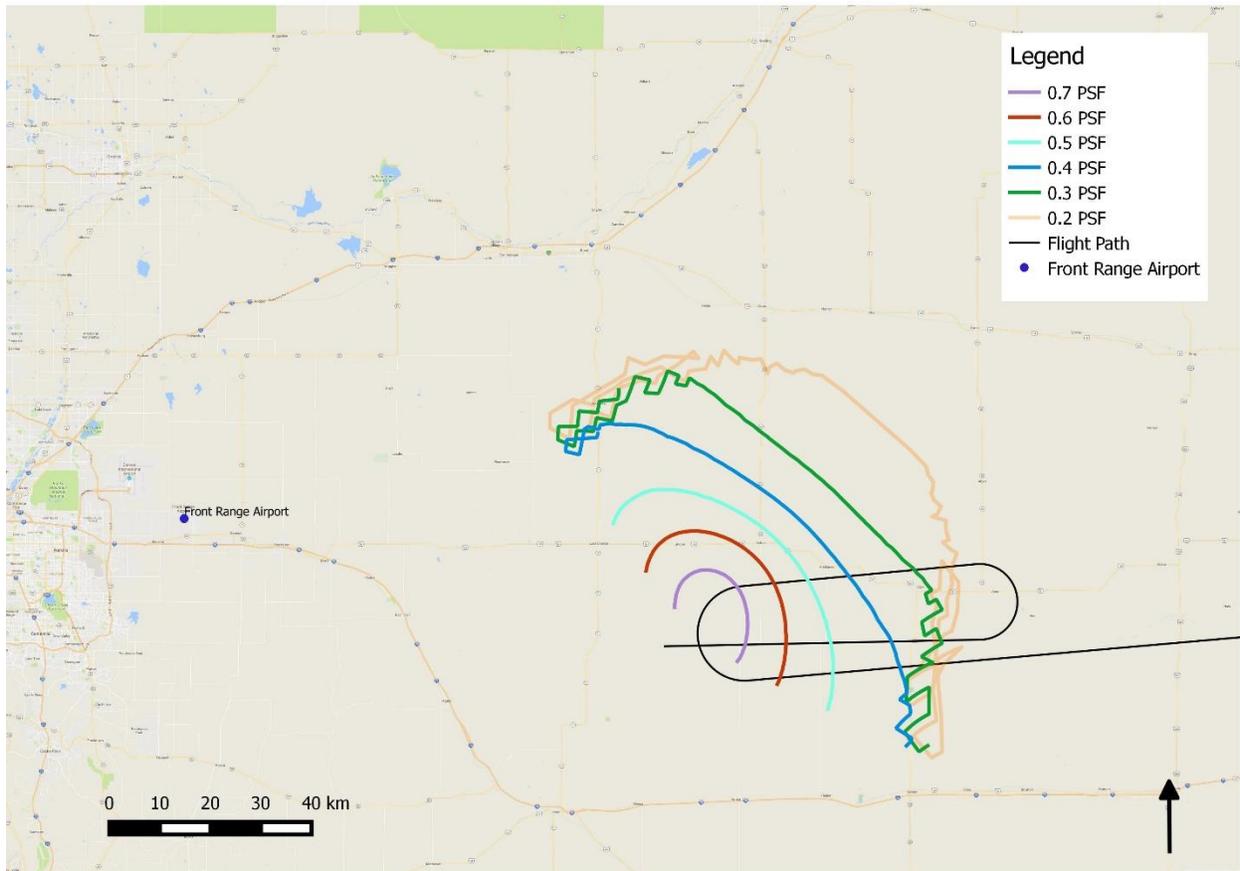


Figure 5.4 RocketPlane Sonic Boom Footprint

5.5 Summary

The Board of County Commissioners (the BOCC) of Adams County, Colorado proposes to operate a commercial space launch site, called “Spaceport Colorado”, at the Front Range Airport (FTG), with up to 52 flights per year.

Since the RocketPlane rocket engine would ignite at a high altitude, rocket engine noise would be very low, but audible for brief periods of time. Analysis shows that the rocket engine noise levels would be far below FAA significance criteria, and even further below hearing conservation and structural damage thresholds.

RocketPlane jet engine noise associated with departures and arrivals would be similar to current jet aircraft noise at FTG and the 65 DNL contour barely extends beyond the runway. RocketPlane jet engine noise levels are below FAA’s significance criteria.

Static engine testing 65 DNL contours are completely contained on airport property and are below FAA’s significance criteria.

The sonic booms generated during the descent portion of the RocketPlane trajectory would result in psf values ranging from 0.2 to 0.7, with the 0.7 psf value in a relatively small area. This magnitude is well below structural damage criteria of 2 psf, and at CDNL 41 would be far below FAA's significance criteria. Sonic booms however would be noticeable in certain areas and would be like the sound of distant thunder.

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U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Environment and Energy

800 Independence Ave., S.W.
Washington, D.C. 20591

February 26, 2018

Dan Murray

Office of Commercial Space Transport
Federal Aviation Administration
800 Independence Ave. SW
Washington, DC 20591

Dear Mr. Murray,

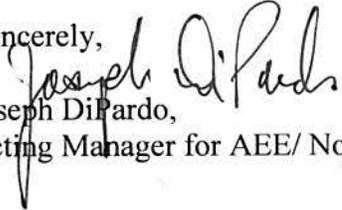
The Office of Environment and Energy (AEE) has reviewed the technical memorandum, summarizing proposed non-standard noise methodology to be used in the Programmatic Environmental Assessment of the conceptual horizontal take-off and landing RLV at Spaceport Colorado (Front Range Airport - FTG) in Adams County, Colorado. In accordance with Federal Aviation Administration (FAA) Order 1050.1F, all non-standard noise analysis must be approved by the FAA Office of Environment and Energy (AEE). As the FAA does not currently have an approved propulsion noise model for launch vehicles, the technical memorandum serves as a request for written approval from AEE to use the proposed noise analysis method.

The noise levels generated from commercial space launch vehicles will be predicted using the FAA's Launch Noise Model (LNM). LNM is based on Eldred's Distributed Source Method 1 (DSM-1) reported in NASA SP-8072. Jet engine noise (J85) will be modeled using USAF Noisemap (F5) data, which will be combined with the LNM-calculated rocket engine noise data at the grid point locations.

The proposed approach addresses the elements recommended by AEE, specifically rocket noise source characteristics, propagation, and ground impedance in the affected environment.

AEE concurs with the proposed analysis using LNM and Noisemap.

Sincerely,


Joseph DiPardo,
Acting Manager for AEE/ Noise Division

Appendix E
Scoping Materials

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U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

Colorado Department of Public Health and Environment
Air Pollution Control Division
4300 Cherry Creek Drive South
Denver, CO 80246-1530

SEP 30 2013

**Re: Environmental Assessment for Front Range Airport Authority Launch Site
Operator License, Colorado Spaceport**

To Whom it May Concern:

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Front Range Airport Authority's (the Authority's) proposal to operate a commercial space launch site at the Front Range Airport (FTG), which is located approximately 30 miles east of Denver, Colorado (see Exhibit 1). The Authority would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. The FAA, in coordination with the Authority, is initiating scoping and is seeking information from Federal, state, and local resource agencies concerning potential effects of the Proposed Action.

It is anticipated that a Launch Site Operator License (LSOL) may be issued to FTG in 2014 and would remain in effect for a 5-year term, ending in 2019. After the initial 5-year term, FTG may apply for a license renewal. Based on discussions with potential commercial launch operators, proposed launch operations are anticipated to begin in mid-2015. The initial Frequency of launch operations is anticipated to be one launch per week, eventually increasing to two launches per day, five days a week, for an anticipated total of 520 annual launches by the end of the initial license term.

To operate a commercial space launch site, the Authority must obtain a launch site operator license from the FAA. Under the Proposed Action addressed in the EA, the FAA would:

- Issue a launch site operator license to the Authority for the operation of a commercial space launch site at FTG,
- Issue launch licenses to commercial operators to launch RLVs from FTG (a separate licensing process), and
- Provide approval to modify the existing Airport Layout Plan (ALP) to reflect the designation of a launch site boundary, installation of aboveground propellant storage tanks, construction of concrete pads for mission preparation, construction of a concrete pad for static hot-fire engine testing, installation of an aboveground water storage tank

and water line, and installation of high-speed fiber optic communication lines, security fencing, and access roads.

We are requesting the following from your agency:

- Information on natural resources under your jurisdiction in the project area that could be affected by the Proposed Action,
- Issues that you feel require analysis in the EA, and
- Permits or approvals that are required from your agency for project construction.

We would appreciate receiving your comments within 30 days of the date of this letter. If no response is provided, we will assume you do not have an interest or will not be providing information regarding this project. In addition, your agency or organization will not receive any further information on the project unless the scope of the project changes.

Please send comments to Ms. Stacey Zee, of my staff, at stacey.zee@faa.gov. She can also be contacted with any questions at 202-267-9305. Thank you in advance for your input on this project.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Enclosures: Exhibit 1. Location of Proposed Launch Site

STATE OF COLORADO

John W. Hickenlooper, Governor
Larry Wolk, MD, MSPH
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S. Laboratory Services Division
Denver, Colorado 80246-1530 8100 Lowry Blvd.
Phone (303) 692-2000 Denver, Colorado 80230-6928
Located in Glendale, Colorado (303) 692-3090
www.colorado.gov/cdphe



Colorado Department
of Public Health
and Environment

October 2, 2013

Daniel Murray
Manager, Space Transportation Development Division
Office of Commercial Space Transportation
800 Independence Ave., SW
Washington, DC 20591

RE: EA-Front Range Airport Launch Site

Dear Mr. Murray:

On September 30, 2013, the Colorado Air Pollution Control Division (APCD) received a request for an air quality determination concerning EA-Front Range Airport Launch Site. APCD staff has reviewed the request and has determined that the following provisions of the Colorado Air Quality Regulations apply to the project.

All sources of potential construction project air emissions in Colorado are required to obtain a construction permit unless specifically exempt from the provisions of Regulation No. 3. Go to the website www.colorado.gov/cdphe/APCD to view this regulation - click on Air Quality Regulations, then Regulation No 3. Section II.D.1 lists which projects are exempt from requirements of the regulation. In addition, you will need to establish whether you are in an air quality attainment or non-attainment area, by accessing the information at www.colorado.gov/cs/Satellite/CDPHE-AP/CBON/1251595265316.

Once it has been determined that an **Air Pollution Emissions Notice (APEN)** is required, the next phase of air permitting involves submission of an **Application for Construction Permit** for each facility and one **APEN** for each emission source. A source can be an individual emission point or group of similar emission points (see Regulation No. 3, Part A). Both APEN reporting and permit requirements are triggered by uncontrolled actual emission rates. Uncontrolled actual emissions are calculated based upon the requested production/operating rate assuming no control equipment is used. In general, an APEN is required for an emission point with uncontrolled actual emissions of any critical pollutant equal to or greater than the quantities listed below:

AREA	UNCONTROLLED ACTUAL EMISSIONS
Attainment Area	2 tons per year
Non-attainment Area	1 ton per year
All Areas	Lead emissions: 100 pounds per year

Sources of non-criteria reportable pollutants have different reporting levels depending upon the pollutant, release point height and distance to the property line. Please see **Regulation No. 3 Appendix A and C** to determine the appropriate reporting level for each pollutant, and for a list of **non-criteria reportable air pollutants**.

However, none of the exemptions from an APEN filing requirement shall apply if a source would otherwise be subject to any specific federal or state applicable requirement. Information concerning submittal of revised APEN is also given in Regulation No. 3, Part A. An APEN is valid for five years. The five year period recommences when a revised APEN is received by the Division.

If you have any questions regarding your reporting or permitting obligations, please contact the Small Business Assistance Program at 303-692-3148 or 3175.

Land development construction activities (earth moving) that are greater than **25 acres** or more than **six months in duration** will require an APEN from the Air Division and may be required to obtain an air permit. In addition, a start-up notice must be submitted thirty days prior to beginning a land development project.

Please refer to the website www.colorado.gov/cdphe/APCD for information on APEN forms. Click on Construction Permit and Compliance Forms, then click on the menu item that applies to your project.

The proponent of this project will need to perform a General Conformity analysis as required under NEPA and the Clean Air Act.

If you have any questions or need additional information, please call the phone number(s) listed above, or you may call/ e-mail me directly at 303-692-3127 / jim.dileo@state.co.us.

Thank you for contacting the Division about requirements for your project or permit.

Sincerely,



James A. DiLeo
NEPA Coordinator
Air Pollution Control Division
Colorado Department of Public Health and Environment



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

SEP 30 2013

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4300 Cherry Creek Drive South
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We would appreciate receiving your comments within 30 days of the date of this letter. If no response is provided, we will assume you do not have an interest or will not be providing information regarding this project. In addition, your agency or organization will not receive any further information on the project unless the scope of the project changes.

Please send comments to Ms. Stacey Zee, of my staff, at stacey.zee@faa.gov. She can also be contacted with any questions at 202-267-9305. Thank you in advance for your input on this project.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Enclosures: Exhibit 1. Location of Proposed Launch Site



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

SEP 30 2013

Mr. Mark Tobias
Section 106 Compliance Manager
Colorado Office of Archaeology and Historical Preservation
History Colorado Center
1200 Broadway
Denver, CO 80203

**Re: Environmental Assessment for Front Range Airport Authority Launch Site
Operator License, Colorado Spaceport**

Dear Mr. Tobias:

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Front Range Airport Authority's (the Authority's) proposal to operate a commercial space launch site at the Front Range Airport (FTG), which is located approximately 30 miles east of Denver, Colorado (see Exhibit 1). The Authority would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. The FAA, in coordination with the Authority, is initiating scoping and is seeking information from Federal, state, and local resource agencies concerning potential effects of the Proposed Action.

It is anticipated that a Launch Site Operator License (LSOL) may be issued to FTG in 2014 and would remain in effect for a 5-year term, ending in 2019. After the initial 5-year term, FTG may apply for a license renewal. Based on discussions with potential commercial launch operators, proposed launch operations are anticipated to begin in mid-2015. The initial Frequency of launch operations is anticipated to be one launch per week, eventually increasing to two launches per day, five days a week, for an anticipated total of 520 annual launches by the end of the initial license term.

To operate a commercial space launch site, the Authority must obtain a launch site operator license from the FAA. Under the Proposed Action addressed in the EA, the FAA would:

- Issue a launch site operator license to the Authority for the operation of a commercial space launch site at FTG,
- Issue launch licenses to commercial operators to launch RLVs from FTG (a separate licensing process), and
- Provide approval to modify the existing Airport Layout Plan (ALP) to reflect the designation of a launch site boundary, installation of aboveground propellant storage tanks, construction of concrete pads for mission preparation, construction of a concrete

pad for static hot-fire engine testing, installation of an aboveground water storage tank and water line, and installation of high-speed fiber optic communication lines, security fencing, and access roads.

We are requesting the following from your agency:

- Information on natural resources under your jurisdiction in the project area that could be affected by the Proposed Action,
- Issues that you feel require analysis in the EA, and
- Permits or approvals that are required from your agency for project construction.

We would appreciate receiving your comments within 30 days of the date of this letter. If no response is provided, we will assume you do not have an interest or will not be providing information regarding this project. In addition, your agency or organization will not receive any further information on the project unless the scope of the project changes.

Please send comments to Ms. Stacey Zee, of my staff, at stacey.zee@faa.gov. She can also be contacted with any questions at 202-267-9305. Thank you in advance for your input on this project.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Enclosures: Exhibit 1. Location of Proposed Launch Site



HISTORY Colorado

October 7, 2013

Daniel Murray
Manager, Space Transportation Development Division
Federal Aviation Administration
Office of Commercial Space Transportation
800 Independence Ave., SW
Washington DC 20591

Re: Environmental Assessment for Front Range Airport Authority Launch Site Operator License, Colorado Spaceport (CHS #64807)

Dear Mr. Murray:

Thank you for your correspondence dated September 30, 2013 (received by our office on October 1, 2013) regarding the subject project.

In order to determine the effect of the proposed project on cultural resources, we recommend that you coordinate your National Environmental Policy Act (NEPA) studies with those required under Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR Part 800 (Section 106). According to 36 CFR 800.8, "Federal agencies are encouraged to coordinate compliance with Section 106 and the procedures in this part with any steps taken to meet the requirements of the National Environmental Policy Act." Section 106 results can inform NEPA planning such as including mitigation measures identified under Section 106 into the NEPA decision document. Once we receive the Section 106 studies, we will be able to fully complete our reviews under both Section 106 and NEPA.

We also recommend that you begin the Section 106 review process as early as possible by identifying and inviting consulting parties to participate in this process. Furthermore our office should be consulted on the establishment of an appropriate area of potential effects (APE). As defined by 36 CFR 800.16(d) the APE includes "the area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" and effects include those that may occur later in time or be cumulative. Further, Section 110 of the National Historic Preservation Act states that Federal agencies should "coordinate with the earliest phases of any environmental review carried out under the National Environmental Policy Act."

The results of a file search or other identification efforts may demonstrate that there are resources located within the APE that have been listed on or determined eligible for the National Register of Historic Places, or that require additional data to determine eligibility. If project activities will take place in the vicinity of historic properties, please consult with our office regarding the potential effect of the proposed project. Similarly, additional consultation should occur with our office if project activities will take place in the vicinity of those resources which lack an official determination of eligibility.

The following page on our website provides information on how to conduct a file search with our office:
<http://www.historycolorado.org/oahp/file-search>.

Please note that information regarding significant archaeological resources is excluded from the Freedom of Information Act. Therefore, legal locations of these resources must not be included in documents for public distribution.

Our office looks forward to additional consultation regarding the proposed project and request being involved in the consultation process with the local governments, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties.

Thank you for the opportunity to comment. If we may be of further assistance, please contact Mark Tobias, Section 106 Compliance Manager, at (303) 866-4674 or mark.tobias@state.co.us.

Sincerely,


for Edward C. Nichols
State Historic Preservation Officer
ECN/MAT



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

SEP 30 2013

Mr. Rick Cables
Director
Colorado Parks and Wildlife
1313 Sherman Street, Room 618
Denver, CO 80203

**Re: Environmental Assessment for Front Range Airport Authority Launch Site
Operator License, Colorado Spaceport**

Dear Mr. Cables:

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Front Range Airport Authority's (the Authority's) proposal to operate a commercial space launch site at the Front Range Airport (FTG), which is located approximately 30 miles east of Denver, Colorado (see Exhibit 1). The Authority would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. The FAA, in coordination with the Authority, is initiating scoping and is seeking information from Federal, state, and local resource agencies concerning potential effects of the Proposed Action.

It is anticipated that a Launch Site Operator License (LSOL) may be issued to FTG in 2014 and would remain in effect for a 5-year term, ending in 2019. After the initial 5-year term, FTG may apply for a license renewal. Based on discussions with potential commercial launch operators, proposed launch operations are anticipated to begin in mid-2015. The initial Frequency of launch operations is anticipated to be one launch per week, eventually increasing to two launches per day, five days a week, for an anticipated total of 520 annual launches by the end of the initial license term.

To operate a commercial space launch site, the Authority must obtain a launch site operator license from the FAA. Under the Proposed Action addressed in the EA, the FAA would:

- Issue a launch site operator license to the Authority for the operation of a commercial space launch site at FTG,
- Issue launch licenses to commercial operators to launch RLVs from FTG (a separate licensing process), and
- Provide approval to modify the existing Airport Layout Plan (ALP) to reflect the designation of a launch site boundary, installation of aboveground propellant storage tanks, construction of concrete pads for mission preparation, construction of a concrete pad for static hot-fire engine testing, installation of an aboveground water storage tank

and water line, and installation of high-speed fiber optic communication lines, security fencing, and access roads.

We are requesting the following from your agency:

- Information on natural resources under your jurisdiction in the project area that could be affected by the Proposed Action,
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We would appreciate receiving your comments within 30 days of the date of this letter. If no response is provided, we will assume you do not have an interest or will not be providing information regarding this project. In addition, your agency or organization will not receive any further information on the project unless the scope of the project changes.

Please send comments to Ms. Stacey Zee, of my staff, at stacey.zee@faa.gov. She can also be contacted with any questions at 202-267-9305. Thank you in advance for your input on this project.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Enclosures: Exhibit 1. Location of Proposed Launch Site



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

SEP 30 2013

U.S. EPA Region 8
80C-EISC
1595 Wynkoop St
Denver, CO 80202-1129

**Re: Environmental Assessment for Front Range Airport Authority Launch Site
Operator License, Colorado Spaceport**

To Whom it May Concern:

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Front Range Airport Authority's (the Authority's) proposal to operate a commercial space launch site at the Front Range Airport (FTG), which is located approximately 30 miles east of Denver, Colorado (see Exhibit 1). The Authority would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. The FAA, in coordination with the Authority, is initiating scoping and is seeking information from Federal, state, and local resource agencies concerning potential effects of the Proposed Action.

It is anticipated that a Launch Site Operator License (LSOL) may be issued to FTG in 2014 and would remain in effect for a 5-year term, ending in 2019. After the initial 5-year term, FTG may apply for a license renewal. Based on discussions with potential commercial launch operators, proposed launch operations are anticipated to begin in mid-2015. The initial Frequency of launch operations is anticipated to be one launch per week, eventually increasing to two launches per day, five days a week, for an anticipated total of 520 annual launches by the end of the initial license term.

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Please send comments to Ms. Stacey Zee, of my staff, at stacey.zee@faa.gov. She can also be contacted with any questions at 202-267-9305. Thank you in advance for your input on this project.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Enclosures: Exhibit 1. Location of Proposed Launch Site

Project:	Spaceport Colorado	Project No	Dept 051, 206505, 002
Date and Time:	October 22, 2013 / 8:15 am	Subject:	Confirming receipt of Agency Scoping Letter
Call to:	John Van Kirk	Phone No:	720-369-3201 cell
Call from:	Phil Strobel	Phone No:	(303) 312-6704 Strobel.philip@Epa.gov

Discussion, Agreement, and/or Action

I called EPA on Monday, October 21, 2013 to confirm that EPA had received the agency scoping letters that were sent on September 30, just prior to the government shutdown. The hard copy letters had been returned to FAA, so FAA requested verification of receipt.

Phil called me back this morning and said that the e-mailed version of the letter had been received. He was not sure if EPA would be able to provide written scoping comments for the EA, due to staffing issues; however, he relayed to me that the EA should contain an analysis of air quality, noise, and carbon (CO₂) emissions. I confirmed with Phil that those resources would be evaluated in the EA.

Phil also stated that EPA would probably not be able to provide comments on the EA since, by statute, EPA must provide review of EIS's and they do not currently have the resources to review EAs. He did say, however, that their review of the EA would depend on workload at the time they receive the EA, and he would pass both the scoping letter and the EA on to Carol Anderson in the NEPA section.

Related to air quality, Phil asked me what the fuel consumption would be for the spacecraft. I told him that the air quality section had not yet been completed (and I did not have my calculations with me), but I did relay to him that the launch vehicles were fairly small, comparable in size to general aviation/business jet aircraft, and that the estimated fuel consumption at maximum operations would be comparable to approximately one-half of the current annual fuel consumption at Front Range Airport, or approximately 200,000 gallons per year. This annual estimate was based on fuel consumption estimates presented in the DOPAA (2,400 pounds kerosene per launch / 6.67 pounds/gallon = 360 gallons/launch * 520 launches/year = 187,000 gallons/year).

Phil thanked me for the information and I told him that I would relay his verbal comments regarding EPA's environmental concerns to the project team.



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

Mr. Scott Franklin
Acting Chair
U.S. Army Corps of Engineers
Omaha District-Denver Regulatory Office
9307 South Wadsworth Blvd.
Littleton, CO 80128-6901

SEP 30 2013

**Re: Environmental Assessment for Front Range Airport Authority Launch Site
Operator License, Colorado Spaceport**

Dear Mr. Franklin:

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Front Range Airport Authority's (the Authority's) proposal to operate a commercial space launch site at the Front Range Airport (FTG), which is located approximately 30 miles east of Denver, Colorado (see Exhibit 1). The Authority would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. The FAA, in coordination with the Authority, is initiating scoping and is seeking information from Federal, state, and local resource agencies concerning potential effects of the Proposed Action.

It is anticipated that a Launch Site Operator License (LSOL) may be issued to FTG in 2014 and would remain in effect for a 5-year term, ending in 2019. After the initial 5-year term, FTG may apply for a license renewal. Based on discussions with potential commercial launch operators, proposed launch operations are anticipated to begin in mid-2015. The initial Frequency of launch operations is anticipated to be one launch per week, eventually increasing to two launches per day, five days a week, for an anticipated total of 520 annual launches by the end of the initial license term.

To operate a commercial space launch site, the Authority must obtain a launch site operator license from the FAA. Under the Proposed Action addressed in the EA, the FAA would:

- Issue a launch site operator license to the Authority for the operation of a commercial space launch site at FTG,
- Issue launch licenses to commercial operators to launch RLVs from FTG (a separate licensing process), and
- Provide approval to modify the existing Airport Layout Plan (ALP) to reflect the designation of a launch site boundary, installation of aboveground propellant storage tanks, construction of concrete pads for mission preparation, construction of a concrete

pad for static hot-fire engine testing, installation of an aboveground water storage tank and water line, and installation of high-speed fiber optic communication lines, security fencing, and access roads.

We are requesting the following from your agency:

- Information on natural resources under your jurisdiction in the project area that could be affected by the Proposed Action,
- Issues that you feel require analysis in the EA, and
- Permits or approvals that are required from your agency for project construction.

We would appreciate receiving your comments within 30 days of the date of this letter. If no response is provided, we will assume you do not have an interest or will not be providing information regarding this project. In addition, your agency or organization will not receive any further information on the project unless the scope of the project changes.

Please send comments to Ms. Stacey Zee, of my staff, at stacey.zee@faa.gov. She can also be contacted with any questions at 202-267-9305. Thank you in advance for your input on this project.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Enclosures: Exhibit 1. Location of Proposed Launch Site



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
DENVER REGULATORY OFFICE, 9307 SOUTH WADSWORTH BOULEVARD
LITTLETON, COLORADO 80128-6901

October 2, 2013

Daniel Murray
Space Transportation Development Division
Federal Aviation Administration
800 Independence Ave., SW
Washington, DC 20591

RE: Front Range Airport Launch Site

Dear Mr. Murray:

Reference is made to the above-mentioned project located in Adams County, Colorado.

This project has been reviewed by my office in accordance with Section 404 of the Clean Water Act under which the U.S. Army Corps of Engineers regulates the discharge of dredged and fill material, and any excavation activity associated with a dredge and fill project in waters of the United States.

If any work associated with this project requires the placement of dredged or fill material, and any excavation associated with a dredged or fill project, either temporary or permanent, in an aquatic site, which may include ephemeral and perennial streams, wetlands, lakes, ponds, drainage ditches and irrigation ditches, this office should be notified by a proponent of the project for Department of the Army permits, changes in permit requirements and jurisdictional determinations pursuant to Section 404 of the Clean Water Act.

Work in an aquatic site should be shown on a map identifying the Quarter Section, Township, Range and County and Latitude and Longitude, Decimal Degrees (datum NAD 83) and the dimensions of work in each aquatic site. Any loss of an aquatic site may require mitigation. Mitigation requirements will be determined during the Department of the Army permitting review.

If there are any questions call my office at **303-979-4120**.

Sincerely,

A handwritten signature in black ink, appearing to read "Kiel Downing", is written over a horizontal line.

Kiel Downing
Chief, Denver Regulatory Office



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

Mr. Marty Reeves
USDA Farm Service Agency
Attn: Brighton Service Center
57 W. Bromley Lane
Brighton, CO 80601-2697

SEP 30 2013

**Re: Environmental Assessment for Front Range Airport Authority Launch Site
Operator License, Colorado Spaceport**

Dear Mr. Reeves:

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Front Range Airport Authority's (the Authority's) proposal to operate a commercial space launch site at the Front Range Airport (FTG), which is located approximately 30 miles east of Denver, Colorado (see Exhibit 1). The Authority would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. The FAA, in coordination with the Authority, is initiating scoping and is seeking information from Federal, state, and local resource agencies concerning potential effects of the Proposed Action.

It is anticipated that a Launch Site Operator License (LSOL) may be issued to FTG in 2014 and would remain in effect for a 5-year term, ending in 2019. After the initial 5-year term, FTG may apply for a license renewal. Based on discussions with potential commercial launch operators, proposed launch operations are anticipated to begin in mid-2015. The initial Frequency of launch operations is anticipated to be one launch per week, eventually increasing to two launches per day, five days a week, for an anticipated total of 520 annual launches by the end of the initial license term.

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Please send comments to Ms. Stacey Zee, of my staff, at stacey.zee@faa.gov. She can also be contacted with any questions at 202-267-9305. Thank you in advance for your input on this project.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Enclosures: Exhibit 1. Location of Proposed Launch Site



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

SEP 30 2013

Ms. Cindy Einspahr
USDA-NRCS
Attn: Brighton Service Center
57 W. Bromley Lane
Brighton, CO 80601-2697

**Re: Environmental Assessment for Front Range Airport Authority Launch Site
Operator License, Colorado Spaceport**

Dear Ms. Einspahr:

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Front Range Airport Authority's (the Authority's) proposal to operate a commercial space launch site at the Front Range Airport (FTG), which is located approximately 30 miles east of Denver, Colorado (see Exhibit 1). The Authority would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. The FAA, in coordination with the Authority, is initiating scoping and is seeking information from Federal, state, and local resource agencies concerning potential effects of the Proposed Action.

It is anticipated that a Launch Site Operator License (LSOL) may be issued to FTG in 2014 and would remain in effect for a 5-year term, ending in 2019. After the initial 5-year term, FTG may apply for a license renewal. Based on discussions with potential commercial launch operators, proposed launch operations are anticipated to begin in mid-2015. The initial Frequency of launch operations is anticipated to be one launch per week, eventually increasing to two launches per day, five days a week, for an anticipated total of 520 annual launches by the end of the initial license term.

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Please send comments to Ms. Stacey Zee, of my staff, at stacey.zee@faa.gov. She can also be contacted with any questions at 202-267-9305. Thank you in advance for your input on this project.

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Daniel Murray
Manager, Space Transportation Development Division

Enclosures: Exhibit 1. Location of Proposed Launch Site



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

SEP 30 2013

Ms. Heather Johnson
Mountain-Prairie Coordinator
U.S. Fish and Wildlife Service
134 Union Boulevard, Suite 300
Lakewood, CO 80228

**Re: Environmental Assessment for Front Range Airport Authority Launch Site
Operator License, Colorado Spaceport**

Dear Ms. Johnson:

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Front Range Airport Authority's (the Authority's) proposal to operate a commercial space launch site at the Front Range Airport (FTG), which is located approximately 30 miles east of Denver, Colorado (see Exhibit 1). The Authority would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. The FAA, in coordination with the Authority, is initiating scoping and is seeking information from Federal, state, and local resource agencies concerning potential effects of the Proposed Action.

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Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Enclosures: Exhibit 1. Location of Proposed Launch Site



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW.
Washington, DC 20591

June 7, 2017

RE: Public Scoping Meeting and Comment Period for the Federal Aviation Administration
Programmatic Environmental Assessment for Launch Site Operator License Application at
Front Range Airport, Adams County, Colorado

Dear Interested Party:

In accordance with the National Environmental Policy Act (NEPA) of 1969 as amended (42 United States Code [U.S.C.] §4321, et seq.), the Federal Aviation Administration (FAA) is preparing a Programmatic Environmental Assessment (PEA) to assess the potential environmental impacts of the Adams County Board of County Commissioners (BOCC)'s proposal to operate a commercial space launch site at the Front Range Airport (FTG). The FAA previously initiated a scoping process for this project in 2013. Given the length of time that has since transpired and subsequent changes to the proposal, the FAA has determined that the purposes of NEPA will be furthered by re-initiating the scoping process for this action.

FTG is a 3,200-acre general aviation airport located in the northeast quadrant of the Denver metropolitan area and approximately 7 miles southeast of the Denver International Airport in Adams County, Colorado (see Attachment 1). The Adams County BOCC proposes to operate a commercial space launch site at FTG, called "Spaceport Colorado", and offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs). To operate a commercial space launch site, the Adams County BOCC must obtain a launch site operator license from the FAA. Under the Proposed Action to be addressed in the PEA, the FAA would issue a launch site operator license to the BOCC for the operation of a commercial space launch site at FTG, and would also provide conditional approval of the Airport Layout Plan (ALP) showing the launch site boundary.

To provide you with more information about the proposed project and FAA's environmental review process, and to solicit your comments to inform the scope of the PEA, **the FAA invites you to attend a public scoping meeting at the following date, time, and location:**

Tuesday, June 13, 2017

5:00 to 8:00 PM

Front Range Airport

Restaurant Area

5200 Front Range Parkway

Scoping comments on the PEA can be emailed to Spaceport_Colorado_PEA@icf.com or mailed to: Stacey Zee, FAA Environmental Specialist, c/o ICF, 9300 Lee Hwy, Fairfax, VA 22031. Verbal comments at the public meeting will also be recorded by a court reporter. All comments received during the scoping period, whether provided in writing or orally, will be given equal weight and will be taken into consideration in the preparation of the Draft PEA.

The FAA will provide project updates on our website here:

https://www.faa.gov/about/office_org/headquarters_offices/ast/environmental/nepa_docs/review/documents_progress/

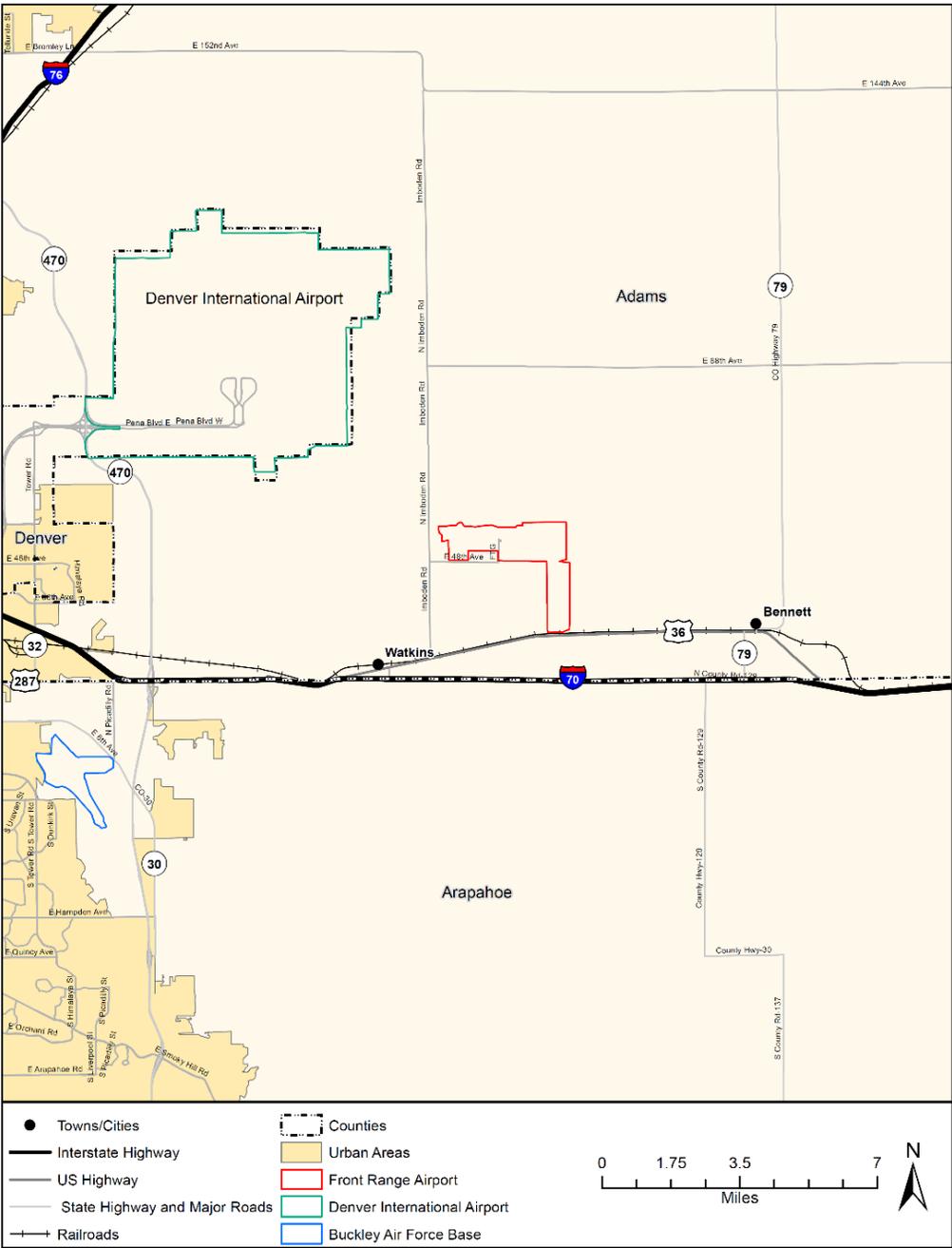
Please submit all comments by July 13, 2017 to ensure they are considered during the preparation of the Draft PEA. If you have any questions you can contact Stacey Zee, of my staff, at 202-267-9305 or Stacey.Zee@faa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'DMurray', written over a faint rectangular box.

Daniel Murray
Manager, Space Transportation Development Division

Attachment 1



SCOPING REPORT

FOR THE

Front Range Airport Programmatic Environmental Assessment

2017

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1.0 Introduction

1.1 Proposed Action Overview

The Federal Aviation Administration (FAA) is preparing the Front Range Airport Programmatic Environmental Assessment (PEA) to evaluate the potential impacts of the Board of County Commissioners (the BOCC's) of Adams County, Colorado's proposal to operate a commercial space launch site, called "Spaceport Colorado", at the Front Range Airport (FTG), located in Watkins, Colorado. To operate a commercial space launch site, the Adams County BOCC must obtain a launch site operator license (LSOL) from the FAA. Under the Proposed Action addressed in this PEA, the FAA would:

- Issue a launch site operator license to the Adams County BOCC for the operation of a commercial space launch site at FTG; and
- Provide conditional approval of FTG's modified Airport Layout Plan (ALP) showing the launch site boundary.

Under the Proposed Action presented during the public scoping comment period, the BOCC would offer Spaceport Colorado to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs). The BOCC plans to offer the site for up to 1 launch per week or 52 launch operations per year for a total number of 260 launch operations over the five-year term of the launch site operator license.

The PEA will evaluate the potential direct, indirect, and cumulative environmental impacts that may result from the Proposed Action of operating Spaceport Colorado, including activities and actions considered connected to the Proposed Action.

1.2 NEPA Compliance & Description of Scoping Process

The Proposed Action is subject to environmental review under the National Environmental Policy Act (NEPA) as amended (42 United States Code [U.S.C.] § 4321, *et seq.*). The FAA is the lead federal agency preparing this PEA in accordance with NEPA, the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*.

The CEQ Regulations allow for federal agencies to prepare "programmatic" NEPA documents for broad federal actions (40 CFR § 1502.4). A programmatic document is a type of general, broad NEPA review from which subsequent NEPA documents can be tiered, focusing on the issues specific to the subsequent action (40 CFR § 1502.2). Programmatic NEPA documents may be prepared for broad Federal actions, such as a proposed program, policy, plan or suite of projects, which address actions occurring over large areas or systems and may include groupings of similar actions or repeating actions over longer periods of time than other NEPA reviews.

As noted in Paragraph 6-2.2.c. of FAA Order 1050.1F, scoping is optional for EAs but can be “useful when an EA deals with uncertainty or controversy regarding potential conflicts over the use of resources or the environmental impacts of the proposed action.” The scoping process can provide a transparent way to identify environmental issues so that the Front Range Airport PEA focuses the analysis on the most pertinent issues and impacts. Scoping also serves to identify issues not requiring detailed analysis, issues that have been addressed by prior environmental reviews, set the temporal and geographic boundaries of the PEA, determine reasonable alternatives, and identify available technical information.

During the public scoping comment period, the FAA requested input from government agencies, Native American tribes, organizations, interest groups, and the public on issues of concern and alternatives to be analyzed. This Scoping Summary Report provides an overview of the activities conducted and the comments, feedback, and input received from the public, private industry and other organizations during the 30-day scoping comment period for the Front Range Airport PEA. The scoping comment period began on June 13, 2017 and closed on July 13, 2017.

2.0 Scoping Activities

2.1 Scoping Announcements

In September 2013, scoping letters were sent to potentially interested agencies and organizations to inform them of the proposal to operate a commercial space launch site at FTG and to request comments. In June 2017, scoping was re-initiated by the FAA due to subsequent changes to the BOCC’s proposal. A mailing list of interested parties was developed to support the PEA scoping and public notice process. A total of 77 contacts representing state and federal agencies, organizations, local officials, and members of the public were included on the mailing list when the scoping process was re-initiated. These interested parties were notified via email of the preparation of the PEA, public scoping meeting, and scoping comment period. Where an email was not available, letters were sent via mail.

Tribes were also provided with a description of the proposal through a December 2015 tribal notification letter and the June 2017 scoping letter. In early 2016, responses were received from three tribes: the Cheyenne & Arapaho Tribes of Oklahoma, the Northern Arapaho tribe, and the Pawnee Nation of Oklahoma.

A news release announcing the scoping period of the PEA and the date and location of the public scoping meeting was published in the I-70 Scout newspaper on July 9, 2017.

In addition to the 77 contacts identified for the mailing list, the FAA identified a stakeholder group with representatives from local airports, airlines, air cargo operators, local officials, and other FTG users. These individuals were also included on the mailing list when the scoping process was initiated. The current stakeholder group stands at 33 individuals.

A project website was developed by the FAA as an additional means of communicating with the public and providing project updates as the PEA is developed. The project website includes an overview of the proposed action and the environmental review process, opportunities for public involvement, and FAA contact information. The project website also includes materials from the scoping meetings (discussed in Section 2.2 below), and details how to submit scoping comments. The project website link was included in the news release and notification letters: http://www.faa.gov/about/office_org/headquarters_offices/ast/environmental/nepa_docs/revi/ew/documents_progress/

2.2 Public Scoping Meeting & Stakeholder Meeting

A public scoping meeting was held on Tuesday, June 13, 2017 at the Front Range Airport Restaurant Area, 5200 Front Range Parkway, Watkins, CO 80137 from 5:00 PM to 8:00PM. The goal of the meeting was to provide more information about the project, the FAA environmental review process, and to solicit input from the public on what should be analyzed and studied in the PEA. Meeting attendees were welcomed at the entrance of the Restaurant Area and were asked to fill out scoping meeting sign-in cards. Members of the public who wished to speak during the public comment portion indicated their intention to speak when they registered. Speakers were then called during the comment session in the order in which they signed up to speak.

The public scoping meeting began with an open-house poster session from 5:00 PM to 6:00 PM, during which members of the public could speak to FAA representatives and view posters about the proposed project, the Front Range PEA, and the NEPA process. Posters provided information on the NEPA process and environmental impact categories (or resource areas); an overview of the Proposed Action, activities, and facilities; the FAA licensing and permitting process; and the public involvement process. These and other materials presented at the public scoping meeting can be found on the FAA Front Range Airport PEA website: https://www.faa.gov/about/office_org/headquarters_offices/ast/environmental/nepa_docs/revi/ew/documents_progress/front_range/

After the open house, the FAA began the formal meeting with a brief presentation about the proposed project and the licensing and NEPA processes, followed by the public comment session. During the poster session and after the public comment session, FAA project team representatives were available to explain the proposed project and alternatives, answer questions about the project, and describe the environmental assessment process and related timeline. Representatives from FTG were also present to answer questions about the proposed project.

A total of 17 individuals signed in at the public scoping meeting. Attendees included members of the public, representatives of elected officials, airline representatives, city government agencies and other commercial space industry representatives. Handouts about the Proposed Action, the

NEPA process, how to provide comments, and other relevant information were handed out at the check-in table. Comment forms and pens were available for attendees to fill out and submit comments at the public scoping meeting, or the comment forms could be taken home and mailed to the FAA after the meeting. Members of the public were also invited to review materials presented on the FAA website and submit comments via mail or email. A court reporter was present during the open house to record oral comments for those who did not wish to speak publically at the meeting and to record the public comment session. A copy of the scoping meeting transcript is included in Appendix A.

In addition to the public scoping meeting, a stakeholder scoping meeting was held on Tuesday, June 13, 2017 at Front Range Airport from 9:00 AM to 12:00 PM. Participants included representatives from the FAA, FTG, airline industry, elected officials, Denver International Airport and other local airports. The FAA's consultant, ICF, provided the meeting facilitator. The stakeholder meeting began with the presentation the FAA provided at the public scoping meeting. After the presentation, meeting participants introduced themselves and indicated their interest in, or area of responsibility for, the proposed project. The floor was then opened for a question and answer period. In general, stakeholders requested details about the proposed spaceport and launch activities, timeline, potential alternatives, operational parameters, potential airspace closure areas, contingency landing locations, and coordination with the airspace surrounding Denver International Airport.

3.0 Summary of Comments Received

Five methods were available to the public for providing comments:

- submitting written comments at the public scoping meeting;
- providing oral comments during the public scoping meeting;
- providing oral comments privately to the court reporter during the public scoping meeting;
- submitting comments electronically to Spaceport_Colorado_PEA@icf.com; and
- sending written comments by U.S. mail to Ms. Stacey M. Zee, FAA Environmental Specialist c/o ICF to 9300 Lee Hwy, Fairfax, VA 22031.

The FAA's written public comment form included the following statement regarding personal identifying information:

"Please Note: Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so."

A good faith effort was made to remove personal identifying information from the comment submissions provided during the public scoping comment period.

A total of 4 comment submissions were received during the scoping comment period. This includes one oral comment from the public scoping meeting and three comments submitted electronically to the project email address. No written comments were received at the scoping meeting and no comments were received through U.S. Mail. See Appendix A for the oral comment and Appendix B for the emailed comments. The comments were from:

- One member of the general public
- American Airlines
- Airlines for America
- The City of Denver

3.1 Issues Analysis

The one oral comment given during the public scoping meeting was from a member of the public and was in favor of the project. The individual praised the efforts of Adams County and FTG to develop the launch site.

The three emailed comments raised concerns about the Proposed Action. Comments included concern about the following:

- A lack of information about the Proposed Action (safety review, operations, general details).
- Impacts to the National Airspace System (NAS).
- Impacts to operations and potential disruptions to air traffic at the Denver International Airport.
- Impacts of the proposed launch vehicle operation area on regional airspace.
- Assurance that the proposed operational parameters will be implemented.
- The decision to undertake a programmatic analysis rather than developing a project-specific environmental assessment.

All comments received during the scoping period are being given equal consideration in the preparation of the draft PEA. Relevant information pertaining to the topics listed above will be analyzed and included in the draft PEA. The potential impacts from the Proposed Action and alternatives on the environmental impact categories (or resource areas) listed in Paragraph 4-1 of FAA Order 1050.1F will be analyzed as part of the draft PEA.

Appendix A: Public Meeting Transcript

PUBLIC SCOPING MEETING

06/13/2017

AB Court Reporting & Video

216 16th Street, Suite 600

Denver Colorado, 80202

303-296-0017

PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
FOR THE FRONT RANGE AIRPORT
LAUNCH SITE OPERATOR LICENSE

PUBLIC SCOPING MEETING

FRONT RANGE AIRPORT
5200 Front Range Parkway
Watkins, Colorado 80137

June 13, 2007
5:00 p.m.

Moderator: Laura Ziemke

Presenters: Pam Underwood
Stacey Zee
Leslie Grey

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1 P R O C E E D I N G

2 LAURA ZIEMKE: So at this time, I would
3 like to introduce the FAA staff who will be
4 providing a short presentation.

5 We have Stacey Zee. She is an
6 environmental specialist with the FAA's Office of
7 Commercial Space Transportation. Leslie Grey is an
8 environmental program manager for the Alaskan Region
9 Airports Division and Pam Underwood, a manager,
10 pre-application consultation.

11 So Pam, if you'd like to go ahead and
12 start.

13 PAM UNDERWOOD: Thank you, Laura. And
14 thank you everyone for coming this evening. This
15 evening, just as Laura mentioned, we're going to go
16 through a short presentation to kind of orient
17 people why we're here.

18 Okay. So our goals for this evening are
19 to explain the FAA licensing and environmental
20 review process, and to explain the proposed actions
21 that will be analyzed by this programmatic
22 environmental assessment. Afterwards, you will be
23 given an opportunity to make comments, as Laura just
24 mentioned, concerning the proposed environmental
25 issues associated with the proposed action and the

1 scope that will help form the scope of the
2 programmatic environmental assessment.

3 Your comments will help us prepare the
4 analysis of the environmental impact that could
5 result from construction and operation of the
6 proposed commercial launch -- launch site.

7 Okay. Why are we here? We are here
8 today because Adams County has proposed to operate a
9 commercial space launch site at the Front Range
10 Airport. And under -- under an FAA launch site
11 operator's license, Adams County proposes to
12 construct and operate a commercial space launch site
13 called Spaceport Colorado that would allow the
14 county to then offer that site to commercial launch
15 providers to conduct launch operations of horizontal
16 take-off and horizontal landing of reusable launch
17 vehicles.

18 In order to operate a launch site, Adams
19 County must apply for a launch site operator license
20 from the FAA office of commercial space
21 transportation. The FAA licenses and regulates
22 commercial space launch and reentry activity as well
23 as the operation of commercial launch and reentry
24 sites to ensure the protection of public health and
25 safety, the safety of property, and the protection

1 of United States national security and foreign
2 policy interests.

3 This particular chart discusses what the
4 activity is that the FAA goes through when we
5 evaluate an application of this nature. The FAA
6 issues licenses for commercial orbital and
7 suborbital launches, purposeful reentries and the
8 operation of a commercial space launch and reentry
9 site.

10 This slide outlines the FAA licensing
11 process. The FAA conducts several reviews, as you
12 see in the center part of the diagram off to the
13 side, during the launch site operator license
14 evaluation before making a determination about
15 issuance of a license.

16 The review steps into a policy review,
17 which is the first block on the page, a launch site
18 location review, a safety review and an
19 environmental review, which is the yellow
20 highlighted section, the purpose of this evening is
21 programmatic environmental assessment.

22 The policy review determines whether the
23 potential exists to affect U.S. national security or
24 foreign policy interests or international
25 obligations. This reviews -- this review includes

1 an interagency review.

2 The launch site location review ensures
3 the license applicant demonstrates for each launch
4 point proposed at least one type of launch vehicle
5 can be flown safely.

6 For the safety review, the license must
7 demonstrate -- the licensee must demonstrate an
8 understanding of the launch and discuss how the
9 operations will be conducted safely.

10 The environmental review ensures the
11 potential environmental impacts of the launch
12 activities are fully considered in the
13 decision-making process.

14 The -- preparing a programmatic
15 environmental assessment is part of the
16 environmental review process. No decision can be
17 made or license issued until the environmental
18 review process is complete. Stacey will explain the
19 environmental review in a few moments.

20 Other impacts considered in the licensing
21 process are the agreements with the FAA or air
22 traffic control and local authority.

23 Once an applicant submits a sufficiently
24 complete application, the FAA will begin its formal
25 review period, leading to a license determination

1 within 180 days. And effectively, everything I just
2 described in the center boxes is what we must
3 complete within 180 days once we receive the
4 application.

5 Please note that this pertains to the
6 launch site operator's license, which would be
7 operation of this particular site. Once a launch
8 operator decides to conduct a launch from this
9 particular site, they, too, must obtain a license
10 specific to their launch activity, which would
11 include additional safety and environmental reviews.

12 Now we're going to pass it along to
13 Stacey.

14 STACEY ZEE: Good evening.

15 So this goes over the National
16 Environmental Policy Act. So issuing a launch site
17 operator license is considered a major federal
18 action and subject to environmental review under the
19 National Environmental Policy Act or NEPA.

20 So NEPA requires that the federal
21 agencies consider the environmental consequences of
22 their actions. So in this case, NEPA requires the
23 FAA analyze the impacts of issuing a launch site
24 operator license. And the federal agencies need to
25 disclose these environmental impacts in a NEPA

1 document.

2 So for this project, we will be preparing
3 a programmatic environmental assessment. I'll go
4 into the specifics of a programmatic in a couple
5 more slides.

6 So under NEPA, the environment includes
7 physical and biological environment and human
8 relationships to that environment. We do have to
9 consider environmental issues as part of our -- our
10 planning process and the public scoping really helps
11 us -- helps the environmental review process and
12 provide -- helps us to -- receive your input in
13 identifying the issues that we need to focus on.

14 So please note, as -- as Pam said, we
15 will not make a decision until -- on the license
16 until the environmental review portion is complete.

17 So the proposed action that we are
18 looking at in the environmental assessment is the
19 FAA's action to issue a launch site operator license
20 at Adams County, that will allow the county to offer
21 the commercial space launch site, which is called
22 Spaceport Colorado, to commercial launch providers
23 to conduct launch operations of horizontal take-offs
24 and horizontal landings of reusable launch vehicles.

25 In addition, the FAA would provide

1 conditional approval of the Front Range Airport
2 layout plan showing the launch site boundary.

3 So the programmatic EA will evaluate the
4 impact of operating a horizontal take-off and
5 horizontal landing reusable launch vehicle. In
6 order to find the scope or bounds of the analysis,
7 the programmatic EA will consider generic horizontal
8 reusable launch vehicle or ROV that takes off and
9 lands under jet power.

10 So in general, this type of vehicle takes
11 off horizontal -- horizontally on a runway under jet
12 power, like commercial aircraft. Once it reaches a
13 certain altitude, the rocket engines ignite,
14 enabling the vehicle to reach orbit appropriate for
15 whatever mission it's taking.

16 Under completion of the mission, the
17 vehicle would return to Front Range under jet power.
18 During this time, the vehicle would be in
19 communication with air traffic control during the
20 entirety of the launch operation.

21 The programmatic EA will analyze high
22 level impacts of the generic horizontal vehicle.
23 Once -- once the specific launch operator plans to
24 conduct launches from the site, they will apply to
25 the FAA for a specific launch license, and then --

1 at that time, we'll do an EA, which would tier off
2 the programmatic EA to analyze the impact of their
3 more specific launch activities.

4 So due to the proximity of Front Range to
5 Denver International Airport and other factors, the
6 FAA plans to set parameters on proposed launch
7 operations. These include factors such as the
8 operations of the horizontal launches under jet
9 power, the analysis would include launch taking
10 place during daylight hours. In addition, the FAA
11 would clear airspace for roughly 30 minutes during
12 vehicle ascent and descent.

13 At this time, we're still putting that
14 information together. More detailed analysis will
15 be included in the EA and you'll see that when it's
16 released for public review later this fall.

17 So while construction of infrastructure
18 is not included as part of the proposed action in
19 this EA, the conceptual infrastructure will be
20 considered as part of this programmatic impact
21 analysis. So this includes things that are covered
22 on the slide, including propellant storage tanks,
23 concrete pads for mission preparation, possible
24 engine testing stand, water storage tank, security
25 fencing and access roads.

1 Again, once the vehicle operator is
2 identified, Front Range can apply for a modification
3 of the airport layout plan for development of this
4 launch infrastructure, and the separate
5 environmental review will also cover the
6 infrastructure that tiers off of PEA.

7 So how does PEA work? So for this
8 initial launch site operator license, we are putting
9 together the programmatic EA. The programmatic
10 document is a type of NEPA document that typically
11 is used to look -- analyze high level impacts of
12 broad categories of actions.

13 So, for example, programmatic documents
14 are typically used to analyze the environmental
15 impacts of policies, programs or broad projects that
16 are taking place over a series of steps in -- in
17 time.

18 So the chart sort of compares the
19 programmatic and the tiered document. The analysis
20 in the programmatic document is based on broad
21 assumptions, as I mentioned, about the project
22 parameters that are known at this time.

23 For example, the PEA will make
24 assumptions about the vehicle parameters and
25 infrastructure development that are common to -- to

1 all types of operations that could possibly take
2 place here.

3 So once the launch operator applies for a
4 license to operate a specific vehicle at Front
5 Range, the separate environmental document that
6 tiers off the PEA will get into the more focused
7 analysis, and that would be required to support the
8 issuance of the launch operator license and the
9 other associated approvals, such as any
10 modifications to the airport layout plan. So this
11 document would provide a more detailed analysis
12 based on vehicle specific operational parameters.

13 So at this time, I'm going to hand it
14 over to Leslie Grey to talk more about the
15 environmental process and get into the schedule.

16 LESLIE GREY: Thank you, Stacey.

17 All right. So continuing on regarding
18 alternatives. NEPA requires Federal agencies to
19 consider alternatives that would accomplish the
20 purpose of the project.

21 In addition to the proposed action, which
22 Stacey just explained, the no action alternative
23 will also be analyzed in the programmatic
24 environmental assessment.

25 Under the no action alternative, the FAA

1 would not issue a launch site operator license to
2 Adams County and the county would not operate the
3 launch site. So therefore, the no action
4 alternative serves as the baseline to compare the
5 impacts of the proposed action.

6 The environmental impact categories.

7 This slide outlines resource areas of the impact
8 category that the FAA will -- FAA will analyze in
9 the programmatic environmental assessment per NEPA
10 and FAA regulation. Categories include noise, air
11 quality, biological resources and several others, of
12 which they're all listed on the slide right here.

13 The programmatic EA will also include a
14 description of the existing environmental conditions
15 of the areas for the proposed action, and describe
16 the environmental impacts of the proposed action,
17 the no action alternative as well as all the other
18 alternatives, if there are any.

19 So please keep in mind, I just mentioned
20 noise and air quality. That does not mean that
21 there's a significant impact. I just happened to
22 mention those off of this slide.

23 All right. The tentative schedule for
24 the project. Now that I have provided an overview
25 of the environmental review process and the

1 programmatic environmental assessment, I'm going to
2 talk about the current schedule and how you can
3 remain involved.

4 The FAA previously initiated a scoping
5 process for the project in 2013, and due to changes
6 in the proposal, the FAA's reinitiating the scoping
7 process for the action at this time.

8 Today's public scoping meeting is being
9 held to provide you information regarding the
10 proposed action and to collect your initial input on
11 the potential environmental impacts of the proposed
12 project.

13 We're also initiating agency consultation
14 with federal and state agencies, such as U.S. Fish
15 and Wildlife Service and the State Office of
16 Archaeology and Historic Preservation or historic
17 Colorado.

18 At this time, we plan to publish the
19 draft PEA in mid-to-late October this year. And in
20 early November, we plan to hold a public hearing on
21 the draft programmatic environmental assessment.

22 The public will have 30 days to submit
23 comments on this draft. We then plan to release a
24 final programmatic environmental assessment, which
25 incorporates comments received on the draft, and we

1 plan for that in December 2017.

2 Following that, the FAA can make a
3 finding on the proposed action, we expect in early
4 2018.

5 So at tonight's meeting, we want you to
6 know that there are several ways that you can
7 provide your input on the scope of draft
8 programmatic environmental assessment. You can
9 provide your comments here tonight. You can provide
10 written comments and place them in the comment box
11 located in comment area back there. Thank you,
12 Shawna. You can provide oral comments directly to
13 the court reporter. We'll be doing that following
14 this, who will transcribe them in the record, and
15 you may also e-mail or mail the comments. The
16 details on how to submit comments can be found on
17 the comment form.

18 All -- we want you to know that all
19 comments, oral and written, will be given equal
20 weight and consideration. We'd like you to submit
21 your comments by July 13 of this year to ensure that
22 they're considered in the development of the draft
23 programmatic agreement.

24 So at this time, I'd like to hand it over
25 to Laura and she's going to go over a few more

1 administrative points, and then we'll go to the
2 public portion of the meeting -- public comment
3 portion of the meeting.

4 LAURA ZIEMKE: All right. Thank you.

5 So we are now ready to move on to that
6 oral comment period or part of the meeting. But I
7 did want to say, as you saw when you arrived, we had
8 an informal open house prior to this portion of the
9 meeting. During the open house, many of you were
10 able to engage in conversation with the project
11 team. During this portion of the meeting, during
12 the comment portion of the meeting, the FAA and the
13 project team will not be answering questions or
14 making statements in response to the individual
15 comments. But after the comments are given, we will
16 restart the open house and the project team will be
17 there and available to -- to have discussions with
18 you.

19 So with that, I do have two individuals
20 who did sign up -- well, first, let me ask: Is
21 there anyone who didn't sign up to give oral comment
22 who would like to give oral comments this evening?
23 Show of hands?

24 All right. So I did have two individuals
25 and then one who has a question mark. So I'm going

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1 to ask Allan Lockheed, did you mean -- did you want
2 to comment tonight, Allan?

3 ALLAN LOCKHEED: I -- I wanted to hear -
4 hear and think before I said anything. And no, I
5 don't have anything more.

6 LAURA ZIEMKE: So not tonight. Okay.

7 And then I also have John Rooney and
8 Michael Miller. And I believe when you signed up,
9 you weren't sure? Are you -- where are you in the
10 room? Did you want to give comments this evening?

11 MICHAEL MILLER: I just wanted to say
12 that I'm in favor of the project and I support the
13 efforts of Adams County and the airport to develop
14 the launch site.

15 THE REPORTER: Who was that?

16 MICHAEL MILLER: Michael Miller.

17 LAURA ZIEMKE: That wasn't what I meant,
18 I'm sorry. I just wasn't sure if you wanted to
19 still come up and give it, but if that's it.

20 MICHAEL MILLER: That's it.

21 LAURA ZIEMKE: John, did you want to come
22 up and give comments this evening? Is John here?
23 John Rooney?

24 JOHN PENNEY: Is that Penney, not Rooney?

25 LAURA ZIEMKE: It could be Penney.

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1 Sometimes it's hard to read.

2 JOHN PENNEY: I marked it when I walked
3 in the door. Same -- same with the agenda and the
4 scope -- scoping of the meeting. I don't have any
5 comments.

6 LAURA ZIEMKE: You don't have any
7 comments tonight. All right.

8 Well, is there anyone else who would like
9 to come up this evening to give oral comments?

10 LAURA ZIEMKE: All right. Well, with
11 that then, I do just want to go back to what Leslie
12 said, just remind everyone that -- that comments are
13 due by July 13th, and a reminder that there are
14 handouts and comment forms here at the meeting. We
15 have some back at the comment table and at the
16 front.

17 And then on behalf of FAA, thank you very
18 much for your time and joining us here this evening.
19 The project team will be over by the posters and
20 available for further discussion.

21 All right. Thank you.

22 (The proceedings concluded at 6:24 p.m.)

23

24

25

AB Court Reporting & Video

1 STATE OF COLORADO)
) ss. REPORTER'S CERTIFICATE
2 COUNTY OF DENVER)

3 I, Marlene F. Smith, do hereby certify
4 that I am a Registered Professional Reporter and
5 Notary Public within and for the State of Colorado;

6 I further certify that these proceedings
7 were taken in shorthand by me at the time and place
8 herein set forth, that it was thereafter reduced to
9 typewritten form, and that the foregoing constitutes
10 a true and correct transcript.

11 I further certify that I am not related
12 to, employed by, nor of counsel for any of the
13 parties or attorneys herein, nor otherwise
14 interested in the result of the within proceedings.

15 In witness whereof, I have affixed my
16 signature this 23rd day of June, 2017.

17 My commission expires June 29, 2017.

18

19

20

Marlene F. Smith, RPR
216 - 16th Street, Suite 600
Denver, Colorado 80202

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Appendix B: Scoping Comments Received



Airlines for America®

We Connect the World

July 13, 2017

Submitted electronically to: Spaceport_Colorado_PEA@icf.com

Ms. Stacey Zee
Federal Aviation Administration
c/o ICF
9300 Lee Hwy
Fairfax, VA 22031

Re: Comments on the Scoping for a Programmatic Environmental Assessment (PEA) Related to the Adams County Board of County Commissioner's Proposal for a Commercial Space Launch Site at the Front Range Airport

Dear Ms. Watkins:

Airlines for America (A4A), the principal trade and service organization of the U.S. airline industry¹, appreciates the opportunity to provide comments on the initial scoping for a Programmatic Environmental Assessment (PEA) related to the Adams County Board of County Commissioner's proposal for a Commercial Space Launch Site at the Front Range Airport (FTG). Our overriding comment is that it is premature for FAA to be initiating an environmental review under the National Environmental Policy Act (NEPA) because the nature and scope of the proposal for the space launch site is unduly vague and fundamental safety and operational issues attendant to the potential project have not been properly or sufficiently assessed and communicated to relevant stakeholders.

Although FAA has set up a web page providing notice that it is initiating a PEA process, there is very limited information available on the underlying project itself.² With respect to FAA's NEPA obligations, the lack of information on the space launch site and proposed project prevents meaningful comment on the potential environmental issues and scoping for the PEA. More fundamentally, however, what limited information there is suggests that there could be significant impacts on the National Air Space (NAS) and on operations at Denver International Airport – yet there is no indication of where, when and how those issues are being assessed. The presentation document made available on the FAA web page states that space vehicles launched from FTG “would fly no less than 50 miles and no more than 150 miles away from Denver International Airport” and that “airspace would need to be cleared for roughly 30 minutes” while space vehicles launch. While that presentation also asserts that FAA will

¹ A4A's members are: Alaska Airlines, Inc.; American Airlines Group; Atlas Air, Inc.; Federal Express Corporation; Hawaiian Airlines; JetBlue Airways Corp.; Southwest Airlines Co.; United Continental Holdings, Inc.; and United Parcel Service Co. Air Canada, Inc. is an associate member.

² A4A reviewed FAA's web page at this link:
https://www.faa.gov/about/office_org/headquarters_offices/ast/environmental/nepa_docs/review/documents_progress/front_range/

Ms. Stacy Zee – FAA
July 13, 2017
Page 2

undertake a “safety” review, it does not provide any details on when or how that would be done nor does it provide information on how FAA might assess operational impacts to the NAS in general or on Denver International Airport. Notably, such assessments might be determinative either with respect to the use of FTG as a spaceport site in general or to the scope of what is proposed.

It may be that FAA is proposing to undertake a PEA rather than a project-level, site-specific environmental assessment because such fundamental questions about the potential project have not been addressed. It is A4A’s view, however, that even a PEA is premature. As a matter of priority, we urge FAA to proceed with critical safety and operational analyses of this potential project and to engage with interested stakeholders on such analyses before attempting to scope and assess environmental impacts.

Thank you for your consideration.

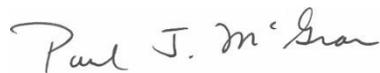
Sincerely yours,



Nancy N. Young
Vice President, Environmental Affairs



Laura A. McKee
Vice President, Airport Affairs



Paul J. McGraw
Vice President, Operations and Safety

Rogers, John

From: jennifer.pysher@aa.com
Sent: Thursday, July 13, 2017 4:32 PM
To: Spaceport_Colorado_PEA
Subject: Message from www.faa.gov: Spaceport_Colorado_PEA@icf.com

Follow Up Flag: Follow up
Flag Status: Flagged

This email was sent through the Federal Aviation Administration's public website. You have been contacted via an email link on the following page:
www.faa.gov/about/office_org/headquarters_offices/ast/environmental/nepa_docs/review/documents_progress/front_range/

Message:

Due to the close proximity of Front Range Airport to Denver International Airport, American Airlines is concerned with the potential disruption of DEN air traffic. How will the Spaceport impact airspace utilized by the commercial air carriers operating flights in and out of DEN?



July 13, 2017

Dan Reimer, Assistant City Attorney
Denver International Airport

Stacey M. Zee
Office of Commercial Space Transportation
Federal Aviation Administration
800 Independence Ave, SW
Washington, DC 20591

Re: Front Range Airport Programmatic Environmental Assessment

Comment 1 - Denver strongly encourages the FAA to incorporate the “proposed operational parameters” in the environmental document, any decision document, and any launch site operator license. In the June 13 scoping presentation, the FAA identified several “proposed operational parameters”, including several protections designed specifically to ensure that any RLV operations to/from FTG would not negatively impact the airspace surrounding Denver International Airport. Although the FAA presentation did not explain how the proposed operational parameters would be implemented, FAA representatives assured stakeholders verbally during the June 13 meeting that FAA approval would be conditioned on compliance with the operational parameters.

The PEA and any subsequent approval documents should be explicit on this point. The operational parameters should not constitute mere assumptions to aid in the examination of environmental consequences. Rather, it would seem more appropriate to incorporate the operational parameters directly into the description of the proposed action. Equally important, the operational parameters should be made conditions of any FONSI and/or ROD as well as conditions of the launch site operator license.

Denver appreciates that incorporation of these operational parameters will limit the types of RLVs that would be eligible for a launch operator license. At the same time, the development of these operational parameters appears to have been the critical event that allowed the stalled license application process to finally move forward. Indeed, the FAA has said explicitly that it would *not* issue a launch site operator license using RLVs with other operating profiles in light of the attendant impacts to the regional airspace.

The operational parameters must be carried forward and made mandatory. Without such protections and guarantees, this issue could be subject to reexamination at any time in the future as part of a launch operator license application. That cannot be the basis for moving forward and would do nothing to allay the concerns expressed by myriad stakeholders, particularly including the FAA itself.

While we appreciate that Adams County and/or the FAA might wish to reexamine the operational parameters at some point in the future, doing so should be subject to a higher level of scrutiny and burden and come in the form of a supplement to the PEA and a proposed change in the conditions of the FONSI, ROD and launch site operator license.

Comment 2 – Denver encourages the FAA to reexamine whether a Programmatic Environmental Assessment is the right environmental document to examine the proposed action and its alternatives. We understand and





appreciate the thinking behind the decision to pursue a PEA expressed in the June 13 presentation material and associated discussion during the stakeholder meeting. Denver’s concern is two-fold. First, we question whether the proposed action fits within the parameters for a programmatic EA set forth by CEQ and the FAA. According to FAA Order 1050.1F, Section 3-2, “A programmatic review should assist decisionmakers and the public in understanding the environmental impact from proposed *large scope federal actions and activities*.” (emphasis added) Programmatic EAs and EISs have been used historically for broad-based policies, programs covering a wide geographic scope, etc. We are not aware of programmatic reviews being conducted previously in connection with any application for a launch site operator license.

The FAA’s decision appears premised on the fact that it is examining a “generic” horizontal RLV, rather than a specific vehicle currently in use or in design/testing. At the same time, it seems inherent in every application for a launch site operator license that the precise details of the vehicle and intended operations are unknown (and will remain so until an application is filed for a launch operator license). Indeed, this case would seem particularly inappropriate for programmatic review, considering the extensive operational parameters discussed in Comment 1. In short, the proposed action is quite specific and not the kind of “large scope federal action” for which programmatic review was designed or intended.

Our second concern is that the FAA’s decision to pursue a programmatic EA will dramatically reduce the level of disclosure and transparency regarding the potential environmental consequences of the proposed action and its alternatives. As the FAA acknowledges in the June 13 presentation materials, the examination of environmental impacts in a PEA is “primarily qualitative” rather than quantitative.

Denver is acutely aware of the extent to which airport neighbors wish to know and understand noise, air quality, land use compatibility and other impacts associated with airport projects, and to develop their own opinions about the significance of such impacts. We worry that the integrity and credibility of the environmental review will suffer with the programmatic approach. While subsequent FAA decisions will be examined in tiered environmental documents in the future, this will do little to relieve concerns today that the environmental review is being given short shrift.

Comment 3 – In general, DEN encourages the FAA to continue to work within the “proposed operational parameters” and approve a launch site operator license only upon determining that doing so will not negatively impact the regional airspace.

DEN represents an important component of the national airport system that will serve more than 60 million passengers in 2017, handle an average 1,500 flight operations per day, and represents connection to the 3rd largest network of domestic destinations. It is also the single largest economic engine in the Rocky Mountain region, representing an annual economic impact of \$26 billion to the regional economy, according to a CDOT study conducted in 2014.

Further, the airspace surrounding DEN is complex and is transited by aircraft using multiple general aviation airports, military airfields, and enroute traffic at high altitude. Again, we understand that the FAA informally has advised that the material negative impacts to the airspace surrounding DEN will limit the type of RLVs that might operate to/from FTG.

We strongly encourage the FAA and the applicant for the launch site operator license to continue pursue a solution that does not impact airspace surrounding DEN beyond normal operations at FTG.



Appendix F

Agency Consultation and Tribal Coordination

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U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

OCT 6 2015

Edward C. Nichols
State Historic Preservation Officer
History Colorado
1200 Broadway
Denver, CO 80203

SUBJECT: Section 106 Consultation for Proposed Colorado Spaceport at Front Range Airport in Adams County, Colorado

Dear Mr. Nichols,

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Adams County Board of County Commissioners' (BOCC) proposal to operate a commercial space launch site at the Front Range Airport (FTG) in Adams County (Attachment 1) and to offer the site to commercial launch operators for the operation of horizontal take-off and horizontal landing Reusable Launch Vehicles (RLVs) and engine testing. The project, known as Spaceport Colorado, would be located at FTG in southern unincorporated Adams County, approximately nine miles southeast of Denver International Airport. To operate a commercial space launch site, the BOCC must obtain a launch site operator license from the FAA. Under the Proposed Action addressed in the EA, the FAA would: (1) issue a launch site operator license to the Adams County BOCC for the operation of a commercial space launch site at FTG; (2) provide approval to modify the existing Airport Layout Plan to reflect the designation of a launch site boundary and existing and future spaceport facilities and infrastructure.

The action of issuing a launch site operator license and the approval to modify an existing Airport Layout Plan, is considered a federal undertaking under the regulations of the Advisory Council for Historic Preservation (36 Code of Federal Regulations [CFR] § 800.16(y)) for Section 106 of the National Historic Preservation Act. This letter initiates consultation with your office regarding the proposed undertaking. A description of project activities, the project Area of Potential Effects (APE), identification of historic properties, and assessment of effects are outlined below.

Project Activities

The proposed project includes operation of the RLVs and infrastructure development at Front Range Airport. The BOCC proposes to offer the site to RLV operators to operate Concept Y RLVs, which are two-seat, piloted vehicles that would depart the runway under rocket power to carry humans and/or payloads on a suborbital flight to 330,000 feet and then return to land on the runway. The BOCC describes the operations of the horizontal take-off and horizontal landing Concept Y RLV to be similar to an aircraft, but instead of a jet or piston engine, it uses its own rocket propulsion system to depart the runway and would typically land with the engines off as a non-powered glider. The EA analyzes one operation per week or 52 launches per year during the timeframe of the launch site operator license (expected to be 2016-2020). Launch operators would be required to obtain a separate launch license from the FAA to operate from the proposed launch site. An

additional environmental review (and potential consultation) would be required to analyze the environmental impacts of the operations under the launch license.

The proposed project would also include the construction of a propellant storage area, mission preparation areas, a static hot fire test stand area, and other facilities to support spaceport operations. The BOCC has indicated that construction would take place immediately north and east of the existing FTG facilities within the airport property boundary, and in some cases, utilize existing FTG facilities for the project. All land for the proposed project is owned by the FTG and Adams County.

Area of Potential Effects

In accordance with 36 CFR § 800.4(a)(1), an APE needs to be established for the proposed undertaking in consultation with your office. The FAA has determined an APE in consideration of both potential direct and indirect effects to archaeological and architectural resources as a result of implementing the proposed undertaking. The proposed APE is an approximately 34-square mile area that includes the FTG property (Attachment 2). This APE was based on preliminary noise modeling for the project and represents the 65 decibel Day-Night Average Sound Level (DNL) noise contour for 10 flights per week (significantly greater than the currently proposed project).

Noise modeling for the project also included the potential effects of low level sonic booms that could potentially be heard in portions of Morgan, Washington, eastern Arapahoe, and eastern Adams County. The sonic booms would be comparable to the distant sound of thunder with a duration of less than one second. Due to the low calculated overpressures of 0.1 to 0.5 pounds per square foot, sonic boom levels from the RLVs are not expected to reach magnitudes that would cause public reaction or annoyance, damage to buildings, or significant impacts to historic properties. Consequently, the potential sonic boom footprint was not included in the APE.

For archaeological resources, potential effects would be limited to the area within the APE where ground disturbance would occur from construction of the propellant storage area, mission preparation areas, the static hot fire test stand area, and other facilities to support spaceport operations. Many of these areas are currently paved or have been previously disturbed due to previous airport construction activities. For architectural resources, potential effects would extend to the boundary of the APE. The FAA requests your concurrence on the determination of the APE.

Identification of Historic Properties

HDR, the EA consultant, conducted a Class I cultural resources records review of the APE in April 2013. Seventeen past cultural resources investigations have been conducted within the APE. These investigations documented 38 archaeological isolated finds and 1 archaeological site, all of which were evaluated as "Field Not Eligible." In addition, the surveys documented 12 "Officially Not Eligible" archaeological sites; and no "Officially Eligible archaeological sites." The one "Field Not Eligible" archaeological site is 5AM.1004, an unknown prehistoric open camp. It was not considered further since it is not near the proposed project and its significance as an archaeological site would not be affected by noise.

The search also identified eight previously recorded historic-era sites within the APE. These include a railroad corridor, road, windmill, and several farmsteads. Four have been determined "Officially Not Eligible" and four are "Field Not Eligible" properties. HDR conducted an expanded file search in December 2013. The two "Field Not Eligible" farm properties were found to be no longer extant; the two remaining properties, a railroad corridor and a road, are not property types whose significance would be affected by noise. One new cultural resource, the Front Range Airport Farmstead (5AM3123), was identified within the APE. This farmstead is an early to mid-twentieth century dryland wheat farm that consists of two standing buildings (a garage and an outhouse) dating to the first half of the twentieth century, the foundation of a residence constructed in 1968, the foundation of a barn dating to first half of the twentieth century, and a well constructed after 1955. Based on field and historical information, the Front Range Airport Farmstead

(5AM3123) is Not Eligible for the National Register of Historic Places (NRHP), as it lacks significance under any of the NRHP Criteria and its historic integrity is severely compromised.

HDR conducted a Class III cultural resources survey within areas of the airport property within the APE that would be affected by construction of proposed spaceport facilities. No archaeological resources or deposits were identified. The inventory report and site forms are attached. The FAA requests your concurrence regarding no known NRHP-listed or eligible historic properties within the APE.

Assessment of Effect

There are no known NRHP-listed or eligible historic properties within the APE. Therefore, there would be no direct effects from ground disturbing activities or noise associated with the proposed undertaking. The FAA requests concurrence with the finding of no historic properties affected.

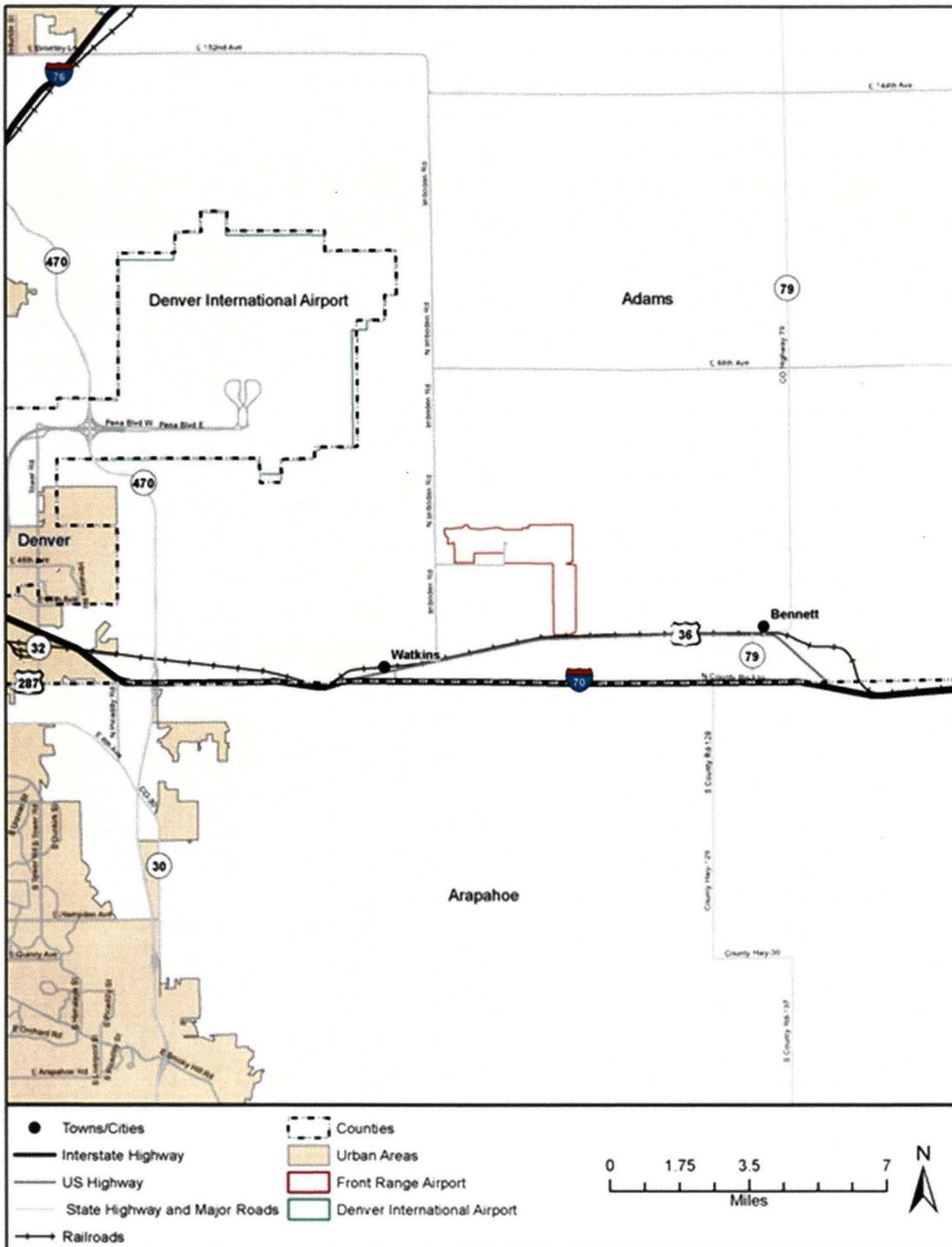
Please provide any comments you have regarding the proposed APE and finding of effect within 30 days. If you have any questions or need additional information on the project, please contact Ms. Stacey Zee of my staff at (202) 267-9305 or at Stacey.Zee@faa.gov. Thank you in advance for your input on this project.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

- Attachments:
1. Location of Front Range Airport
 2. Area of Potential Effects
 3. Site Forms and Inventory Report



Attachment 1. Location of Proposed Launch Site



HISTORY *Colorado*

October 19, 2015

Daniel Murray
Manager, Space Transportation Development Division
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Re: Section 106 Consultation for Proposed Colorado Spaceport at Front Range Airport in Adams County, Colorado (CHS #69114)

Dear Mr. Murray:

Thank you for your correspondence dated October 6, 2015 and received on October 16, 2015 by our office regarding the consultation of the above-mentioned project under Section 106 of the National Historic Preservation Act (Section 106).

After review of the additional provided information, we do not object to the Area of Potential Effects (APE) for the proposed project. After review of the provided survey information, we concur that resource 5AM.3123/Wagner/Tupps Farmstead is not eligible for the National Register of Historic Places.

We have questions concerning the Linear Survey near Control Tower portion of the proposed project area. The description of this 18.85-acre portion of the APE indicates this area is subject to the installation of subterranean fiber optic cables. The report states that this area was previously disturbed; however, there is no discussion of what that disturbance entails. What is the extent of the disturbance?

We request continued consultation in regards to our questions above before consulting on the assessment of adverse effect.

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CFR 60.4, in consultation with this office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties. If we may be of further assistance, please contact Jennifer Bryant, our Section 106 Compliance Manager, at (303) 866-2673 or jennifer.bryant@state.co.us.

Sincerely,

A handwritten signature in black ink, appearing to read 'Steve Turner', with a stylized flourish extending to the right.

Steve Turner, AIA
State Historic Preservation Officer



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

DEC 21 2015

Jennifer Bryant
Section 106 Compliance Manager
State Historic Preservation Office
History Colorado
1200 Broadway
Denver, CO 80203

SUBJECT: Section 106 Consultation for Proposed Colorado Spaceport at Front Range Airport in Adams County, Colorado (CHS #69114)

Dear Ms. Bryant:

This letter is in response to the question regarding the extent of disturbance in the linear section of the APE that was surveyed for the proposed Colorado Spaceport at Front Range Airport in Adams County, Colorado (CHS #69114). The linear survey area near the Control Tower encompassed the area between the perimeter access road (northern edge of survey area) and the airport boundary fenceline (southern edge of survey area) (Figure 1). Portions of this survey area have been disturbed by construction of the approximately 20-foot wide perimeter access road; construction of the 13-acre control tower site; installation of the airport boundary fence, and installation of underground communication lines near the control tower and adjacent to the airport boundary fence. In addition, the entire survey area has been superficially disturbed by cultivation (Figure 2). The proposed fiber optic line would likely be installed immediately adjacent to and south of the existing perimeter access road in the area previously disturbed by road construction.

Based on the surficial geology and surface disturbance, it is unlikely that any significant subsurface archaeological components are present in the linear survey area. However, if any cultural resources are discovered during excavation or grading activities, all construction activity will immediately stop and resources will be evaluated in terms of 36 CFR 60.4 in consultation with the Colorado SHPO.

If you have any questions or need additional information on the project, please contact Ms. Stacey Zee of my staff at (202) 267-9305 or at Stacey.Zee@faa.gov. Thank you in advance for your input on this project.

Sincerely,

Daniel Murray
Manager, Space Transportation Development Division

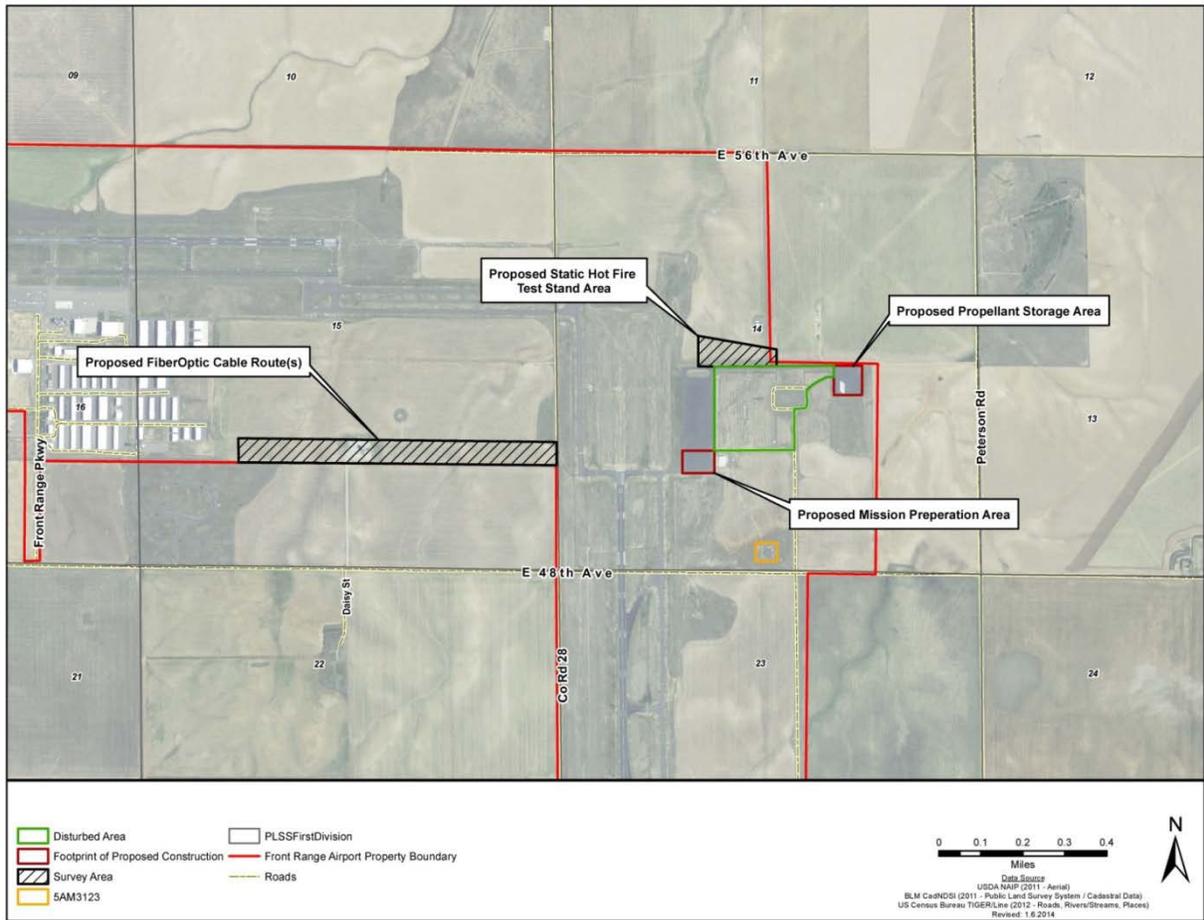


Figure 1. Front Range Airport Survey Areas

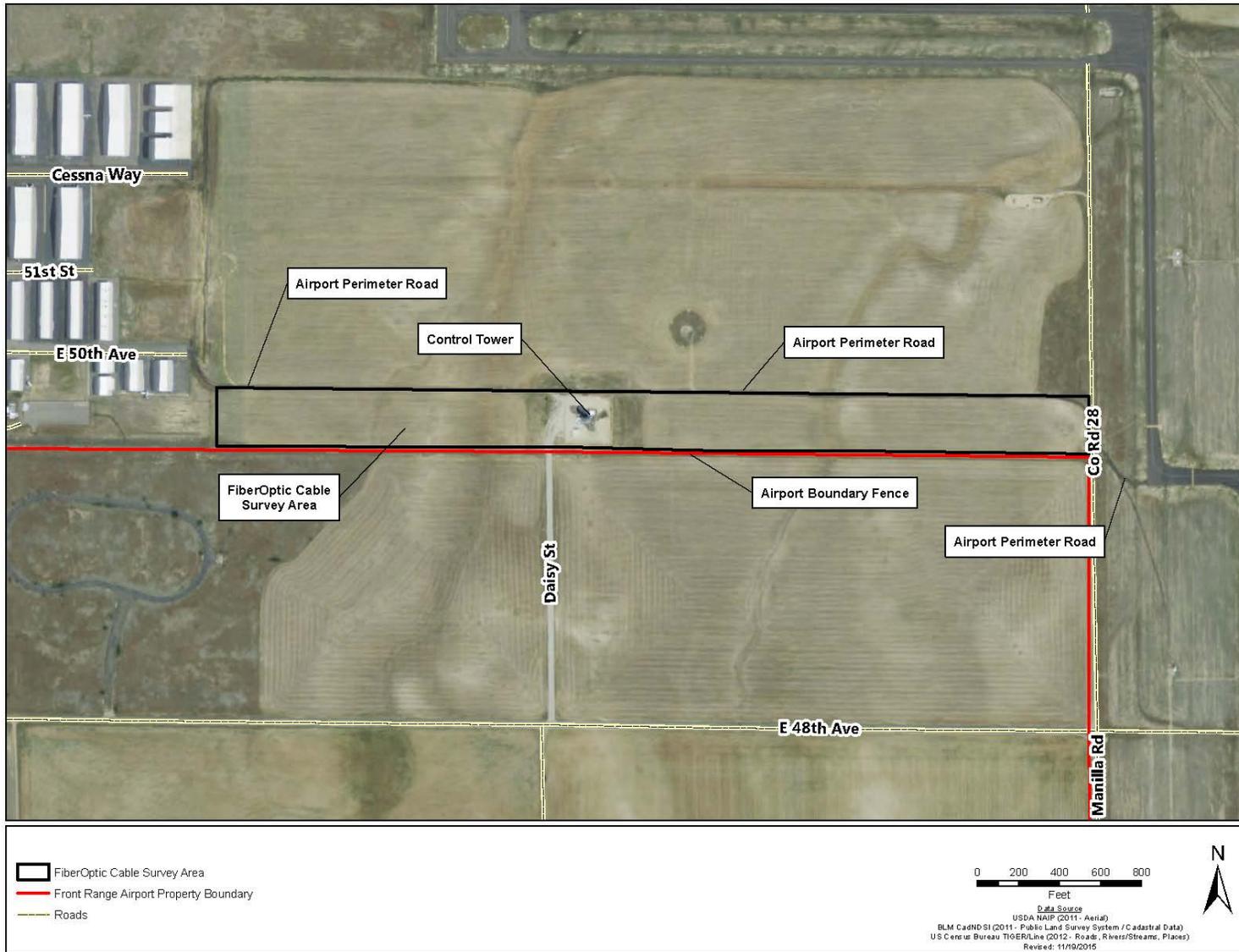


Figure 2. Survey Area and Disturbance



January 6, 2016

Daniel Murray
Manager, Space Transportation Development Division
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Re: Section 106 Consultation for Proposed Colorado Spaceport at Front Range Airport in Adams County, Colorado (CHS #69114)

Dear Mr. Murray:

Thank you for your correspondence dated December 21, 2015 and received on January 5, 2016 by our office regarding the consultation of the above-mentioned project under Section 106 of the National Historic Preservation Act (Section 106).

After review of the additional provided information, we do not object to the Area of Potential Effects (APE) for the proposed project. After review of the provided survey information, our previous concurrence that resource 5AM.3123/Wagner/Tupps Farmstead is not eligible for the National Register of Historic Places remains.

After review of the scope of work and assessment of adverse effect, we concur with the finding of *no historic properties affected* [36 CFR 800.4(d)(1)] under Section 106.

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CFR 60.4, in consultation with this office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties. If we may be of further assistance, please contact Jennifer Bryant, our Section 106 Compliance Manager, at (303) 866-2673 or jennifer.bryant@state.co.us.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Turner".

Steve Turner, AIA
State Historic Preservation Officer



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

APR 11 2018

Mr. Steve Turner, State Historic Preservation Officer (SHPO)
History Colorado, the Colorado Historical Society
1200 Broadway
Denver, CO 80203

SUBJECT: Section 106 Consultation for Proposed Colorado Spaceport at Front Range Airport in Adams County, Colorado

Dear Mr. Turner,

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing a Programmatic Environmental Assessment (PEA) to assess the potential environmental impacts of the Adams County Board of County Commissioners' (Applicant) proposal to operate a commercial space launch site at the Front Range Airport (FTG) in Adams County (Attachment 1) and to offer the site to commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. The project, known as Spaceport Colorado, would be located at FTG in southern unincorporated Adams County, approximately nine miles southeast of Denver International Airport. To operate a commercial space launch site, the Applicant must obtain a launch site operator license from the FAA. Under the Proposed Action addressed in the PEA, the FAA would: (1) issue a launch site operator license to the Applicant that would allow the Applicant to offer Spaceport Colorado to one or more commercial launch operators for the operation of horizontal take-off and horizontal RLVs; and (2) conditionally approve FTG's modified Airport Layout Plan (ALP) reflecting designation of a launch site boundary. If a prospective launch operator applies for a license to operate a launch vehicle at FTG, a separate environmental document, tiering off this PEA, would be required. The tiered environmental document would be a more detailed analysis based on vehicle specific operations. We would consult with your office again during the preparation of the tiered EA for vehicle operations.

The action of issuing a launch site operator license is considered a federal undertaking under the regulations of the Advisory Council for Historic Preservation (36 Code of Federal Regulations [CFR] § 800.16(y)) for Section 106 of the National Historic Preservation Act. This letter initiates consultation with your office regarding the proposed undertaking. A description of project activities, the project Area of Potential Effects (APE), identification of historic properties, and assessment of effects are outlined below.

Background

The FAA previously requested concurrence from the SHPO in an October 6, 2015 letter. The SHPO concurred with the finding of no historic properties affected on January 6, 2016. Since then, FTG has changed the proposed project. The Board of County Commissioners (Applicant) of Adams County,

Colorado previously considered offering Spaceport Colorado for launch operations using a vehicle that uses rocket engines to takeoff from the runway. Now, the Applicant is proposing to offer the site for vehicles that use jet engines to take off from the runway. Because of the project changes, the FAA is reinitiating consultation with the SHPO.

The FAA is preparing the PEA to analyze operation of the proposed commercial space launch site at FTG given that FTG does not have a commitment from a launch operator at this time. The analysis in this PEA uses a conceptual RLV and is based on broad assumptions regarding the location of propellant storage, mission preparation activities and related facilities, and the surface movement of RLVs associated with operation of a horizontal RLV at FTG. The purpose of describing these components is to conservatively assess the potential environmental impacts of launch vehicle operations at FTG.

Project Activities

The Applicant proposes to offer Spaceport Colorado to horizontal launch operators. The conceptual RLV analyzed in the PEA is a piloted vehicle that could carry flight participants and/or payloads on suborbital flights. The conceptual RLV would take off horizontally, under jet power, and fly to an operating area prior to igniting rocket engines to perform a suborbital flight. Upon descending, the conceptual RLV would restart its jet engines and return for a horizontal landing on the runway under jet power. The conceptual RLV would be similar in size to, and take off and land under jet power similar to, existing aircraft at FTG. The conceptual RLV would not require runway lengths or pavement strengths in excess of existing infrastructure at FTG.

The tiered EA will also analyze the impacts associated with facilities constructed to support launch operations. The PEA analyzes one operation per week, or 52 launches per year, during the timeframe of the launch site operator license (expected to be 2018–2022).

Existing infrastructure, including hangars and runways, would be used to support launch operations at FTG; however, several new facilities would be needed to support launch operations. These include the construction of concrete pads for the testing of rocket engines, concrete pads for mission preparation, installation of several new aboveground propellant and fuel storage tanks, an aboveground water storage tank, non-potable water line, high-speed fiber optic communication lines, and security fencing. New access roads would also be needed to support proposed launch operations (Attachment 2).

Detailed specifications for these facilities are unknown at this time, as they will depend on the specific needs of the launch vehicle to be licensed under a future licensing process. Conceptual locations for these facilities are included for the purposes of this analysis. Should a launch operator be identified, a separate environmental document tiered off the PEA would be completed that would include the details on the exact RLV and associated facilities required to support operations. We would consult with your office again during the preparation of the tiered EA for vehicle operations and associated facilities.

Please note, all land for the proposed project is owned by FTG and Adams County.

Area of Potential Effects

In accordance with 36 CFR § 800.4(a)(1), an APE needs to be established for the proposed undertaking in consultation with your office. The FAA has defined an APE in consideration of both potential direct and indirect effects to archaeological and architectural resources. The proposed APE is based on noise modeling for the project and is defined by the 65 decibel Day-Night Average Sound Level (DNL) noise contours for 1 flight per week (Attachment 3). In Attachment 3, the 65 dB DNL noise contours (which include baseline noise levels and noise generated by the RLV and static engine testing) are shown in red.

The 65 DNL noise contours are located entirely within the FTG property boundary and includes construction areas. The baseline noise environment at FTG includes noise generated by existing aircraft operations, automobile traffic from Interstate 70, periodic overflights of aircraft to/from Denver International Airport, and the Union Pacific Railroad. The current noise levels in the APE are characteristic of rural residential areas that experience periodic interruptions from transient vehicular noise. Noise modeling shows that although sonic booms would be produced during the vehicle's descent, the overpressures would not be high enough to cause structural damage to architectural resources (Attachment 4). The highest overpressure created by the sonic boom is 0.7 pounds per square foot. Therefore, the sonic boom footprint is not included in the APE.

For archaeological resources, potential effects would be limited to the area within the APE where ground disturbance would potentially occur from construction of the propellant storage area, mission preparation areas, the static hot fire test stand area, and other facilities to support spaceport operations. The exact location of these facilities are not known at this time. Many of these areas are currently paved or have been previously disturbed due to previous airport construction activities. For architectural resources, potential effects would extend to the boundary of the APE. The FAA requests your concurrence on the determination of the APE.

Identification of Historic Properties

The FAA conducted a Class I cultural resources records review of the APE, finding seventeen past cultural resources investigations have been conducted within the APE. These investigations documented 38 archaeological isolated finds and one archaeological site, all of which were evaluated as "Field Not Eligible." In addition, the surveys documented 12 "Officially Not Eligible" archaeological sites and no "Officially Eligible" archaeological sites. The one "Field Not Eligible" archaeological site is 5AM.1004, an unknown prehistoric open camp. It was not considered further since it is not near the proposed project, and its significance as an archaeological site would not be affected by noise.

The search also identified eight previously recorded historic-era sites within the APE. These include a railroad corridor, road, windmill, and several farmsteads. Four have been determined "Officially Not Eligible" and four are "Field Not Eligible" properties. Upon further investigation, the two "Field Not Eligible" farm properties were found to be no longer extant; the two remaining properties, a railroad corridor and a road, are not property types whose significance would be affected by noise. One new cultural resource, the Front Range Airport Farmstead (5AM3123), was identified within the APE. This farmstead is an early to mid-twentieth century dryland wheat farm that consists of two standing buildings (a garage and an outhouse) dating to the first half of the twentieth century, the foundation of a residence constructed in 1968, the foundation of a barn dating to first half of the twentieth century, and a well constructed after 1955. Based on field and historical information, the Front Range Airport Farmstead (5AM3123) is Not Eligible for the National Register of Historic Places (NRHP), as it lacks significance under any of the NRHP Criteria, and its historic integrity is severely compromised.

The PEA contractor conducted a Class III cultural resources survey within areas of the airport property within the APE that would be affected by construction of proposed spaceport facilities. No archaeological resources or deposits were identified. The FAA requests your concurrence regarding no known NRHP-listed or eligible historic properties within the APE.

Assessment of Effect

There are no known NRHP-listed or eligible historic properties within the APE. Therefore, there would be no direct effects from ground disturbing activities associated with the proposed undertaking. The

increase in noise at the airport would be minimal, and there are no architectural resources eligible for the NRHP within the APE that would be adversely affected by changes to the setting due to noise from the proposed undertaking. The FAA requests concurrence with the finding of *no historic properties affected*.

Please provide any comments you have regarding the proposed APE, identification of historic properties, and finding of effect within 30 days. If you have any questions or need additional information on the project, please contact Ms. Stacey Zee of my staff at (202) 267-9305 or at Stacey.Zee@faa.gov. Thank you in advance for your input on this project.

Sincerely,

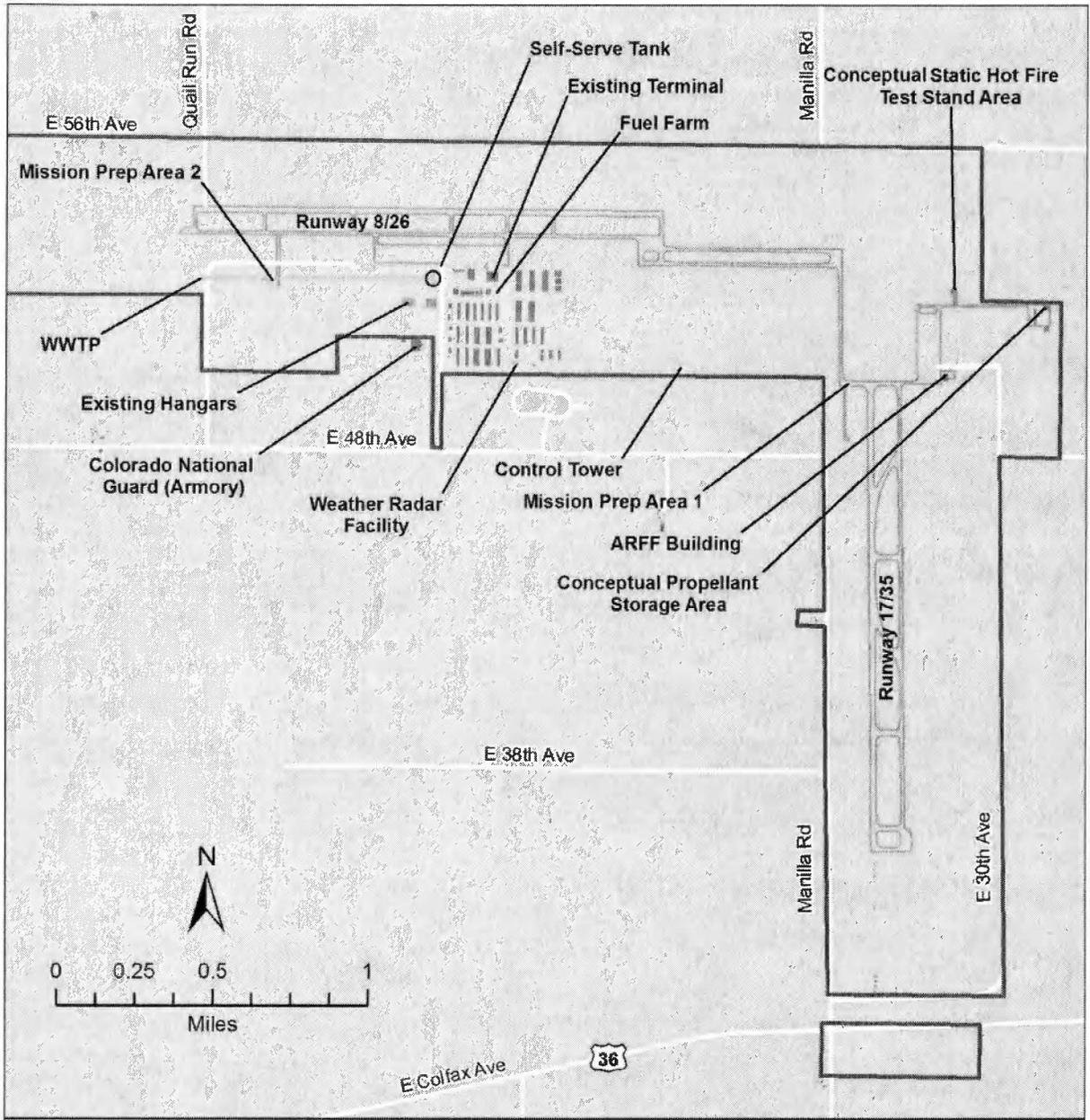


Daniel Murray
Manager, Space Transportation Development Division

- Attachments:
1. Location of Front Range Airport
 2. Existing and Conceptual Facilities at Front Range Airport
 3. Area of Potential Effects
 4. Sonic Boom Footprint



Attachment 1. Location of Front Range Airport

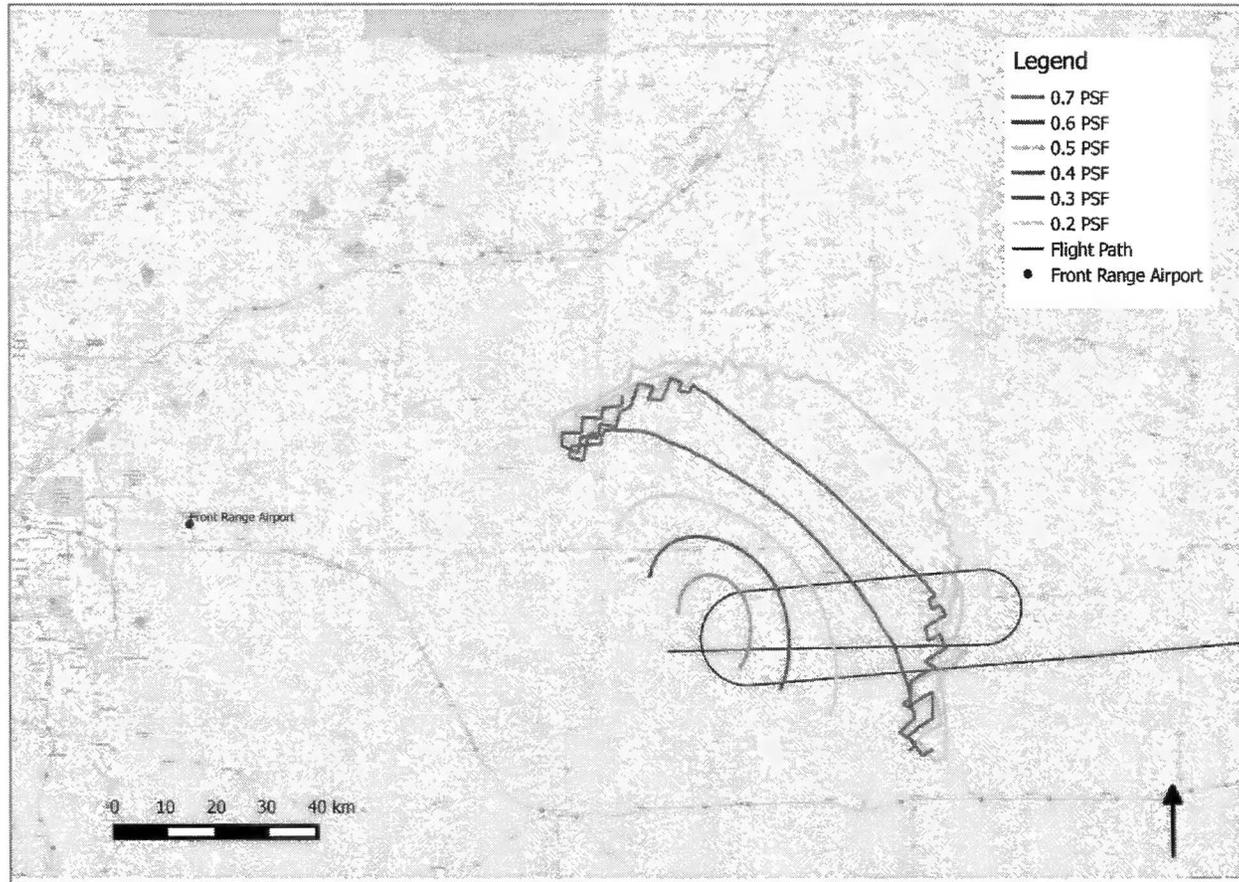


- | | | | |
|---|--|---|--|
| ○ | Conceptual Water Storage Tanks | ▨ | Conceptual Mission Preparation Areas |
| — | Conceptual Water Lines | ▨ | Conceptual Propellant Storage Area |
| — | Conceptual Access Road | ▨ | Conceptual Static Hot Fire Test Stand Area |
| — | Proposed Launch Site Boundary
(FTG Airport Property Boundary) | ▨ | Hangars |
| ▨ | Existing Buildings | | |

Attachment 2. Existing and Conceptual Facilities at Front Range Airport



Attachment 3. Area of Potential Effects



Attachment 4. Sonic Boom Footprint



OFFICE of ARCHAEOLOGY and HISTORIC PRESERVATION

Daniel Murray
Manager, Space Transportation Development Division
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

MAY 03 2018

Re: Section 106 Consultation for Proposed Colorado Spaceport at Front Range Airport in Adams County, Colorado (CHS #69114)

Dear Mr. Murray:

Thank you for your correspondence dated April 11, 2018 and received on April 23, 2018 by our office regarding the consultation of the above-mentioned project under Section 106 of the National Historic Preservation Act (Section 106).

After review of the provided information, we do not object to the proposed Area of Potential Effects (APE) for the proposed project.

After review of the provided information, we concur with the findings of previously recorded archaeological and historic resources as identified in the Class I cultural resources records review. We concur that (5AM.3123) Front Range Airport/Wagner/Tupps Farmstead is *not eligible* for the National Register of Historic Places.

After review of the scope of work and assessment of adverse effect, we concur with the recommended finding of *no historic properties affected* [36 CFR 800.4(d)(1)] under Section 106.

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CFR 60.4, in consultation with this office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings. Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

Thank you again for the opportunity to consult. If there are any questions please contact Jason O'Brien, Section 106 Compliance Manager, at (303) 866-2673 or Jason.obrien@state.co.us.

Sincerely,


Steve Turner, AIA
State Historic Preservation Officer



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW.
Washington, DC 20591

DEC 21 2015

Doug Laye
Mountain-Prairie Section 7 Coordinator
U.S. Fish and Wildlife Service
134 Union Boulevard, Suite 300
Lakewood, Colorado 80228

SUBJECT: Request for Concurrence on Effects Determination for Federally Listed Species from the Proposed Operation of Spaceport Colorado at Front Range Airport, Adams County, Colorado

Dear Mr. Laye:

In accordance with section 7 of the Endangered Species Act (ESA), the Federal Aviation Administration (FAA) is requesting concurrence from the U.S. Fish and Wildlife Service (USFWS) that the proposed operation of a commercial space launch site at Front Range Airport (FTG) in Adams County, Colorado, and associated launch operations and engine testing *may affect, but is not likely to adversely affect* the Preble's meadow jumping mouse (*Zapus hudsonius preblei*).

Project Description

The Board of County Commissioners (Applicant) of Adams County, Colorado proposes to operate a commercial space launch site (referred to as Spaceport Colorado) at FTG, which is located approximately 30 miles east of Denver, Colorado (see Figure 1). The Applicant would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. To operate a commercial space launch site, the Applicant must obtain a launch site operator license from the FAA. Under the Proposed Action, the FAA would: (1) issue a launch site operator license to the Applicant for the operation of a commercial space launch site at FTG; (2) issue launch licenses to commercial operators to launch RLVs from FTG; and (3) provide unconditional approval to modify the existing Airport Layout Plan to reflect the location of the launch site boundary, aboveground propellant and fuel storage tanks, concrete pads for mission preparation, a concrete pad for static hot-fire engine testing, an aboveground water storage tank and water line, high-speed fiber optic communication lines, security fencing, and access roads.

The Applicant is proposing to operate the Concept Y RLV at FTG. The Concept Y RLV is a two-seat piloted, transport vehicle that would carry humans and/or payloads on a suborbital flight to 330,000 feet and then return to land on the take-off runway. The Concept Y RLV is a horizontal take-off and horizontal landing vehicle, but instead of a jet or piston engine, it uses its

own fully reusable rocket propulsion system to depart the runway and would typically land with the engines off as a non-powered glide. Because of the speeds the RLV would attain, sonic booms would be generated during launch vehicle ascent and reentry.

The Applicant proposes to begin launch operations in 2017 and continue through 2021. The frequency of launch operations would be one per week or 52 per year, for a total of 234 launch operations over the proposed five-year period of Concept Y RLV operations at FTG (see Table 1). All launch operations would occur during the day (i.e., between the hours of 7:00am and 10:00pm).

Table 1. Proposed Launch Operations for Concept Y RLV at FTG

Year	Frequency	Total Number of Launch Operations per Year*
Mid-2017	1 per week	26**
2018	1 per week	52
2019	1 per week	52
2020	1 per week	52
2021	1 per week	52
Total Number of Launch Operations from Mid-2017 to 2021		234

Note: *One launch operation includes a launch and reentry. **Launches proposed to begin in mid-2017.

Existing infrastructure, including hangars and runways, would be used to support launch operations at FTG. Testing of rocket engines would be performed from a designated engine test pad. The test pad, approximately 20 feet by 20 feet, would be constructed of reinforced concrete and located in an open area north of the ARFF (See Figure 2). In addition, construction of concrete pads for mission preparation and several new aboveground propellant and fuel storage tanks would be needed to support Concept Y RLV operations. Installation of an aboveground water storage tank and non-potable water line, as well as high-speed fiber optic communication lines, security fencing, and access roads would also support proposed launch operations (see Figure 2).

Action Area

The action area is defined as all areas to be affected directly or indirectly by the Federal action. Thus, the action area includes FTG and the surrounding area that would experience potential impacts from implementation of the Proposed Action, including construction and operations. Physical impacts from construction activities (e.g., soil disturbance) would be limited to the property boundary of FTG. Similarly, noise generated from construction of the engine test pad, and installation of aboveground propellant and water storage tanks, high-speed fiber optic communication lines, security fencing, and access roads would not be heard outside the airport property. Noise generated by sonic booms represents the potential impact with the largest geographic extent. Therefore, the action area is defined by the sonic boom contour/footprint.

HDR, the Environmental Assessment consultant, conducted the noise and sonic boom analysis. Two sonic booms would be generated during a launch—one during ascent and another during vehicle reentry. The sonic boom generated during ascent would not be heard on the ground due to the steep ascending flight path angle of the Concept Y RLV. Sonic booms generated by the

launch vehicle during reentry would encompass an area of approximately 691 square miles and would include portions of Adams, Arapahoe, Morgan, and Washington Counties (see Figure 3).

Federally Listed Species that May be Affected by the Proposed Action

Pursuant to the ESA and the National Environmental Policy Act, the FAA has reviewed information regarding federally listed species and designated critical habitat that may be present in the action area. The FAA has determined the Proposed Action would have no effect on critical habitat, because (1) all construction activities would occur at FTG, and (2) there is no designated critical habitat present at FTG. Therefore, critical habitat is not addressed further in this analysis.

The U.S. Fish and Wildlife Service’s Information, Planning, and Conservation System (IPaC) (<http://ecos.fws.gov/ipac/>) was used to identify federally listed species that have the potential to occur within the four counties in the action area (Table 2). No species are listed for Washington County.

Table 2. Federally Listed Species Potentially Occurring in the Action Area

Name	Status	County Occurrence ¹
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	T	Adams, Arapahoe
Preble’s meadow jumping mouse (<i>Zapus hudsonius preblei</i>)	T	Adams, Arapahoe, Morgan
Ute ladies’-tresses (<i>Spiranthes diluvialis</i>)	T	Adams, Arapahoe, Morgan
Colorado butterfly plant (<i>Gaura neomexicana</i> var. <i>coloradensis</i>)	T	Adams

Notes: T = Threatened

¹ County occurrence based on species listings by county provided at <http://ecos.fws.gov/ipac/>; as of March 9, 2015.

In addition to the four species listed in Table 2, IPaC identifies five species that should be considered in an effects analysis under specific conditions: the least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), pallid sturgeon (*Scaphirhynchus albus*), and Western prairie fringed orchid (*Platanthera praeclara*). The USFWS has determined that water depletions to the South Platte River Basin may adversely affect these species and their designated critical habitat along the Platte River in central Nebraska. However, because this project will not require any water depletions that could affect these species, they are not considered in this effects analysis.

The Ute ladies’-tresses occurs in moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes where the soil is seasonally saturated within 18 inches of the surface. The Colorado butterfly plant is found in moist areas of floodplains, on sub-irrigated, alluvial soils on level or slightly sloping floodplains, and drainage bottoms at elevations of 5,000 to 6,400 feet. Neither of these plant species is known to occur on FTG property and there is no suitable habitat for these species within the property boundary. Therefore, the FAA has determined the Proposed Action would have *no effect* on the Ute ladies’-tresses and Colorado butterfly plant.

Although the Mexican spotted owl is listed for Adams and Arapahoe Counties, this species uses mature, old growth forests. No forested habitats of this type are located in the eastern portions of Adams or Arapahoe County where the sonic boom footprint is located (Figure 3). Therefore, the FAA has determined the Proposed Action would have *no effect* on the Mexican spotted owl.

The Preble's meadow jumping mouse ranges from southeastern Wyoming, southward along the eastern edge of the Front Range foothills and south to Colorado Springs in El Paso County. It inhabits heavily vegetated streamside riparian habitats of both permanent and intermittent streams with adjacent grassland cover. This species depends on well-developed, plains riparian vegetation with relatively undisturbed grassland communities and a nearby water source, as it relies on these riparian habitats to feed, breed, shelter, and hibernate (USFWS 2014). While there are no areas with riparian habitat suitable for the Preble's meadow jumping mouse within the FTG property boundary, there is the potential for suitable habitat within the sonic boom footprint.

Potential Effects to the Preble's Meadow Jumping Mouse

Because there are no listed species within the FTG property boundary where construction activities would occur, the only component of the Proposed Action that has the potential to affect the Preble's meadow jumping mouse is the transmission of sonic booms during reentry of the Concept Y RLV. As stated above and summarized in Table 1, reentry operations would generate a maximum of 234 sonic boom events over the proposed 5-year operating period at FTG. Sonic boom events could occur once a week during the operating period.

Characteristics of Sonic Booms

The Concept Y RLV has the potential to create a sonic boom, an impulsive sound similar to thunder. A sonic boom is the sound associated with the shock waves created by a vehicle traveling through air faster than the speed of sound. HDR, the Environmental Assessment contractor, conducted a sonic boom analysis for the supersonic reentry portion of the nominal Concept Y RLV launch events landing on Runway 8/26 at FTG. As stated previously, the sonic boom resulting from RLV departures would not reach the ground due to the steep ascending flight path angle of the RLV.

The duration of a sonic boom is brief, less than a second, and the intensity is greatest directly under the flight path and weakens as distance from the flight track increases. The change in air pressure associated with a sonic boom is only a few pounds per square foot (psf) greater than normal atmospheric pressure. This is about the same pressure change experienced by a change in elevation of 20–30 feet, or riding an elevator down two or three floors. This additional pressure above normal atmospheric pressure is called overpressure. It is the sudden onset of the pressure change that makes the sonic boom audible (NASA 2014).

The sonic boom upon reentry of the Concept Y RLV was modeled using PCBoom4.¹ According to the flight path data, the vehicle would reenter the atmosphere in a supersonic descent with an angle around 80 degrees from horizontal. At around 130,000 feet, the vehicle would be traveling in excess of Mach 3, and then it would gradually reduce the angle of descent until at about 70,000 feet, where the angle would be approximately 15 degrees from horizontal. At this point.

¹ PCBoom4 is used by the U.S. Air Force Center for Engineering and Environment and is widely accepted to determine the specific pattern and amplitude of a sonic boom footprint.

the vehicle's speed is approximately Mach 1.5, and it would begin a U-turn to head back towards FTG. About half-way through this U-turn, at an elevation about 63,500 feet, the vehicle would slow to subsonic speed. As the vehicle begins its U-turn, the sonic boom shockwaves would overlap one another on the inside of the curve, and cause a "shockwave pileup" in the northeast portion of the sonic-boom footprint. Due to these overlapping or compounding shockwaves, some areas within Morgan and Washington Counties may experience sonic boom levels up to 0.5 psf. Overpressures in excess of 0.5 psf were not calculated at any location within the sonic boom footprint. Most areas within the sonic boom footprint would experience sonic boom levels around 0.1 psf. For context, a sonic boom of 1.0 psf is a relatively low magnitude event with respect to other commercial space launch vehicles and is comparable to the sonic booms of military jets. Previous research has indicated that some public reaction to a sonic boom could be expected with overpressures between 1.5 and 2 psf (Rogers 2013).

Effects of Sonic Booms on Wildlife

Animal species differ greatly in their responses to noise. Noise effects on wildlife can include ear drum rupture or temporary and permanent hearing threshold shifts; the masking of auditory signals, thereby disrupting species' ability to communicate; and non-auditory effects such as stress and hypertension, behavioral modifications, interference with mating or reproduction, and impaired ability to obtain adequate food, cover, or water. Overall, the literature suggests that species differ in their response to various types, durations, and sources of noise (Manci et al. 1988; Bowles 1995).

Many scientific studies have investigated the effects of aircraft noise and sonic booms on wildlife, and some have focused on wildlife "flight" due to noise. Ear drum rupture and temporary and permanent hearing threshold shifts are unlikely, given the noise levels produced by aircraft overflights. Although the effects are likely temporal, aircraft noise may cause masking of auditory signals and behavioral changes within exposed faunal communities. Natural factors which affect the reaction of animals to noise include season, group size, age and sex composition, on-going activity, motivational state, reproductive condition, terrain, weather, and temperament (Bowles 1995). Individual animal response to a given noise event or series of events also can vary widely due to a variety of factors, including time of day, physical condition of the animal, physical environment, the experience of the individual animal with noises, and whether or not other physical stressors (e.g., drought) are present (Manci et al. 1988). Consequently, it is difficult to generalize animal responses to noise disturbances across species.

One result of the Manci et al. (1988) literature review was the conclusion that, while behavioral observation studies were relatively limited, a general behavioral reaction in animals from exposure to aircraft noise is the startle response. The intensity and duration of the startle response appears to be dependent on which species is exposed, whether there is a group or an individual, and whether there have been some previous exposures. Responses range from flight, trampling, stampeding, jumping, or running, to movement of the head in the apparent direction of the noise source. It has been reported that the intensities and durations of the startle response decrease with the numbers and frequencies of exposures, suggesting no long-term adverse effects. Manci et al. (1988) report that the literature indicates that avian species may be more sensitive to aircraft noise than mammals.

Teer and Truett (1973) examined reproductive success in mourning doves, mockingbirds, northern cardinals, and lark sparrows when exposed to sonic booms of 1 psf or greater and found no adverse effects. Awbrey and Bowles (1990) in a review of the literature on the effects of aircraft noise and sonic booms on raptors found that the available evidence shows very marginal effects on reproductive success. Ellis et al. (1991) examined the effects of sonic booms (actual and simulated) on nesting peregrine falcons (*Falco peregrinus*), prairie falcons (*Falco mexicanus*), and six other raptor species. While some individuals did respond by leaving the nest, the response was temporary, and overall there were no adverse effects on nesting. Lynch and Speake (1978) studied the effects of both real and simulated sonic booms on the nesting and brooding of eastern wild turkey (*Meleagris gallopavo silvestris*) in Alabama. Hens at four nest sites were subjected to between 8 and 11 combined real and simulated sonic booms. All tests elicited similar responses, including quick lifting of the head and apparent alertness for 10–20 seconds. No apparent nest failure occurred as a result of the sonic booms.

Conclusion

If present within the action area, the Preble's meadow jumping mouse could experience an estimated maximum of 234 sonic booms over the proposed 5-year operating period. Within the majority of the action area, sonic boom levels would be approximately 0.1 psf, which is less than a typical thunder clap. These events are expected to produce, at most, infrequent startle effects. As previous studies have found no adverse effects to birds when exposed to sonic booms greater than 1 psf, and as birds are likely to be more sensitive to aircraft noise than mammals, the FAA has determined the Proposed Action *may effect, but is not likely to adversely affect* the Preble's meadow jumping mouse within the action area.

The FAA appreciates your review of the proposed project and requests your concurrence with the effects determinations in this letter. If you have any questions, please contact Ms. Stacey Zee, of my staff, at 202-267-9305 or at Stacey.Zee@faa.gov.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Attachments: Figure 1. Regional Location of Front Range Airport
Figure 2. Existing and Proposed Facilities at Front Range Airport
Figure 3. Sonic Boom Footprint

References

- Awbrey, F.T., and A. E. Bowles. 1990. The Effects of Aircraft Noise and Sonic Booms on Raptors: A Preliminary Model and a Synthesis of the Literature on Disturbance. NSBIT Technical Operating Report No. 12. Prepared for Noise and Sonic Boom Impact Technology Advanced Development Program Office, Wright-Patterson AFB, OH.
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- Teer, J.G., and J.C. Truett. 1973. Studies on the effects of sonic booms on birds. Technical Report Number FFA-RD-73-148. Prepared for the Federal Aviation Administration, Washington, DC.
- USFWS (U.S. Fish and Wildlife Service). 2014. 5-Year Review for the Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*). http://ecos.fws.gov/docs/five_year_review/doc4463.pdf.

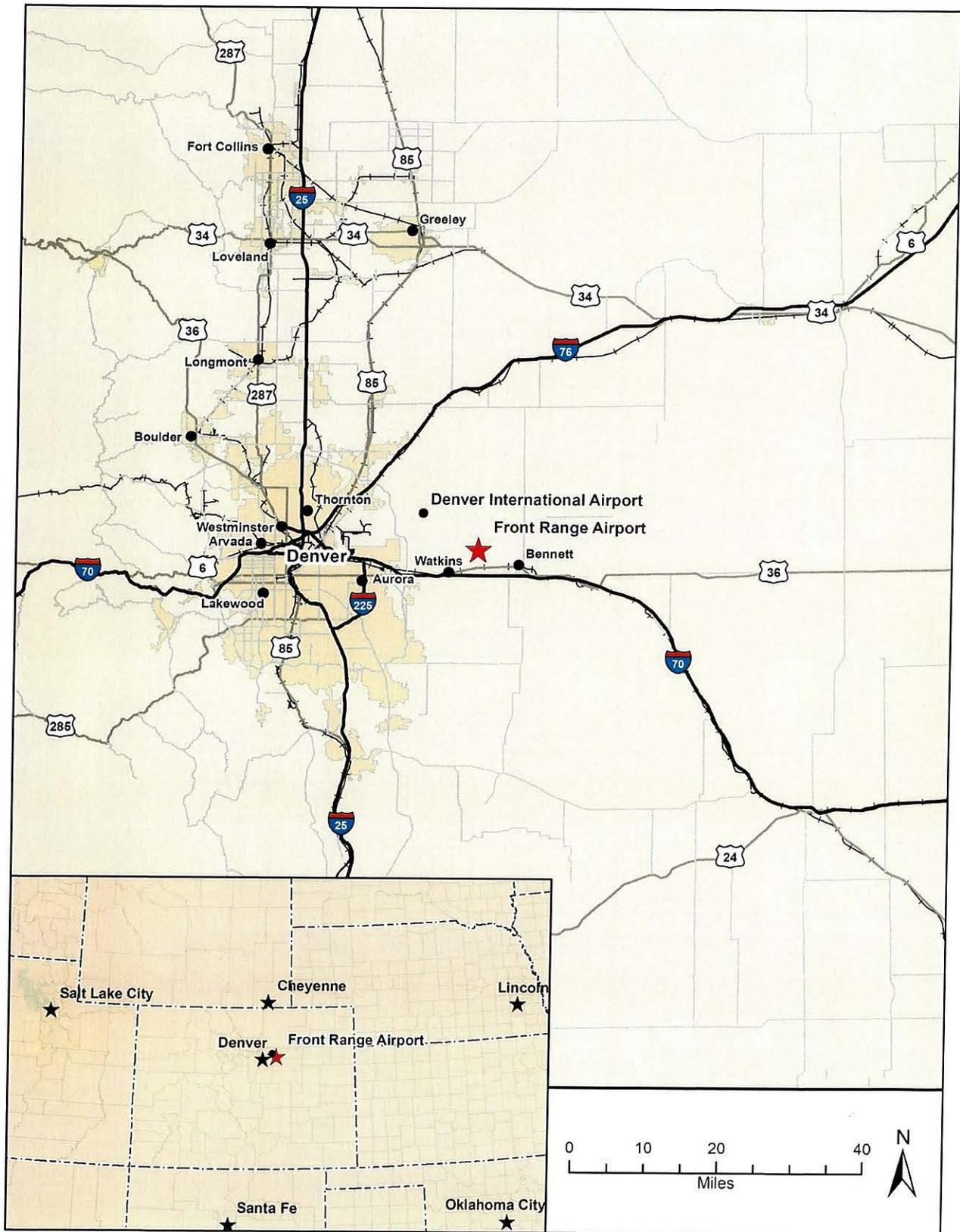


Figure 1. Regional Location of Front Range Airport

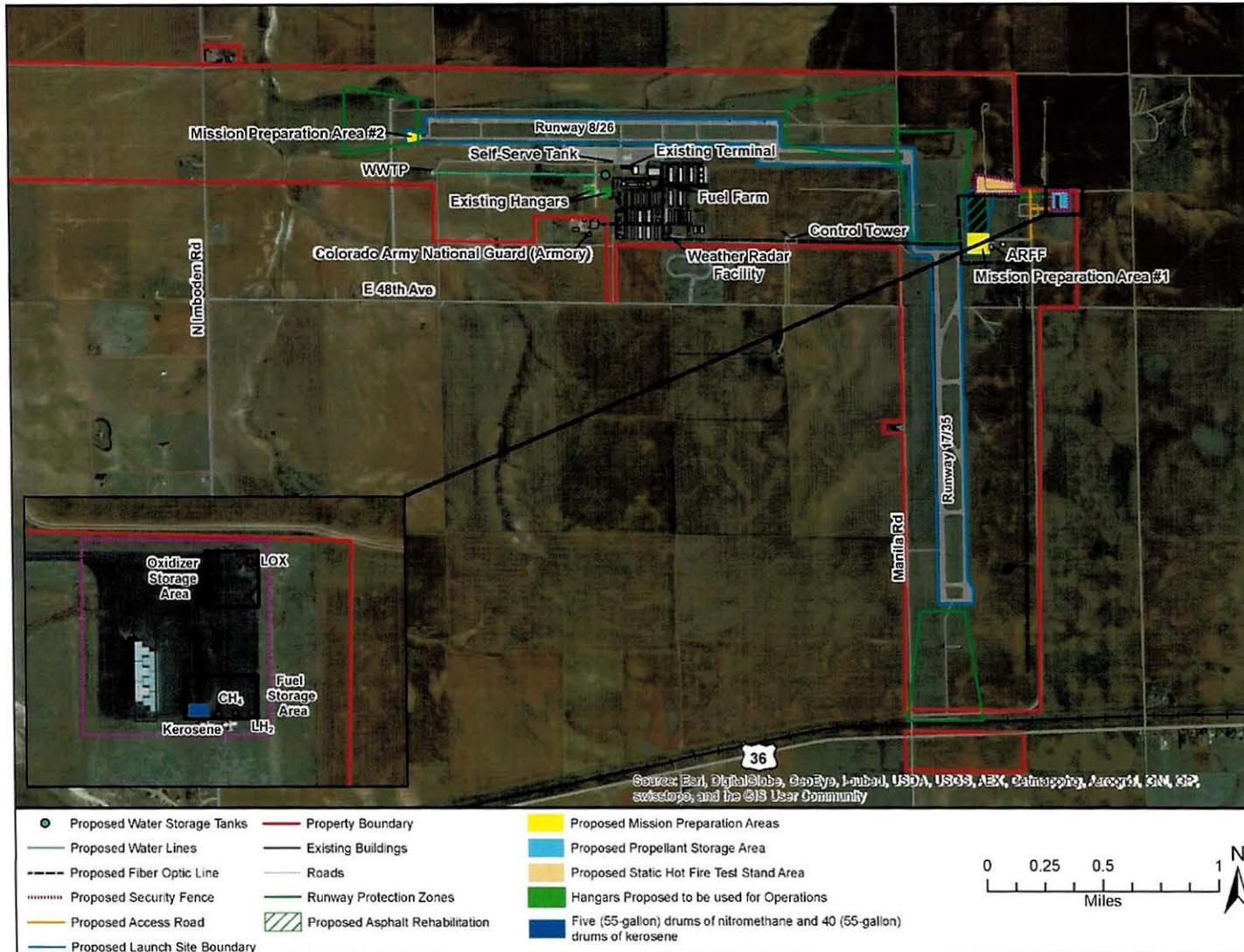


Figure 2. Existing and Proposed Facilities at Front Range Airport

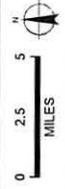
SPACEPORT COLORADO
 NOISE MODELING
 SONIC BOOM FOOTPRINT

NOTE: NOZZLE DIAMETER = 4"

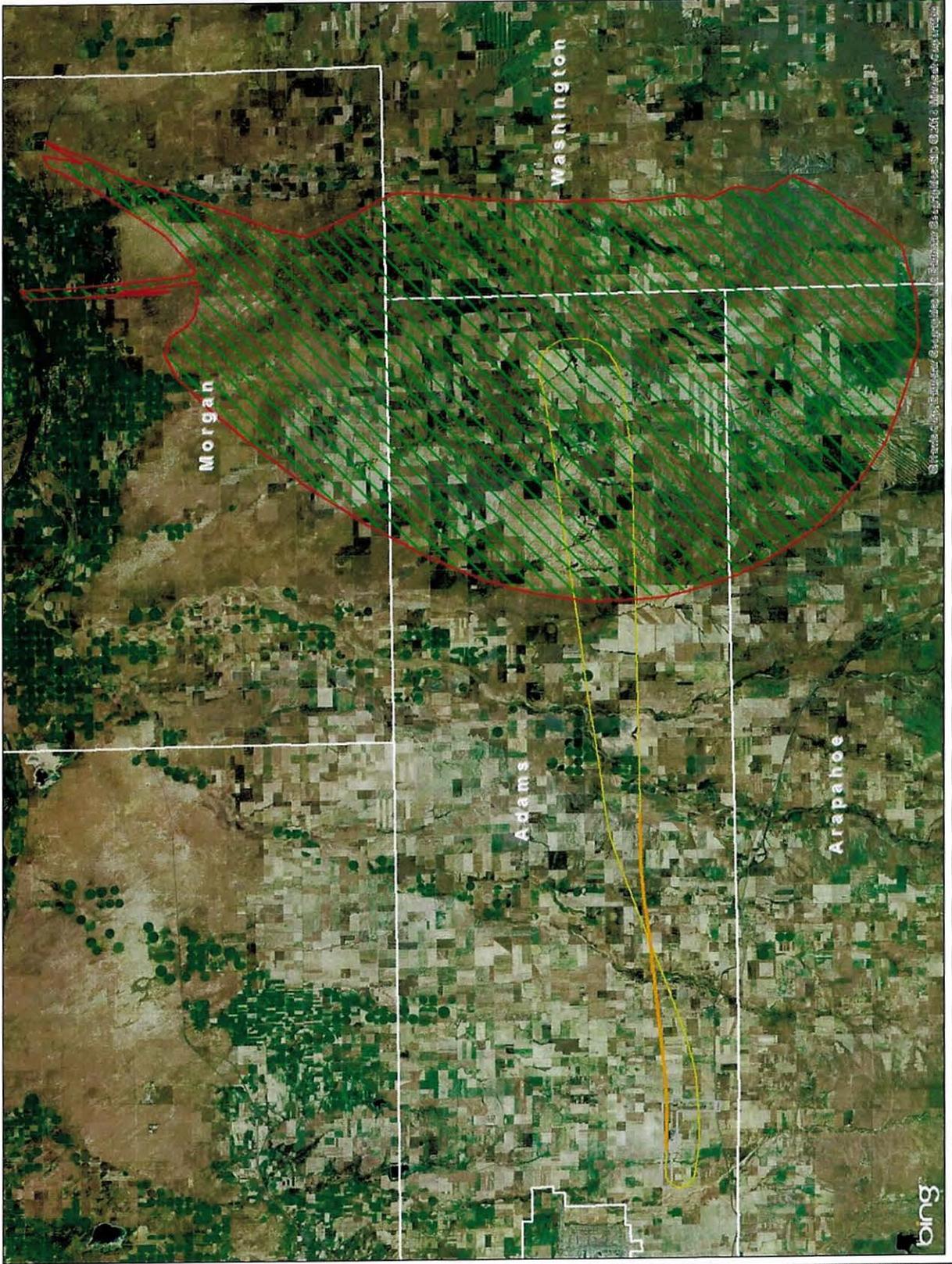


LEGEND

- Sonic Boom Footprint (~691 sqmi)
- Airport Boundary
- Flight Path**
- Rocket Powered Ascent
- Complete



4/21/2014



Teer and Truett (1973) examined reproductive success in mourning doves, mockingbirds, northern cardinals, and lark sparrows when exposed to sonic booms of 1 psf or greater and found no adverse effects. Awbrey and Bowles (1990) in a review of the literature on the effects of aircraft noise and sonic booms on raptors found that the available evidence shows very marginal effects on reproductive success. Ellis et al. (1991) examined the effects of sonic booms (actual and simulated) on nesting peregrine falcons (*Falco peregrinus*), prairie falcons (*Falco mexicanus*), and six other raptor species. While some individuals did respond by leaving the nest, the response was temporary, and overall there were no adverse effects on nesting. Lynch and Speake (1978) studied the effects of both real and simulated sonic booms on the nesting and brooding of eastern wild turkey (*Meleagris gallopavo silvestris*) in Alabama. Hens at four nest sites were subjected to between 8 and 11 combined real and simulated sonic booms. All tests elicited similar responses, including quick lifting of the head and apparent alertness for 10–20 seconds. No apparent nest failure occurred as a result of the sonic booms.

Conclusion

If present within the action area, the Preble's meadow jumping mouse could experience an estimated maximum of 234 sonic booms over the proposed 5-year operating period. Within the majority of the action area, sonic boom levels would be approximately 0.1 psf, which is less than a typical thunder clap. These events are expected to produce, at most, infrequent startle effects. As previous studies have found no adverse effects to birds when exposed to sonic booms greater than 1 psf, and as birds are likely to be more sensitive to aircraft noise than mammals, the FAA has determined the Proposed Action *may effect, but is not likely to adversely affect* the Preble's meadow jumping mouse within the action area.

The FAA appreciates your review of the proposed project and requests your concurrence with the effects determinations in this letter. If you have any questions, please contact Ms. Stacey Zee, of my staff, at 202-267-9305 or at Stacey.Zee@faa.gov.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

- Attachments: Figure 1. Regional Location of Front Range Airport
Figure 2. Existing and Proposed Facilities at Front Range Airport
Figure 3. Sonic Boom Footprint

U.S. FISH AND WILDLIFE SERVICE	
<input type="checkbox"/> NO CONCERNS	
<input checked="" type="checkbox"/> CONCUR NOT LIKELY TO ADVERSELY AFFECT	
<input type="checkbox"/> NO COMMENT	
	JAN 28 2015
DRUE L. DEBERRY, ACTING	DATE
COLORADO FIELD SUPERVISOR	

• no habitat will be affected
• indirect impacts are dismountable + insignificant because species is unlikely to occupy surrounding area.



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW.
Washington, DC 20591

APR 11 2018

Doug Laye
Mountain-Prairie Section 7 Coordinator
U.S. Fish and Wildlife Service
134 Union Boulevard, Suite 300
Lakewood, Colorado 80228

SUBJECT: Endangered Species Act Consultation for the Proposed Spaceport Colorado at Front Range Airport, Adams County, Colorado

Dear Mr. Laye:

In accordance with section 7 of the Endangered Species Act (ESA), the Federal Aviation Administration (FAA) is requesting concurrence from the U.S. Fish and Wildlife Service (USFWS) that the proposed operation of a commercial space launch site (referred to as Spaceport Colorado) at Front Range Airport (FTG) in Adams County, Colorado **may affect, but is not likely to adversely affect** the Preble's meadow jumping mouse (*Zapus hudsonius preblei*). A brief background, description of the proposed project, and discussion of potential effects to federally listed species is provided below.

Background

The FAA previously requested concurrence that the proposed Spaceport Colorado *may affect, but is not likely to adversely affect* the Preble's meadow jumping mouse in a December 21, 2015 letter. The USFWS concurred with the FAA on January 20, 2016. Since then, FTG has changed the proposed project. The Board of County Commissioners (Applicant) of Adams County, Colorado previously considered offering Spaceport Colorado for launch operations using a vehicle that uses rocket engines to takeoff from the runway. Now, the Applicant is proposing to offer the site for vehicles that use jet engines to take off from the runway. Because of the project changes, the FAA is reinitiating consultation with the USFWS.

The FAA is using a programmatic environmental assessment (PEA) to analyze the operation of the proposed commercial space launch site at FTG given that FTG does not have a commitment from a launch operator at this time. The analysis in this PEA uses a conceptual RLV and is based on broad assumptions regarding the location of propellant storage, mission preparation activities and related facilities, and the surface movement of RLVs associated with operation of a horizontal RLV at FTG. The purpose of describing these components is to conservatively assess the potential environmental impacts of launch vehicle operations at FTG. Should a prospective

launch operator apply for a license to operate a launch vehicle at FTG, a separate environmental document, tiering off this PEA, would be required. The tiered environmental document would be a more detailed analysis based on vehicle specific operations.

Project Description

The Applicant proposes to operate Spaceport Colorado at FTG, which is located approximately 30 miles east of Denver, Colorado (see Figure 1). The Applicant would offer the site to one or more commercial launch operators for the operation of horizontal take-off and horizontal landing reusable launch vehicles (RLVs) and engine testing. To operate a commercial space launch site, the Applicant must obtain a launch site operator license from the FAA. Under the Proposed Action, the FAA would: (1) issue a launch site operator license to the Applicant for the operation of Spaceport Colorado; and (2) conditionally approve FTG’s modified Airport Layout Plan showing the launch site boundary.

The PEA analyzes conceptual RLV operations at Spaceport Colorado. The conceptual RLV is a piloted vehicle that could carry flight participants and/or payloads on suborbital flights. The conceptual RLV would take off horizontally from the runway under jet power and fly to an operating area prior to igniting its rocket engine to perform a suborbital flight. Upon descent and return to subsonic speeds, the conceptual RLV would restart its jet engines and return for a horizontal landing on the runway under jet power. Because of the speeds the RLV would attain, sonic booms would be generated during launch vehicle ascent and descent.

For the purposes of this analysis, it is assumed the launch site operator license would be issued to the Applicant in 2018. However, actual launch operations would not begin until a launch license is issued to a commercial launch operator, which would be analyzed through a separate licensing process. Once a launch license is issued, the frequency of launch operations is anticipated to be a maximum of one per week or 52 per year, for a total of up to 234 launch operations over a five-year period (site operator licenses are issued for five years and are renewable upon request) (Table 1). All launch operations would occur during the day (i.e., between the hours of 7:00 a.m. and 10:00 p.m.).

Table 1. Proposed Launch Operations for Conceptual RLV at FTG

Year	Frequency	Total Number of Launch Operations per Year*
Year 1	1 per week	26**
Year 2	1 per week	52
Year 3	1 per week	52
Year 4	1 per week	52
Year 5	1 per week	52
Total Number of Launch Operations for the Five-Year Site License		234

Notes: *One launch operation includes a launch (takeoff) and descent (landing).

**Launches assumed to begin in mid-2018.

Existing infrastructure, including hangars and runways, would be used to support launch operations at FTG; however, several new facilities would be needed to support launch

operations. These include the construction of concrete pads for the testing of rocket engines, concrete pads for mission preparation, installation of several new aboveground propellant and fuel storage tanks, an aboveground water storage tank, non-potable water line, high-speed fiber optic communication lines, and security fencing. New access roads would also be needed to support proposed launch operations (Figure 2). Detailed specifications for these facilities are unknown at this time, as they will depend on the specific needs of the launch vehicle to be licensed under a future licensing process. Once a launch operator is identified, a separate environmental document that is tiered off the PEA will be completed that will include the details on the exact RLV and associated facilities required to support operations. We would consult with your office again during the preparation of the tiered EA for vehicle operations and associated facilities. Please note, all land for the proposed project is owned by FTG and Adams County.

Action Area

The action area is defined as all areas to be affected directly or indirectly by the Federal action. The action area includes FTG and the surrounding area that would experience potential impacts from construction, launch operations, and engine testing. Physical impacts from construction activities (e.g., soil disturbance) would be limited to the property boundary of FTG. Similarly, noise generated from construction of the engine test pad, and installation of aboveground propellant and water storage tanks, high-speed fiber optic communication lines, security fencing, and access roads would not be heard outside airport property. Noise generated by sonic booms represents the potential impact with the largest geographic extent. Therefore, the action area includes FTG and the sonic boom footprint.

Two sonic booms would be generated during a launch—one during ascent and another during vehicle descent. The sonic boom generated during ascent would not be heard on the ground due to the steep ascending flight path angle of the RLV. Sonic booms generated during descent would include portions of Adams, Arapahoe, Kit Carson, Lincoln, Morgan, Washington, and Yuma Counties (Figure 3).

Federally Listed Species in the Action Area

The FAA used the USFWS’s Information for Planning and Conservation (IPaC) system to identify federally listed species and critical habitat in the action area (Table 2). There is no critical habitat in the action area.

Table 2. USFWS Species List for the Action Area

Species ¹	Status	Habitat Description	Potential for Occurrence
Plants			
Ute ladies' tresses (<i>Spiranthes diluvialis</i>)	T	Floodplains and sub-irrigated wetlands	No potential occurrence due to lack of suitable habitat.
Colorado butterfly plant (<i>Gaura neomexicana</i> var. <i>coloradensis</i>)	T	Wetlands and floodplains	No potential occurrence due to lack of suitable habitat.
Birds			

Table 2. USFWS Species List for the Action Area

Species ¹	Status	Habitat Description	Potential for Occurrence
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	T	Old growth forest with cliffs	No potential occurrence due to lack of suitable habitat.
Mammals			
Preble’s meadow jumping mouse (<i>Zapus hudsonius prebleii</i>)	T	Wetland and riparian areas with shrubs	No potential for occurrence at FTG due to lack of suitable habitat; potential for suitable habitat within the sonic boom footprint.
Black-footed ferret (<i>Mustella nigripes</i>)	E	Depend on prairie dogs for survival—food and shelter; reintroduced at sites throughout Colorado	Although there are prairie dog colonies nearby, this species does not occur within the action area. Action area does not contain a reintroduction site.

¹ The USFWS species list also includes the least tern, piping plover, whooping crane, pallid sturgeon, and Western prairie fringed orchid. See discussion below table for reason why these five species are not considered in the analysis.

Source: USFWS 2018

Status Codes: E = Endangered; T = Threatened

In addition to the five species listed in Table 2, IPaC identifies five species that should be considered in an effects analysis under specific conditions: least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), pallid sturgeon (*Scaphirhynchus albus*), and Western prairie fringed orchid (*Platanthera praeclara*). The USFWS has determined that water-related activities or water use in the North Platte, South Platte, and Laramie River Basins may affect these species in Nebraska. Because the project would not require any water depletions that could affect these species, they are not considered in this effects analysis. Should a launch operator be identified, a separate environmental document tiered off the PEA would be completed that would include the details on the exact RLV and associated facilities required to support operations. Dewatering during facility construction is unknown at this time and would be considered in the subsequent tiered EA.

The Ute ladies’-tresses occurs in moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes where the soil is seasonally saturated within 18 inches of the surface. The Colorado butterfly plant is found in moist areas of floodplains, on sub-irrigated, alluvial soils on level or slightly sloping floodplains, and drainage bottoms at elevations of 5,000 to 6,400 feet. Neither of these plant species is known to occur on FTG property, and there is no suitable habitat for these species within the property boundary. Therefore, the FAA has determined the Proposed Action would have *no effect* on the Ute ladies’-tresses and Colorado butterfly plant.

Although the Mexican spotted owl is listed for Adams and Arapahoe Counties, this species uses mature, old growth forests. No forested habitats of this type are located in the eastern portions of Colorado where the sonic boom footprint is located (Figure 3). Therefore, the FAA has determined the Proposed Action would have *no effect* on the Mexican spotted owl.

The Preble’s meadow jumping mouse ranges from southeastern Wyoming, southward along the eastern edge of the Front Range foothills and south to Colorado Springs in El Paso County. It

inhabits heavily vegetated streamside riparian habitats of both permanent and intermittent streams with adjacent grassland cover. This species depends on well-developed, plains riparian vegetation with relatively undisturbed grassland communities and a nearby water source, as it relies on these riparian habitats to feed, breed, shelter, and hibernate (USFWS 2014). While there are no areas with riparian habitat suitable for the Preble's meadow jumping mouse within the FTG property boundary, there is the potential for suitable habitat within the sonic boom footprint. Therefore, this species is considered for potential effects.

The black-footed ferret was once found throughout the Great Plains and semi-arid grasslands of North America. The range of black-footed ferrets coincides with that of prairie dogs, as they depend on prairie dogs for food and use their burrows for shelter. The most endangered mammal in North America, this species was thought to be extinct in the wild until a remnant population was found near Meeteese, Wyoming in 1981 (CPW 2015). The first captive breeding efforts began in 1988, and isolated populations have been reintroduced into the wild since 1991. In Colorado, reintroduction efforts began in the eastern plains in 2013, with a total of seven reintroduction sights by the end of 2015. The closest reintroduction site to the action area is at the Rocky Mountain Arsenal National Wildlife Refuge in Adams County, approximately 12 miles west of FTG. Because the sonic boom footprint would lie entirely to the east of FTG (Figure 3) and black-footed ferrets are not expected to range more than approximately 0.5 mile (USFWS 2013), the FAA has determined the Proposed Action would have *no effect* on the black-footed ferret.

Potential Effects to the Preble's Meadow Jumping Mouse

The only component of the proposed project that has the potential to affect the Preble's meadow jumping mouse is the transmission of sonic booms during descent of the conceptual RLV. As stated above and summarized in Table 1, launch operations would generate a maximum of 52 sonic boom events per year. Sonic boom events could occur once a week during the operating period.

Characteristics of Sonic Booms

A sonic boom is an impulsive sound similar to a clap of thunder. A sonic boom is the sound associated with the shock waves created by a vehicle traveling through air faster than the speed of sound. Sonic boom analysis was completed for the supersonic descent portion of the RLV landing on Runway 8/26 at FTG.

The duration of a sonic boom is brief, less than a second, and the intensity is greatest directly under the flight path and weakens as distance from the flight track increases. The change in air pressure associated with a sonic boom is called overpressure. It is the sudden onset of the pressure change that makes the sonic boom audible (NASA 2014).

Sonic boom modeling was conducted using the program PCBoom.¹ According to the flight path data provided by FTG, as the RLV descends and turns, it transitions from Mach 1 to below Mach

¹ PCBoom is used by the U.S. Air Force Center for Engineering and Environment and is widely accepted to determine the specific pattern and amplitude of a sonic boom footprint.

1 twice, once at 59,000 feet and again at 51,000 feet. As a result, two sonic booms are produced upon descent, with the sonic boom footprint spread over a relatively large area, but at relatively low psf values (Figure 3). The sonic boom footprint ranges from 0.2 psf to 0.7 psf, with the 0.7 psf value occurring in a relatively small area. Sonic booms of this magnitude (0.7 psf) would be very noticeable and would be similar to a clap of thunder. For context, a sonic boom of 1.0 psf is a relatively low magnitude event with respect to other commercial space launch vehicles and is comparable to the sonic booms of military jets. Previous research has indicated some public reaction to a sonic boom could be expected with overpressures between 1.5 and 2 psf (Rogers 2013).

Effects of Sonic Booms on Wildlife

Animal species differ greatly in their responses to noise. Noise effects on wildlife can include ear drum rupture or temporary and permanent hearing threshold shifts; the masking of auditory signals, thereby disrupting species' ability to communicate; and non-auditory effects such as stress and hypertension, behavioral modifications, interference with mating or reproduction, and impaired ability to obtain adequate food, cover, or water. Overall, the literature suggests species differ in their response to various types, durations, and sources of noise (Manci et al. 1988; Bowles 1995).

Many scientific studies have investigated the effects of aircraft noise and sonic booms on wildlife, and some have focused on wildlife "flight" due to noise. Ear drum rupture and temporary and permanent hearing threshold shifts are unlikely, given the noise levels produced. Although the effects are likely temporal, aircraft noise may cause masking of auditory signals and behavioral changes within exposed faunal communities. Natural factors which affect the reaction of animals to noise include season, group size, age and sex composition, on-going activity, motivational state, reproductive condition, terrain, weather, and temperament (Bowles 1995). Individual animal response to a given noise event or series of events also can vary widely due to a variety of factors, including time of day, physical condition of the animal, physical environment, the experience of the individual animal with noises, and whether or not other physical stressors (e.g., drought) are present (Manci et al. 1988). Consequently, it is difficult to generalize animal responses to noise disturbances across species.

One result of the Manci et al. (1988) literature review was the conclusion that, while behavioral observation studies were relatively limited, a general behavioral reaction in animals from exposure to aircraft noise is the startle response. The intensity and duration of the startle response appears to be dependent on which species is exposed, whether there is a group or an individual, and whether there have been some previous exposures. Responses range from flight, trampling, stampeding, jumping, or running, to movement of the head in the apparent direction of the noise source. It has been reported the intensities and durations of the startle response decrease with the numbers and frequencies of exposures, suggesting no long-term adverse effects. Manci et al. (1988) indicates avian species may be more sensitive to aircraft noise than mammals.

Teer and Truett (1973) examined reproductive success in mourning doves, mockingbirds, northern cardinals, and lark sparrows when exposed to sonic booms of 1 psf or greater and

found no adverse effects. Awbrey and Bowles (1990)—a literature review of the effects of aircraft noise and sonic booms on raptors—found the available evidence shows very marginal effects on reproductive success. Ellis et al. (1991) examined the effects of sonic booms (actual and simulated) on nesting peregrine falcons (*Falco peregrinus*), prairie falcons (*Falco mexicanus*), and six other raptor species. While some individuals did respond by leaving the nest, the response was temporary, and overall there were no adverse effects on nesting. Lynch and Speake (1978) studied the effects of both real and simulated sonic booms on the nesting and brooding of eastern wild turkey (*Meleagris gallopavo silvestris*) in Alabama. Hens at four nest sites were subjected to between 8 and 11 combined real and simulated sonic booms. All tests elicited similar responses, including quick lifting of the head and apparent alertness for 10–20 seconds. No apparent nest failure occurred as a result of the sonic booms.

Conclusion

If present within the sonic boom footprint during RLV descent, the Preble's meadow jumping mouse could experience up to 52 sonic boom events per year (one per week). The majority of the sonic boom footprint is composed of overpressures less than 0.7 psf, which is similar to a clap of thunder. These sonic booms are expected to produce, at most, infrequent startle effects to the Preble's meadow jumping mouse. Previous studies found no adverse effects to birds when exposed to sonic booms greater than 1 psf, and birds are likely to be more sensitive to aircraft noise than mammals. Therefore, the FAA has determined the Proposed Action **may effect, but is not likely to adversely affect** the Preble's meadow jumping mouse.

The FAA appreciates your review of the proposed project and requests your concurrence with our effects determination for the Preble's meadow jumping mouse. If you have any questions, please contact Ms. Stacey Zee, of my staff, at 202-267-9305 or at Stacey.Zee@faa.gov.

Sincerely,



Daniel Murray
Manager, Space Transportation Development Division

Attachments: Figure 1. Regional Location of Front Range Airport
Figure 2. Existing and Conceptual Facilities at Front Range Airport
Figure 3. Sonic Boom Footprint

References

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FAA Endangered Species Act Consultation – Proposed Spaceport Colorado, Adams County, Colorado

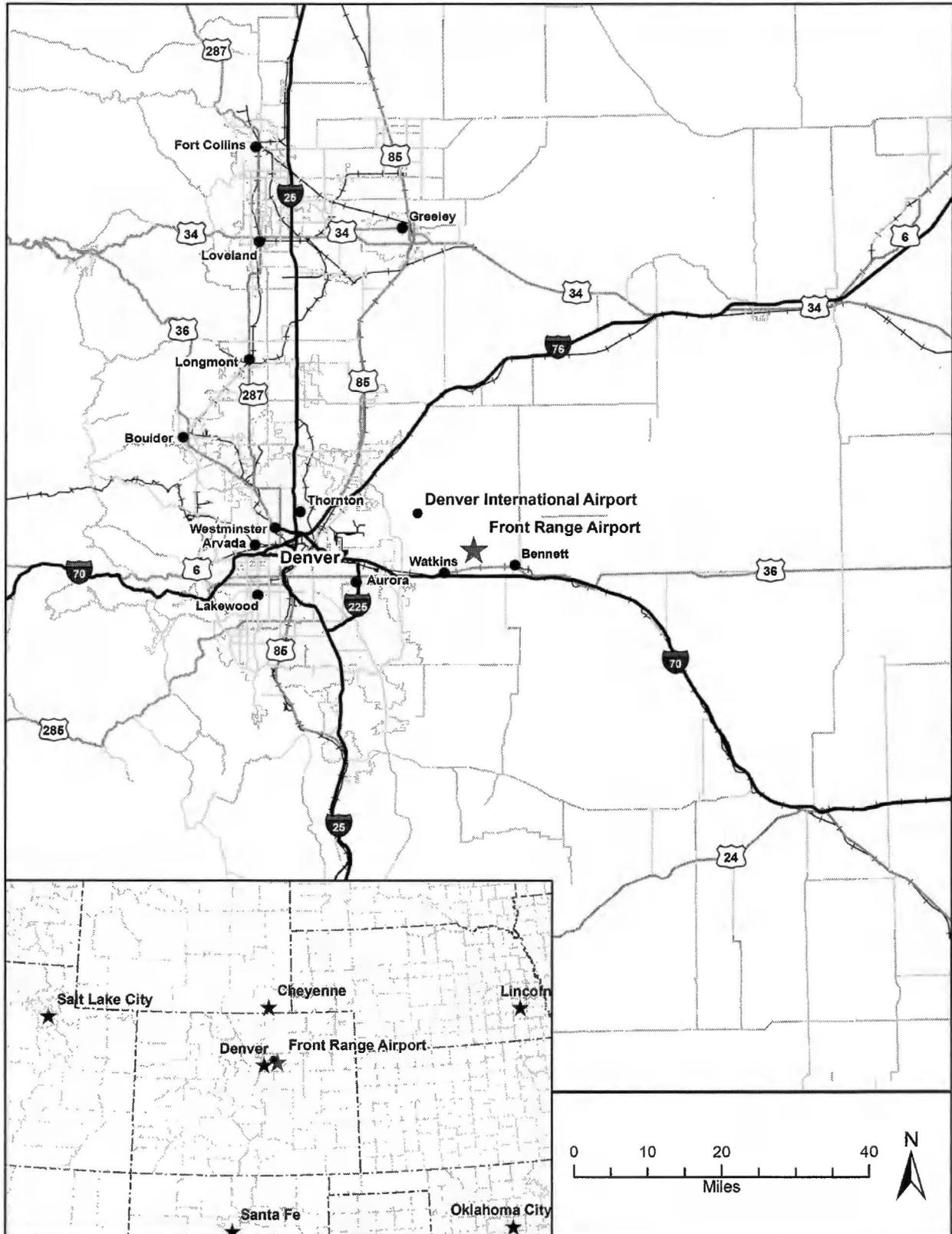


Figure 1. Regional Location of Front Range Airport

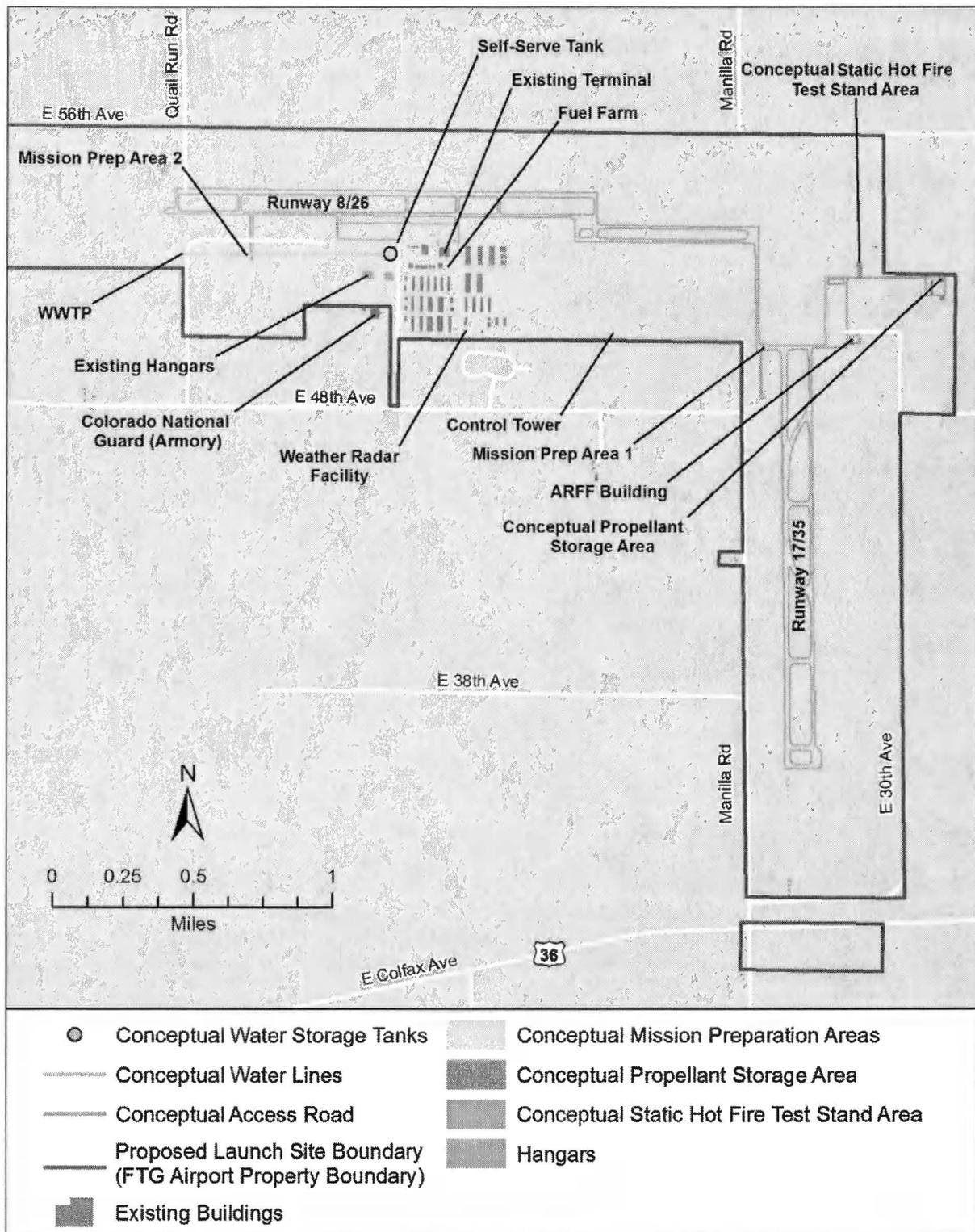


Figure 2. Existing and Conceptual Facilities at Front Range Airport

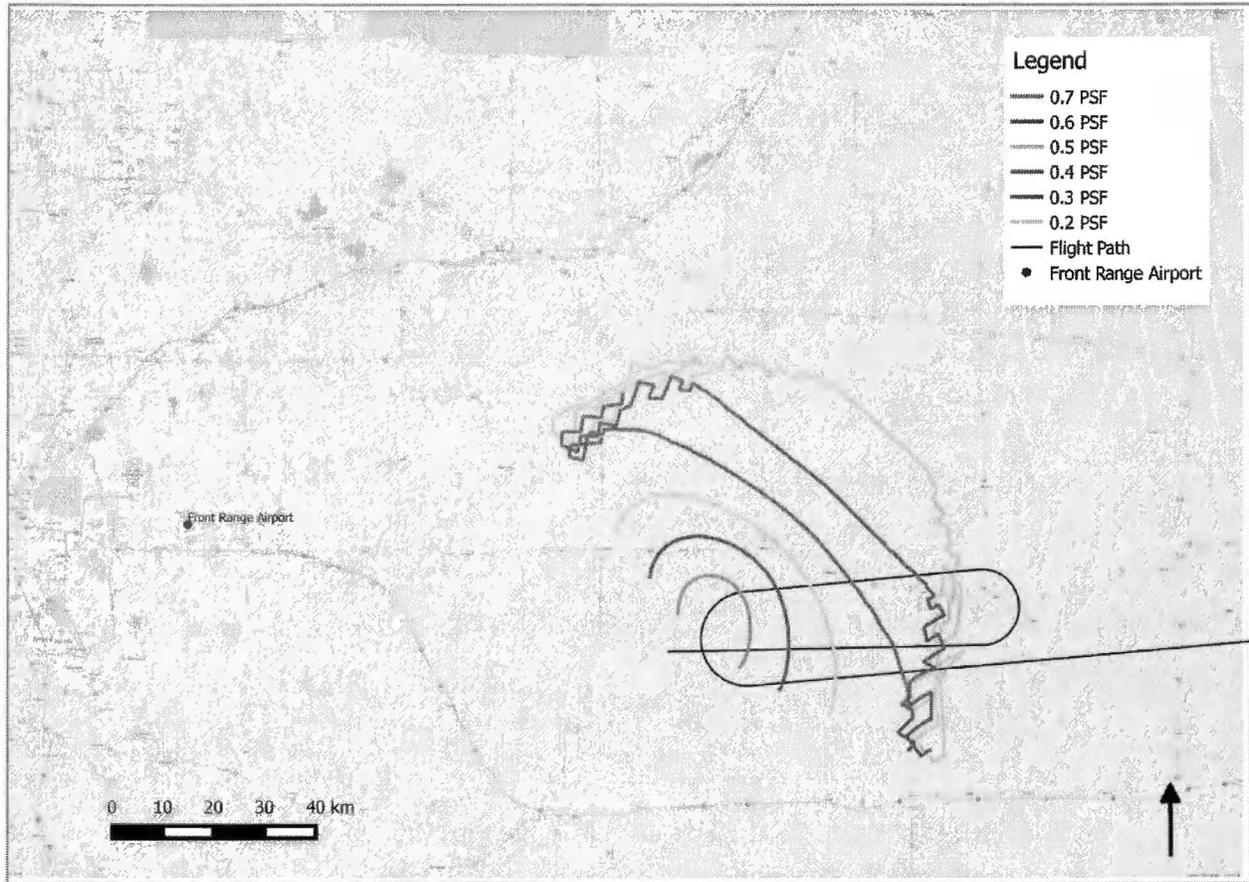


Figure 3. Sonic Boom Footprint



United States Department of the Interior



FISH AND WILDLIFE SERVICE Colorado Ecological Services

IN REPLY REFER TO:
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Front Range:
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Mail Stop 65412
Denver, Colorado 80225-0486

Western Slope:
445 W. Gunnison Avenue
Suite 240
Grand Junction, Colorado 81501-5711

TAILS: 06E24000-2018-I-0889

June 4, 2018

Stacey Zee
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591
Stacey.Zee@faa.gov

Dear Ms. Zee:

On January 20, 2016, the U.S. Fish and Wildlife Service (Service) concurred with your determination that construction and operation of a commercial space launch site known as Spaceport Colorado at Front Range Airport in Adams County, Colorado, would not likely adversely affect the threatened Preble's meadow jumping mouse (*Zapus hudsonius preblei*) because no habitat occurs on the site indirect impacts were expected to be discountable because the species is unlikely to occupy the surrounding area. No critical habitat has been designated in the project area; therefore, none will be affected. Our review was performed consistent with our authority under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*).

On April 17, 2018, we received your report indicating that the project description had changed, and instead of using a vehicle that uses rocket engines to take off from the runway, you are now proposing to use vehicles that use jet engines to take off from the runway. Because site conditions have not changed and neither the site nor the surrounding area support habitat for the Preble's meadow jumping mouse, we continue to expect the effects of the project to be discountable. No critical habitat has been designated in the project area; therefore, none will be affected.

Please note that reinitiation of consultation will be required if:

1. New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this consultation;
2. The action is subsequently modified in a manner that causes an adverse effect to the listed species or critical habitat that was not considered in this consultation; or
3. A new species is listed or critical habitat designated that may be affected by the action.

If the proposed project has not commenced within one year, please contact the Colorado Field Office to request an extension. We appreciate your submitting this report to our office for review and comment. If the Service can be of further assistance, please contact Alison Deans Michael of my staff at (303) 236-4758 or alison_michael@fws.gov.

Sincerely,

KIANA
JOERSZ

 Digitally signed by
KIANA JOERSZ
Date: 2018.06.06
08:19:54 -06'00'

for Drue L. DeBerry
Colorado and Nebraska Field Offices Supervisor



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Commercial Space Transportation

800 Independence Ave., SW
Washington, DC 20591

DEC 21 2015

RE: Environmental Assessment and Cultural Resources Survey for the Proposed Colorado Spaceport at Front Range Airport in Adams County, Colorado

To Whom it May Concern:

In accordance with the National Environmental Policy Act, the Federal Aviation Administration (FAA) is preparing an Environmental Assessment (EA) to assess the potential environmental impacts of the Adams County Board of County Commissioners' (BOCC) proposal to operate a commercial space launch site at the Front Range Airport (FTG) in Adams County (see Attachment 1) and to offer the site to commercial launch operators for the operation of horizontal take-off and horizontal landing Reusable Launch Vehicles (RLVs) and engine testing. The project, known as Spaceport Colorado, would be located at FTG in southern unincorporated Adams County, approximately nine miles southeast of Denver International Airport. To operate a commercial space launch site, the BOCC must obtain a launch site operator license from the FAA. Under the Proposed Action addressed in the EA, the FAA would: (1) issue a launch site operator license to the Adams County BOCC for the operation of a commercial space launch site at FTG; and (2) provide unconditional approval of the modified Airport Layout Plan to reflect the designation of a launch site boundary and existing and future spaceport facilities and infrastructure.

The action of issuing a launch site operator license and the unconditional approval of the Airport Layout Plan, is considered a federal undertaking under the regulations of the Advisory Council for Historic Preservation (36 Code of Federal Regulations [CFR] § 800.16(y)) for Section 106 of the National Historic Preservation Act (NHPA). The BOCC and the Front Range Airport Authority contracted with HDR to conduct a Class I site file review and a Class III cultural resources inventory and evaluation for the proposed Spaceport Colorado project. An electronic or hard copy of the report can be sent to you upon request.

Project Description

The project is located within Township 3 South, Range 64 West; within Section 14 and the southern portion of Section 15 (see Attachment 1). The proposed project includes operation of the RLVs and infrastructure development at FTG. The BOCC proposes to offer the site to RLV operators to operate Concept Y RLVs, which are two-seat, piloted vehicles that would depart the runway under rocket power to carry humans and/or payloads on a suborbital flight to 330,000 feet and then return to land on the runway. The BOCC describes the operations of the horizontal take-off and horizontal landing Concept Y RLV to be similar to an aircraft, but instead of a jet or piston engine, it uses its own rocket propulsion system to depart the runway and would typically land with the engines off as a non-powered glider. The EA analyzes one operation per week or 52 launches per year during the timeframe of the launch site operator license (expected to be 2016-2020). Launch operators would be required to obtain a separate launch license from the FAA to operate from the proposed launch site. An additional environmental

review would be required to analyze the environmental impacts of the operations under the launch license.

The proposed project would also include the construction of a propellant storage area, mission preparation areas, a static hot fire test stand area, and other facilities to support spaceport operations. The BOCC has indicated that construction would take place immediately north and east of the existing FTG facilities within the airport property boundary, and in some cases, utilize existing FTG facilities for the project. All land for the proposed project is owned by the FTG and Adams County.

Area of Potential Effects

In accordance with 36 CFR § 800.4(a)(1), the FAA consulted with the State Historic Preservation Officer (SHPO) on the Area of Potential Effects (APE).. The FAA considered several types of potential effects in defining the APE: proposed construction with ground disturbing activities, potential visual effects, and potential noise effects. The proposed APE is an approximately 34-square mile area that includes the FTG property (see Attachment 2). This APE was based on preliminary noise modeling for the project and represents the 65 decibel Day-Night Average Sound Level (DNL) noise contour for 10 flights per week (significantly greater than the currently proposed project).

Noise modeling for the project also included the potential effects of low level sonic booms that could potentially be heard in portions of Morgan, Washington, eastern Arapahoe, and eastern Adams County. The sonic booms would be comparable to the distant sound of thunder with a duration of less than one second. Due to the low calculated overpressures of 0.1 to 0.5 pounds per square foot, sonic boom levels from the RLVs are not expected to reach magnitudes that would cause public reaction or annoyance, damage to buildings, or significant impacts to historic properties. Consequently, the potential sonic boom footprint was not included in the APE.

For archaeological resources, potential effects would be limited to the area within the APE where ground disturbance would occur from construction of the propellant storage area, mission preparation areas, the static hot fire test stand area, and other facilities to support spaceport operations. Many of these areas are currently paved or have been previously disturbed due to previous airport construction activities. For architectural resources, potential effects would extend to the boundary of the APE.

Identification of Historic Properties

HDR, the EA consultant, conducted a Class I cultural resources records review of the APE in April 2013. Seventeen past cultural resources investigations have been conducted within the APE. These investigations documented 38 archaeological isolated finds and one archaeological site, all of which were evaluated as “Field Not Eligible.” In addition, the surveys documented 12 “Officially Not Eligible” archaeological sites; and no “Officially Eligible archaeological sites”. The one “Field Not Eligible” archaeological site is 5AM.1004, an unknown prehistoric open camp. It was not considered further since it is not near the proposed project and its significance as an archaeological site would not be affected by noise.

The search also identified eight previously recorded historic-era sites within the APE. These include a railroad corridor, road, windmill, and several farmsteads. Four have been determined “Officially Not Eligible” and four are “Field Not Eligible” properties. HDR conducted an expanded file search in December 2013. The two “Field Not Eligible” farm properties were found to be no longer extant; the two remaining properties, a railroad corridor and a road, are not property types whose significance would be affected by noise. One new cultural resource, the Front Range Airport Farmstead (SAM3123), was identified within the APE. This farmstead is an early to mid-twentieth century dryland wheat farm that consists of two standing buildings (a garage and an outhouse) dating to the first half of the twentieth

century, the foundation of a residence constructed in 1968, the foundation of a barn dating to the first half of the twentieth century, and a well constructed after 1955. Based on field and historical information, the Front Range Airport Farmstead (5AM3123) is Not Eligible for the National Register of Historic Places (NRHP) as it lacks significance under any of the NRHP Criteria and its historic integrity is severely compromised.

HDR conducted a Class III cultural resources survey within areas of airport property within the APE that would be affected by construction of proposed spaceport facilities. No archaeological resources or deposits were identified. An electronic or hard copy of the report can be sent to you upon request.

This letter is being sent to all tribes listed in Attachment 3. Please respond to this letter by January 29, 2015 if: you or your tribe have any concerns or interest in the Spaceport Colorado project and would like to be included on the project mailing list; your tribe is interested in consulting with the FAA; or you or your tribe is interested in reviewing or commenting on the cultural resources survey report.

If no response is provided, we will assume you do not have an interest or will not be providing information regarding this project. In addition, your organization will not receive any further information on the project unless the scope of the project changes.

If you have any questions or need additional information on the project, please contact Ms. Stacey Zee, of my staff, at 202-267-9305 or at Stacey.Zee@faa.gov. Thank you in advance for your input on this project.

Sincerely,

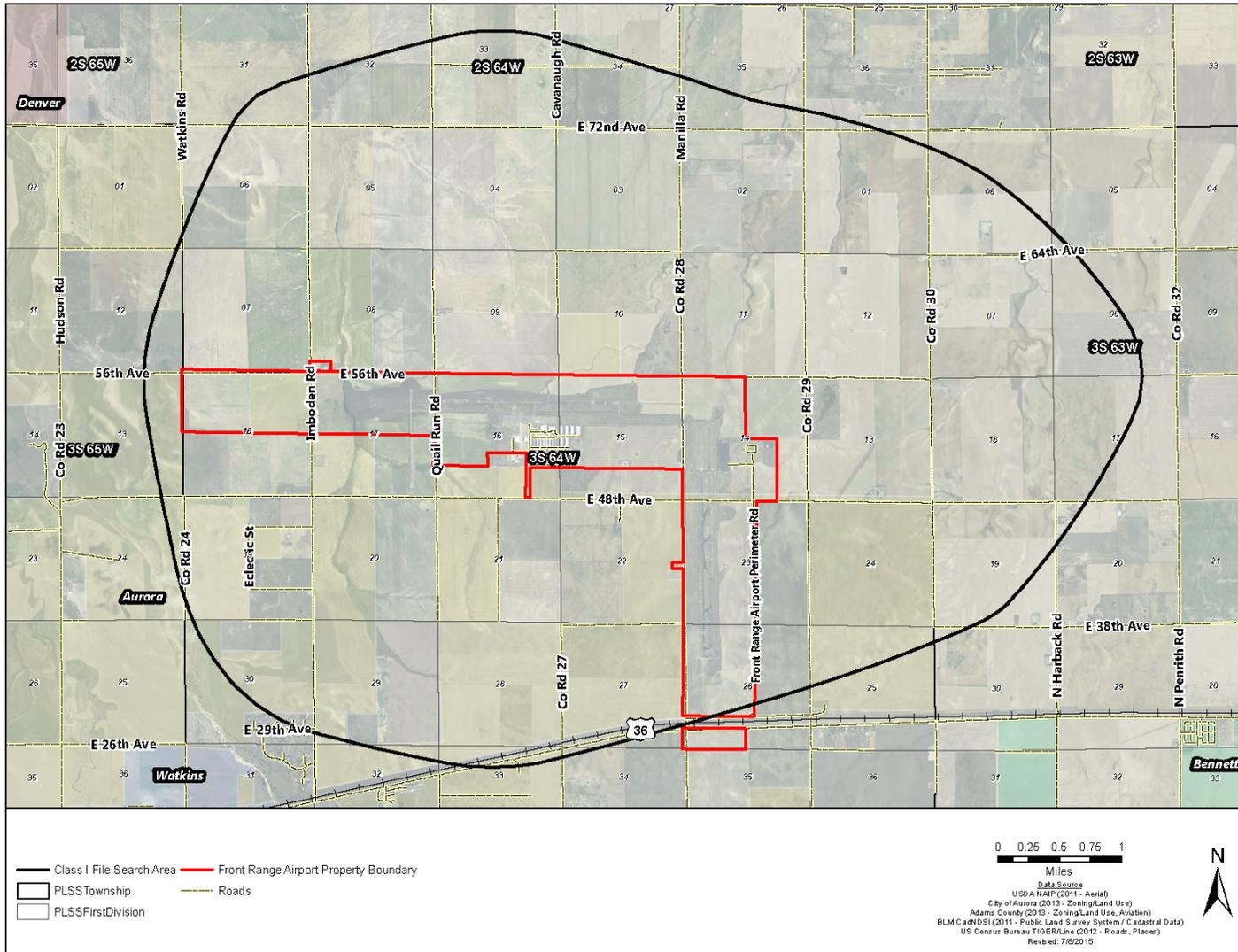


Daniel Murray
Manager, Space Transportation Development Division

- Attachments:
1. Location of Proposed Launch Site
 2. Area of Potential Effects
 3. List of Tribal Contacts



Attachment 1. Location of Proposed Launch Site



Attachment 2. Area of Potential Effects

Attachment 3 – Colorado Spaceport Tribal Contacts

Apache Tribe of Oklahoma

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Cheyenne River Sioux Tribe

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Hoinon'ainino'

**Northern Arapaho Tribe
TRIBAL HISTORIC PRESERVATION OFFICE**

P.O. Box 67 - St. Stephens, Wyoming 82524 - PH: 307.856.1628 - nathpodd@gmail.com

January 5, 2016

U.S. Department of Transportation FAA
800 Independence Ave., SW
Washington, DC 20591

Subject: EA and Cultural Resources Survey for the Proposed Colorado
Spaceport at Front Range Airport in Adams County CO

After reviewing your request under the NHPA and NEPA, Section 106
process, our office would like to comment on the proposed project:

The NATHPO would like to express gratitude for the invite regarding consultation in regards to the proposed project. I would like to request that an electronic report of the Cultural Resource Inventory be sent so that I may review it and give an accurate response. I appreciate all of your help in this matter. Should you have any questions or comments feel free to contact me at anytime.

Thank you for consulting with the Northern Arapaho THPO and have a Great Day.

Devin Oldman
NATHPO-Deputy Director
nathpodd@gmail.com
307-856-1628 Office
307-438-5318 Cell



Barry, Shawna

From: Stacey.Zee@faa.gov
Sent: Wednesday, January 06, 2016 11:01 AM
To: John.VanKirk@hdrinc.com
Cc: Barry, Shawna; Woods, Hova
Subject: FW: Colorado Spaceport at Front Range Airport in Adams County CO
Attachments: 20151006 Class III Cultural Resources Inventory of the Front Range Airport 092415.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

FYI

From: Zee, Stacey (FAA)
Sent: Wednesday, January 06, 2016 10:59 AM
To: Devin Oldman
Subject: RE: Colorado Spaceport at Front Range Airport in Adams County CO

Devin –

Thank you for your letter. Attached is the Cultural Survey Report. Please let me know if you need anything else.

Stacey M. Zee
Environmental Specialist
Federal Aviation Administration
800 Independence Ave, SW
Washington, DC 20591
202-267-9305

From: Devin Oldman [<mailto:nathpodd@gmail.com>]
Sent: Tuesday, January 05, 2016 2:25 PM
To: Zee, Stacey (FAA)
Subject: Colorado Spaceport at Front Range Airport in Adams County CO

Dear Stacey,

Attached is the response to the proposed project.

Thank you for Consulting with the Northern Arapaho Tribe.

Sincerely,

Devin B. Oldman

NATHPO - Deputy Director
Phone - (307-856-1628)
Cell - (307-438-5318)
nathpodd@gmail.com



Pawnee Nation of Oklahoma

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January 5, 2015

Daniel Murray
US Dept of Transportation
800 Independence Ave., SW
Washington, DC 20591

RE: Request for Section 106 Consultation and Review for proposed construction located at Colorado Spaceport, Front Range Airport, Adams County, CO.

Dear Daniel,

The Pawnee Nation Office of Historic Preservation has received the information and materials requested for our Section 106 Review and Consultation. Consultation with the Pawnee Nation is required by Section 106 of the National Historic Preservation Act of 1966 (NHPA), and 36 CFR Part 800.

Given the information provided, you are hereby notified that the proposal project location should have no potential to adversely affect any known Archaeological, Historical, or Sacred Pawnee sites. Therefore, in accordance with 36 CFR 800.4(d) (1), you may proceed with your proposed project. However, please be advised that undiscovered properties may be encountered and must be immediately reported to us under both the NHPA and NAGPRA regulations.

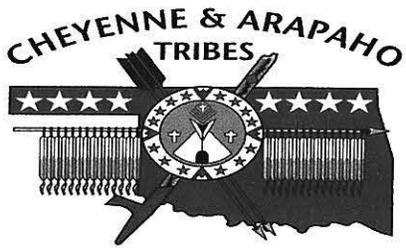
This information is provided to assist you in complying with 36 CFR Part 800 for Section 106 Consultation procedures. Please retain this correspondence to show compliance. Should you have any questions, please do not hesitate to contact me at aknifechief@pawneenation.org. Thank you for your time and consideration.

Should you have questions, please do not hesitate to contact me at aknifechief@pawneenation.org. Thank you for your time and consideration.

Sincerely,

Andrew Knife Chief, B.A., J.D.

TRIBAL
HISTORIC
PRESERVATION
OFFICE



P.O. BOX 167
CONCHO, OKLAHOMA 73022
1-800-247-4612 Toll Free
405-422-7416 Telephone

January 13, 2016

Office of Commercial Space Transportation
U.S. Department of Transportation
800 Independence Ave., SW
Washington, DC 20591

RE: Environmental Assessment and Cultural Resources Survey for the Proposed Colorado Spaceport at Front Range Airport in Adams County, Colorado.

Dear Daniel Murray,

On behalf of the Cheyenne and Arapaho Tribes, thank you for the notice of the referenced project. I have reviewed your Consultation request under Section 106 of the National Historic Preservation Act regarding the project proposal and commented as follows:

At this time it is determined to be **No Properties**; however, if at any time during the project implementation inadvertent discoveries are made that reflect evidence of human remains, ceremonial or cultural objects, historical sites such as stone rings, burial mounds, village or battlefield artifacts, please discontinue work and notify the THPO Office immediately. If needed, we will contact the Tribes NAGPRA representatives.

Best Regards,

Margaret Sutton, THPO Officer
Tribal Historical Preservation Office
msutton@c-a-tribes.org

Appendix G

Airfields and Airspace

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G.1 Airfield and Airspace Impacts

G.1.1 No Action Alternative

Under the No Action Alternative, the FAA would not issue a launch site operator license to the Adams County Board of County Commissioners and the commercial launches associated with the Proposed Action would not occur. There would be no impacts on airfields or airspace associated with the No Action Alternative and current airspace designations in the vicinity of DEN would remain in place. National airspace initiatives including the Next Generation Air Transportation System and Space and Air Traffic Management System would continue to be implemented under the No Action Alternative.

G.1.2 Proposed Action

Launch Site Operator License and Future Launch Operator Licensing Process

This PEA evaluates the potential impacts of the FAA issuing a launch site operator license to the Adams County Board of County Commissioners for the Proposed Action based on the conceptual operations of the RLV. However, prior to any launch operations, each separate launch operator will need to obtain a specific launch operator license from the FAA for their vehicle type and trajectory that will need to be accommodated in the airspace around DEN. The licensing of specific launch operators is a detailed and specific process that will occur beyond the publication date of this PEA. An environmental analysis that tiers off of this PEA will be prepared to analyze the impacts of a vehicle operator proposing to launch from the site.

Part 420 requires an agreement between FAA Denver Terminal Radar Approach Control Facilities, Denver Center, Denver Air Traffic Control Tower (DEN), the Air Traffic Control System Command Center, and FTG to “establish procedures for the issuance of a Notice to Airmen prior to a launch and for closing of air routes during the launch window and other such measures as the FAA deems necessary to protect public health and safety”. Given FTG’s use of a hypothetical concept vehicle, it is not possible for ATC and FTG to include specific measures in the agreement at this time. Rather, the parties worked to establish a process and timeline by which FTG or a future operator would provide notification and specific information describing an operation that ATC would use to assess its effect on the airspace. The signed Letter of Agreement will be included in the license application to the FAA.

Part 431 will require a future launch operator to obtain its own agreement with ATC. At that time, the operator will be able to provide specific data describing its vehicle and missions that the FAA can use to identify specific safety measures and the effect of implementing those measures on the airspace. The launch operator license process will work with ATC to schedule its missions according to the process outlined in the agreement. Mission planning will include collaboration between the vehicle operator and ATC to identify a transit route between FTG and the pre-determined operating area, as well as the location and timing of the airspace closure associated with the operating area that considers its effect on conventional air traffic. FAA ATC will ensure launch operations are safely and efficiently integrated into the NAS by approving, modifying, or denying all airspace decisions associated with launch activities.

Strategic Flight Planning and Flight-Day Planning

Strategic flight planning will be incorporated into the launch operator licensing process. The objective of the strategic planning process is to develop a typical end-to-end flight plan profile that meets user requirements while being sensitive to air traffic flow conditions and constraints. The overall process consists of flight profile development by the vehicle operator, and collaboration between the vehicle operator and the ATC system to integrate the flight plan into the air traffic environment. The process includes planning for nominal flight plan implementation and for abort modes and contingencies.

On the day of the launch, the flight plan profile developed in the strategic planning phase will be validated based on prevailing weather and traffic flow constraints. When weather or traffic requires it, the originally planned flight profile will be modified or re-scheduled to accommodate prevailing constraints.

Conceptual Launch Operations

Operation of the conceptual RLV vehicle include a horizontal takeoff under jet power from a conventional runway, after receiving clearance from the tower. Following the horizontal takeoff, the vehicle would proceed along the approved transit route while maintaining communications with ATC until it reaches the RLV operating area. Once within the operating areas, it would ignite its rocket engines. After a few minutes of rocket powered climb, the RLV would coast to its sub-orbital apogee. Upon descending back down through the atmosphere, it would exit the operating area under jet power and return along the transit route to a jet powered landing at FTG.

Summary of Potential Impacts of the Proposed Action

Applying the operational parameters listed in Section 1 of the PEA, and the specific flight planning that would occur at the local level prior to issuance of any launch operator licenses, commercial launch operations at FTG are expected to have minor effects on airspace. Specifically, FTG identified the FAA's pre-approval of an RLV operating area, the efforts by FAA ATC to minimize the effect of a proposed launch operation on DEN traffic flows as well as traffic flows in en-route airspace, and the avoidance of closures to airports as measures specifically designed to minimize potential impacts. At Front Range, operations will follow normal protocols, including providing advance notice via Notice to Airmen (NOTAMs) that would assist GA pilots in scheduling around any temporary disruption to flight activity at or near FTG. There would be no change in shape or altitude of the design of existing airspace, but there is the potential for temporary closures of airspace through the implementation of the RLV operating areas to ensure the safety of the public.

The FAA intends to address specific effects on airspace and pre-launch coordination procedures in greater detail in the environmental reviews that it will undertake for subsequent launch operator license applications.

The Proposed Action would result in minimal physical changes to the airfield as the mission preparation areas would be constructed on existing disturbed areas near the ends of the runways. Changes to the airfield associated with the Proposed Action would be incorporated into the ALP. Immediately prior to launches and landings of the RLVs, air traffic control would ensure that the runways at FTG are clear of

other aircraft for the safe operation of the RLVs. In accordance with the operating parameters listed in section 1.2.3, FTG has specifically identified the measures of keeping at least one runway open at all times, allowing FTG tenants to access to their leaseholds at all times, keeping pre-launch and launch operations from adversely affecting tenants, and obtaining FAA pre-approval of the closure of public areas as measures specifically designed to minimize potential impacts.

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Appendix H

Environmental Data Resources Report for Front Range Airport

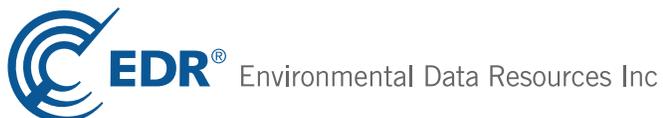
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Front Range Airport

5200 Front Range Parkway
Watkins, CO 80137

Inquiry Number: 4109968.2s
October 20, 2014

The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

5200 FRONT RANGE PARKWAY
WATKINS, CO 80137

COORDINATES

Latitude (North): 39.7883000 - 39° 47' 17.88"
Longitude (West): 104.5484000 - 104° 32' 54.24"
Universal Transverse Mercator: Zone 13
UTM X (Meters): 538668.3
UTM Y (Meters): 4404149.0
Elevation: 5487 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 39104-G5 MANILA, CO
Most Recent Revision: 1951

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20110702
Source: USDA

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 7 of the attached EDR Radius Map report:

<u>Site</u>	<u>Database(s)</u>	<u>EPA ID</u>
FRONT RANGE AIRPORT 5200 FRONT RANGE PARKWAY WATKINS, CO 80137	FINDS LUST Status: Closed NPDES ASBESTOS	N/A
FRONT RANGE AIRPORT AUTHORITY 5200 FRONT RANGE PKWY WATKINS CO 80137 WATKINS, CO	RGA LUST	N/A
FRONT RANGE AIRPORT AUTHORITY - W 5200 FRONT RANGE PARKWAY AURORA AREA, CO 80137	AIRS	N/A

EXECUTIVE SUMMARY

FRONT RANGE AIRPORT 5200 FRONT RANGE PKWY WATKINS, CO	RGA LUST	N/A
FRONT RANGE AIRPORT AUTHORITY 5200 FRONT RANGE PKWY WATKINS, CO 80137	UST AST	N/A
FRONT RANGE AIRPORT AUTHORITY 5200 FRONT RANGE PKWY WATKINS, CO	RGA LUST	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators

EXECUTIVE SUMMARY

RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls
LUCIS..... Land Use Control Information System

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Sites & Facilities

State and tribal leaking storage tank lists

LUST TRUST..... RAP Site Listing
LAST..... Leaking Aboveground Storage Tank Listing
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

INDIAN UST..... Underground Storage Tanks on Indian Land
FEMA UST..... Underground Storage Tank Listing

State and tribal institutional control / engineering control registries

AUL..... Environmental Covenants and Environmental Use Restrictions List

State and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup & Redevelopment Act Application Tracking Report
INDIAN VCP..... Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
ODI..... Open Dump Inventory
SWRCY..... Registered Recyclers Listing
HIST LF..... Historical Landfill List
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

EXECUTIVE SUMMARY

Local Lists of Hazardous waste / Contaminated Sites

US CDL..... Clandestine Drug Labs
CDL..... Meth Lab Locations
US HIST CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
CO ERNS..... Spills Database
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

DOT OPS..... Incident and Accident Data
DOD..... Department of Defense Sites
FUDS..... Formerly Used Defense Sites
CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
UMTRA..... Uranium Mill Tailings Sites
US MINES..... Mines Master Index File
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
SSTS..... Section 7 Tracking Systems
ICIS..... Integrated Compliance Information System
PADS..... PCB Activity Database System
MLTS..... Material Licensing Tracking System
RADINFO..... Radiation Information Database
RAATS..... RCRA Administrative Action Tracking System
RMP..... Risk Management Plans
METHANE SITE..... Methane Site Investigations - Jefferson County 1980
Methane Investigation..... Methane Gas & Swamp Findings
DRYCLEANERS..... Drycleaner Facilities
UMTRA..... Uranium Mill Tailings Sites
INDIAN RESERV..... Indian Reservations
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
Financial Assurance..... Financial Assurance Information Listing
EPA WATCH LIST..... EPA WATCH LIST
LEAD SMELTERS..... Lead Smelter Sites
2020 COR ACTION..... 2020 Corrective Action Program List
MINES..... Permitted Mines Listing
COAL ASH DOE..... Steam-Electric Plant Operation Data
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER..... PCB Transformer Registration Database
US FIN ASSUR..... Financial Assurance Information
PRP..... Potentially Responsible Parties
US AIRS..... Aerometric Information Retrieval System Facility Subsystem

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat..... EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA CORRACTS facilities list

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 06/10/2014 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<i>GOLD METAL PAINT WORKS/NORM TE</i>	<i>5190 VIOLET HILL ST ST</i>	<i>WNW 1/4 - 1/2 (0.251 mi.)</i>	<i>8</i>	<i>14</i>

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

EXECUTIVE SUMMARY

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 06/10/2014 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

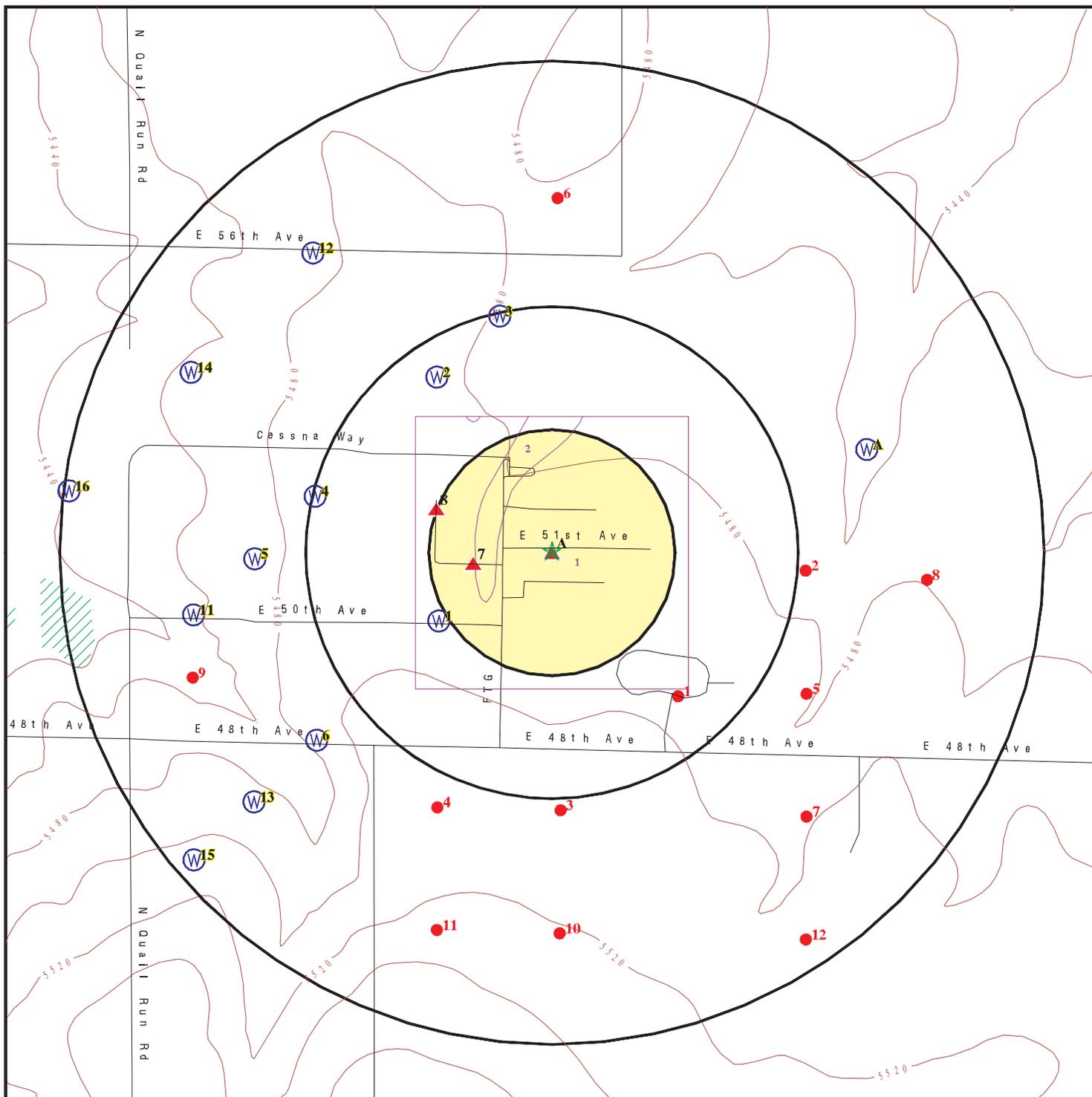
<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
GOLD MEDAL PAINT WORKS	5120 VIOLET HILL ST	W 1/8 - 1/4 (0.162 mi.)	7	12

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 7 records.

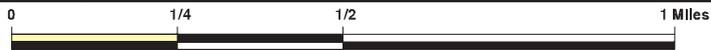
<u>Site Name</u>	<u>Database(s)</u>
INTERSTATE SERVICE STA	UST
KUMAR & ASSOCIATES - FRONT RANGE	RCRA NonGen / NLR, FINDS
FORMER LOWRY BOMBING AND GUNNERY R	FINDS
INERT FILL	HIST LF
FLY ASH DISPOSAL SITE	HIST LF
PLAZA 70 INTERIORS	VCP
BBJW ASSOCIATES	VCP

OVERVIEW MAP - 4109968.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

- Indian Reservations BIA
- ▲ Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone

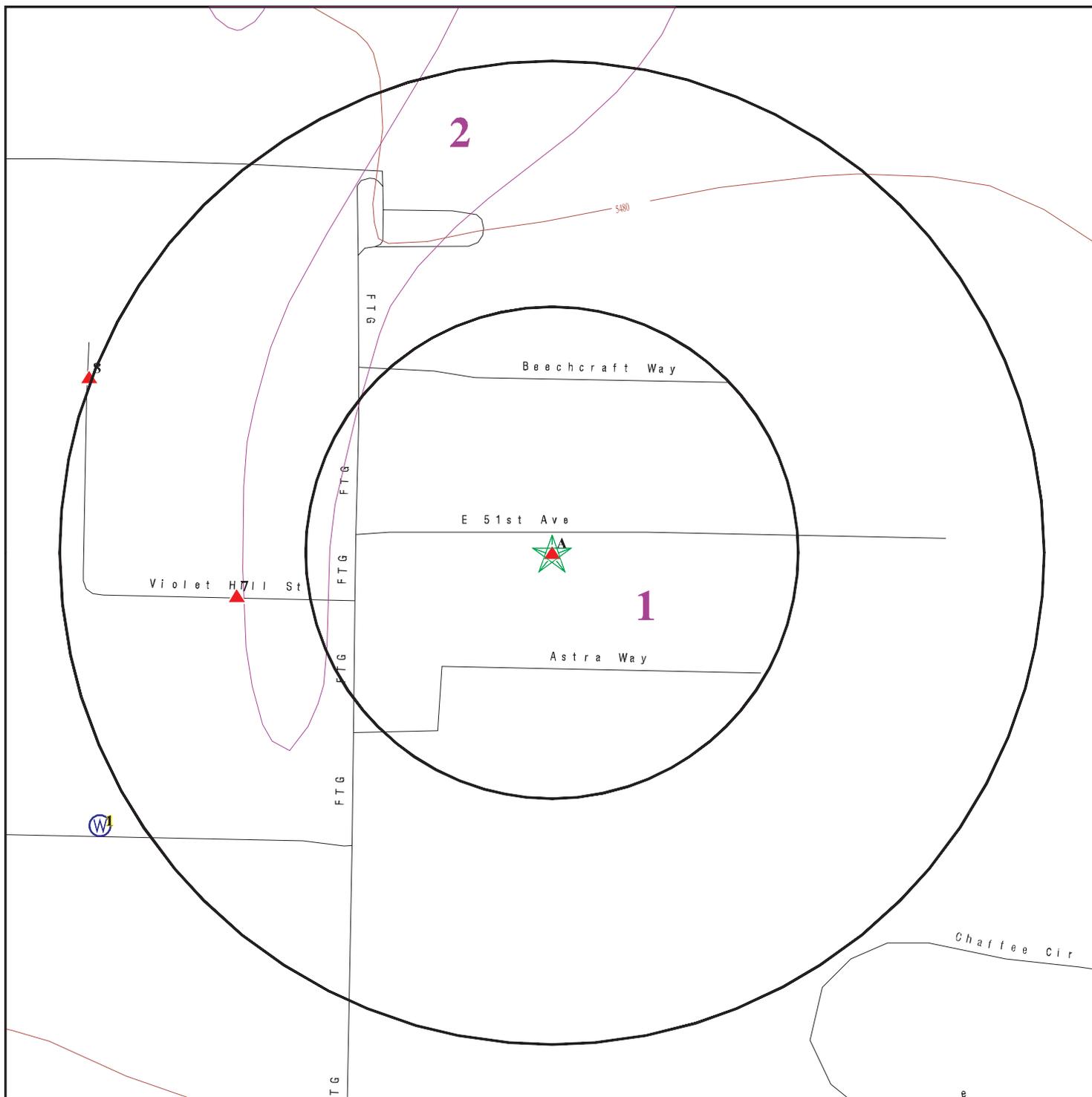


This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Front Range Airport
 ADDRESS: 5200 Front Range Parkway
 Watkins CO 80137
 LAT/LONG: 39.7883 / 104.5484

CLIENT: Cardno TEC
 CONTACT: Ellen Graap Loth
 INQUIRY #: 4109968.2s
 DATE: October 20, 2014 2:55 pm

DETAIL MAP - 4109968.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

- Indian Reservations BIA
 - Oil & Gas pipelines from USGS
 - 100-year flood zone
 - 500-year flood zone
- 0 1/16 1/8 1/4 Miles

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Front Range Airport
 ADDRESS: 5200 Front Range Parkway
 Watkins CO 80137
 LAT/LONG: 39.7883 / 104.5484

CLIENT: Cardno TEC
 CONTACT: Ellen Graap Loth
 INQUIRY #: 4109968.2s
 DATE: October 20, 2014 2:56 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Federal NPL site list</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<i>Federal Delisted NPL site list</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Federal CERCLIS list</i>								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
<i>Federal CERCLIS NFRAP site List</i>								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
<i>Federal RCRA CORRACTS facilities list</i>								
CORRACTS	1.000		0	0	1	0	NR	1
<i>Federal RCRA non-CORRACTS TSD facilities list</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Federal RCRA generators list</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	TP		NR	NR	NR	NR	NR	0
<i>State- and tribal - equivalent CERCLIS</i>								
SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
<i>State and tribal landfill and/or solid waste disposal site lists</i>								
SWF/LF	0.500		0	0	0	NR	NR	0
<i>State and tribal leaking storage tank lists</i>								
LUST	0.500	1	0	0	0	NR	NR	1
LUST TRUST	0.500		0	0	0	NR	NR	0
LAST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<i>State and tribal registered storage tank lists</i>								
UST	0.250	1	0	0	NR	NR	NR	1
AST	0.250	1	0	0	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
<i>State and tribal institutional control / engineering control registries</i>								
AUL	0.500		0	0	0	NR	NR	0
<i>State and tribal voluntary cleanup sites</i>								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
<u>ADDITIONAL ENVIRONMENTAL RECORDS</u>								
<i>Local Brownfield lists</i>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<i>Local Lists of Landfill / Solid Waste Disposal Sites</i>								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HIST LF	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
<i>Local Lists of Hazardous waste / Contaminated Sites</i>								
US CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
<i>Local Land Records</i>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<i>Records of Emergency Release Reports</i>								
HMIRS	TP		NR	NR	NR	NR	NR	0
CO ERNS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
<i>Other Ascertainable Records</i>								
RCRA NonGen / NLR	0.250		0	1	NR	NR	NR	1
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP	1	NR	NR	NR	NR	NR	1
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
METHANE SITE	TP		NR	NR	NR	NR	NR	0
Methane Investigation	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
NPDES	TP	1	NR	NR	NR	NR	NR	1
AIRS	TP	1	NR	NR	NR	NR	NR	1
UMTRA	0.500		0	0	0	NR	NR	0
ASBESTOS	TP	1	NR	NR	NR	NR	NR	1
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST	TP	3	NR	NR	NR	NR	NR	3
RGA LF	TP		NR	NR	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

A1
Target
Property

FRONT RANGE AIRPORT
5200 FRONT RANGE PARKWAY
WATKINS, CO 80137

FINDS 1012087744
LUST N/A
NPDES
ASBESTOS

Site 1 of 6 in cluster A

Actual:
5487 ft.

FINDS:

Registry ID: 110038447721

Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

LUST:

Status: Closed
Facility Id: 1120
Event ID: 10059
Confirmed Release: 05/09/2006
Log Date: 04/25/2006

NPDES:

Primary Permit SIC Code: 4952
Permit Number: CO0047741
Permit Name: Front Range Airport WWTF
Termination Date: Not reported
Permit Status Desc: Admin Continued
Receiving Water: Bear Gulch
Issued: 01/22/2009
Effective: 03/01/2009
Expires: 02/28/2014
Permit Type Desc: Not reported
Permittee Street Address: 5200 Front Range Pkwy
Addr City/State/Zip: Watkins, CO 80137
Contact Name: Lawson
Contact Office Phone Num: 3032619103
Contact Office Phone Ext: Not reported

Primary Permit SIC Code: 4581
Permit Number: COR900211
Permit Name: Front Range Airport Authority
Termination Date: Not reported
Permit Status Desc: Effective
Receiving Water: Unnamed tributary - West Sand Creek
Issued: 05/18/2012
Effective: 07/01/2012
Expires: 06/30/2017
Permit Type Desc: Not reported
Permittee Street Address: 5200 Front Range Pkwy
Addr City/State/Zip: Watkins, CO 80137
Contact Name: Heap

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRONT RANGE AIRPORT (Continued)

1012087744

Contact Office Phone Num: 3032619100
Contact Office Phone Ext: Not reported

CO ASBESTOS:

Year: 2010
Permit Number: Not reported
Permit Date: 8/9/2010
Contractor: Federal Aviation Administration
Project: 19
Linear Ft: Not reported
Square Ft: Not reported
Project Type: Demolition
Demo Number: 10AD3027D
Notice Date: Not reported
Drums: Not reported
Begin Date: Not reported
End Date: Not reported

**A2
Target
Property**

**FRONT RANGE AIRPORT AUTHORITY
5200 FRONT RANGE PKWY WATKINS CO 80137
WATKINS, CO**

**RGA LUST S115317502
N/A**

Site 2 of 6 in cluster A

**Actual:
5487 ft.**

RGA LUST:
2003 FRONT RANGE AIRPORT AUTHORITY 5200 FRONT RANGE PKWY
WATKINS CO 80137
2002 FRONT RANGE AIRPORT AUTHORITY 5200 FRONT RANGE PKWY
WATKINS CO 80137
2001 FRONT RANGE AIRPORT AUTHORITY 5200 FRONT RANGE PKWY
WATKINS CO 80137

**A3
Target
Property**

**FRONT RANGE AIRPORT AUTHORITY - WATKINS
5200 FRONT RANGE PARKWAY
AURORA AREA, CO 80137**

**AIRS S116621651
N/A**

Site 3 of 6 in cluster A

**Actual:
5487 ft.**

CO AIRS:
County/Plant ID: 001-2062
Contact Person: DAVID MCLAUGHLIN
Contact Phone: (303)261-9100
Latitude: 394727.11
Longitude: 1043258.22
SIC Primary: 4512
NAICS Primary: 481111
Unique Emmission Unit ID: 001
Construction Permit Number: 13AD1996
Emission Unit Description: CUMMINS DIESEL GENSET
Full Pollutant Name: CARBON MONOXIDE
Site-wide Estimated Emissions: 0.002297
Site-wide Estimated Emissions Units: Tons Per Year

County/Plant ID: 001-2062
Contact Person: DAVID MCLAUGHLIN
Contact Phone: (303)261-9100
Latitude: 394727.11

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRONT RANGE AIRPORT AUTHORITY - WATKINS (Continued)

S116621651

Longitude: 1043258.22
SIC Primary: 4512
NAICS Primary: 481111
Unique Emmission Unit ID: 001
Construction Permit Number: 13AD1996
Emission Unit Description: CUMMINS DIESEL GENSET
Full Pollutant Name: NITROGEN OXIDES
Site-wide Estimated Emissions: 2.0410999999999999E-2
Site-wide Estimated Emissions Units: Tons Per Year

County/Plant ID: 001-2062
Contact Person: DAVID MCLAUGHLIN
Contact Phone: (303)261-9100
Latitude: 394727.11
Longitude: 1043258.22
SIC Primary: 4512
NAICS Primary: 481111
Unique Emmission Unit ID: 001
Construction Permit Number: 13AD1996
Emission Unit Description: CUMMINS DIESEL GENSET
Full Pollutant Name: PARTICULATE MATTER < 10 UM
Site-wide Estimated Emissions: 3.2899999999999997E-4
Site-wide Estimated Emissions Units: Tons Per Year

County/Plant ID: 001-2062
Contact Person: DAVID MCLAUGHLIN
Contact Phone: (303)261-9100
Latitude: 394727.11
Longitude: 1043258.22
SIC Primary: 4512
NAICS Primary: 481111
Unique Emmission Unit ID: 001
Construction Permit Number: 13AD1996
Emission Unit Description: CUMMINS DIESEL GENSET
Full Pollutant Name: PARTICULATE MATTER < 2.5 UM
Site-wide Estimated Emissions: 3.2899999999999997E-4
Site-wide Estimated Emissions Units: Tons Per Year

County/Plant ID: 001-2062
Contact Person: DAVID MCLAUGHLIN
Contact Phone: (303)261-9100
Latitude: 394727.11
Longitude: 1043258.22
SIC Primary: 4512
NAICS Primary: 481111
Unique Emmission Unit ID: 001
Construction Permit Number: 13AD1996
Emission Unit Description: CUMMINS DIESEL GENSET
Full Pollutant Name: SULFUR DIOXIDE
Site-wide Estimated Emissions: 9.6299999999999999E-4
Site-wide Estimated Emissions Units: Tons Per Year

[Click this hyperlink](#) while viewing on your computer to access 16 additional CO AIRS: record(s) in the EDR Site Report.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

A4
Target
Property

FRONT RANGE AIRPORT
5200 FRONT RANGE PKWY
WATKINS, CO

RGA LUST **S115317504**
N/A

Site 4 of 6 in cluster A

Actual:
5487 ft.

RGA LUST:

2009	FRONT RANGE AIRPORT	5200 FRONT RANGE PKWY
2008	FRONT RANGE AIRPORT	5200 FRONT RANGE PKWY
2007	FRONT RANGE AIRPORT	5200 FRONT RANGE PKWY
2006	FRONT RANGE AIRPORT	5200 FRONT RANGE PKWY
2005	FRONT RANGE AIRPORT	5200 FRONT RANGE PKWY
2004	FRONT RANGE AIRPORT	5200 FRONT RANGE PKWY
1998	FRONT RANGE AIRPORT	5200 FRONT RANGE PKWY

A5
Target
Property

FRONT RANGE AIRPORT AUTHORITY
5200 FRONT RANGE PKWY
WATKINS, CO 80137

UST **U003241210**
AST **N/A**

Site 5 of 6 in cluster A

Actual:
5487 ft.

CO UST:

Facility ID: 1120

Owner:

Owner Id: 20070
Owner Name: FRONT RANGE AIRPORT AUTHORITY
Owner Address: 5200 FRONT RANGE PKWY
Owner City/State/Zip: WATKINS, CO 80137
Owner County: ADAMS

Tank Tag: 1120-1
Tank Status: Currently In Use
Date Tank Installed: 01/03/1984
Tank Age: 30.7049832889396
Tank Chemical: Jet Fuel
Tank Type: UST

Tank Tag: 1120-2
Tank Status: Currently In Use
Date Tank Installed: 01/03/1984
Tank Age: 30.7049832889396
Tank Chemical: Jet Fuel
Tank Type: UST

Tank Tag: 1120-3
Tank Status: Currently In Use
Date Tank Installed: 01/03/1984
Tank Age: 30.7049832889396
Tank Chemical: Av Gas
Tank Type: UST

Tank Tag: 1120-4
Tank Status: Permanently Closed
Date Tank Installed: Not reported
Tank Age: Not reported
Tank Chemical: Not Listed

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRONT RANGE AIRPORT AUTHORITY (Continued)

U003241210

Tank Type: UST

Tank Tag: 1120-8
 Tank Status: Permanently Closed
 Date Tank Installed: Not reported
 Tank Age: Not reported
 Tank Chemical: Gasoline
 Tank Type: UST

AST:
 Facility ID: 1120

Owner:
 Owner Id: 20070
 Owner Name: FRONT RANGE AIRPORT AUTHORITY
 Owner Address: 5200 FRONT RANGE PKWY
 Owner City/State/Zip: WATKINS, CO 80137
 Owner County: ADAMS

Tank Tag: 1120-5
 Tank Status: Currently In Use
 Date Tank Installed: 03/01/1995
 Tank Age: 19.5405997272958
 Tank Contents: Diesel/Gasoline (Multi-Comp)
 Tank Type: AST

Tank Tag: 1120-6
 Tank Status: Permanently Closed
 Date Tank Installed: 01/01/1996
 Tank Age: Not reported
 Tank Contents: Av Gas
 Tank Type: AST

Tank Tag: 1120-7
 Tank Status: Currently In Use
 Date Tank Installed: 04/01/1997
 Tank Age: 17.4529284944191
 Tank Contents: Av Gas
 Tank Type: AST

A6
Target
Property

FRONT RANGE AIRPORT AUTHORITY
5200 FRONT RANGE PKWY
WATKINS, CO

RGA LUST S115317503
N/A

Site 6 of 6 in cluster A

Actual:
5487 ft.

RGA LUST:

2012	FRONT RANGE AIRPORT AUTHORITY	5200 FRONT RANGE PKWY
2011	FRONT RANGE AIRPORT AUTHORITY	5200 FRONT RANGE PKWY
2010	FRONT RANGE AIRPORT AUTHORITY	5200 FRONT RANGE PKWY
2009	FRONT RANGE AIRPORT AUTHORITY	5200 FRONT RANGE PKWY
2008	FRONT RANGE AIRPORT AUTHORITY	5200 FRONT RANGE PKWY
2007	FRONT RANGE AIRPORT AUTHORITY	5200 FRONT RANGE PKWY
2006	FRONT RANGE AIRPORT AUTHORITY	5200 FRONT RANGE PKWY
2000	FRONT RANGE AIRPORT AUTHORITY	5200 FRONT RANGE PKWY
1999	FRONT RANGE AIRPORT AUTHORITY	5200 FRONT RANGE PKWY

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

7
West
1/8-1/4
0.162 mi.
853 ft.

GOLD MEDAL PAINT WORKS
5120 VIOLET HILL ST
WATKINS, CO 80137

RCRA NonGen / NLR **1010314468**
COR000214783

Relative:
Higher

RCRA NonGen / NLR:

Actual:
5490 ft.

Date form received by agency: 10/21/2010
Facility name: GOLD MEDAL PAINT WORKS
Facility address: 5120 VIOLET HILL ST
WATKINS, CO 80137
EPA ID: COR000214783
Mailing address: VIOLET HILL ST
WATKINS, CO 80137
Contact: ARDEN FISCHER
Contact address: VIOLET HILL ST
WATKINS, CO 80137
Contact country: US
Contact telephone: (970) 581-1895
Contact email: Not reported
EPA Region: 08
Land type: Private
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: FRA INVESTORS LLC
Owner/operator address: WADSWORTH BYPASS BLDG A STE 10
ARVADA, CO 80003
Owner/operator country: US
Owner/operator telephone: (303) 751-9339
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 10/13/2006
Owner/Op end date: Not reported

Owner/operator name: GOLD MEDAL PAINT WORKS
Owner/operator address: VIOLET HILL ST
WATKINS, CO 80137
Owner/operator country: US
Owner/operator telephone: (303) 751-9339
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 10/13/2006
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOLD MEDAL PAINT WORKS (Continued)

1010314468

Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 10/13/2006
Site name: GOLD MEDAL PAINT WORKS
Classification: Small Quantity Generator

Hazardous Waste Summary:

Waste code: D007
Waste name: CHROMIUM

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: D007
Waste name: CHROMIUM

Waste code: F002
Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 10/21/2010
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/22/2009
Evaluation: FACILITY SELF DISCLOSURE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/23/2008
Evaluation: FACILITY SELF DISCLOSURE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOLD MEDAL PAINT WORKS (Continued)

1010314468

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

8
WNW
1/4-1/2
0.251 mi.
1327 ft.

**GOLD METAL PAINT WORKS/NORM TELTOW
5190 VIOLET HILL ST STE F
WATKINS, CO 80137**

**CORRACTS 1014934516
RCRA-CESQG COR000223149
EPA WATCH LIST**

Relative:
Higher

CORRACTS:

Actual:
5490 ft.

EPA ID: COR000223149
EPA Region: 08
Area Name: ENTIRE FACILITY
Actual Date: 20121022
Action: CA200 - RFI Approved
NAICS Code(s): 23816
Roofing Contractors
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: COR000223149
EPA Region: 08
Area Name: ENTIRE FACILITY
Actual Date: 20121022
Action: CA999NF - Corrective Action Process Terminated, No Further Action
NAICS Code(s): 23816
Roofing Contractors
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: COR000223149
EPA Region: 08
Area Name: ENTIRE FACILITY
Actual Date: 20120926
Action: CA190 - RFI Report Received
NAICS Code(s): 23816
Roofing Contractors
Original schedule date: Not reported
Schedule end date: Not reported

RCRA-CESQG:

Date form received by agency: 04/23/2010
Facility name: GOLD METAL PAINT WORKS/NORM TELTOW
Facility address: 5190 VIOLET HILL ST STE F
FRONT RANGE AIRPORT
WATKINS, CO 80137
EPA ID: COR000223149
Mailing address: VIOLET HILL ST STE F
FRONT RANGE AIRPORT
WATKINS, CO 80137
Contact: NORM TELTOW
Contact address: VIOLET HILL ST STE F FRONT RANGE AIRPORT
WATKINS, CO 80137
Contact country: US
Contact telephone: (303) 907-5385
Contact email: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOLD METAL PAINT WORKS/NORM TELTOW (Continued)

1014934516

EPA Region: 08
Land type: Private
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name: NORM TELTOW
Owner/operator address: VIOLET HILL ST STE F FRONT RANGE AIRPORT WATKINS, CO 80127
Owner/operator country: US
Owner/operator telephone: (303) 907-5385
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 04/23/2010
Owner/Op end date: Not reported

Owner/operator name: GOLD MEDAL PAINT WORKS
Owner/operator address: VIOLET HILL ST STE F FRONT RANGE AIRPORT WATKINS, CO 80127
Owner/operator country: US
Owner/operator telephone: (303) 907-5385
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 04/23/2010
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOLD METAL PAINT WORKS/NORM TELTOW (Continued)

1014934516

Universal Waste Summary:

Waste type: Batteries
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

Waste type: Lamps
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

Waste type: Pesticides
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

Waste type: Thermostats
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

Waste type: Batteries
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

Waste type: Lamps
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

Waste type: Pesticides
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

Waste type: Thermostats
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

Historical Generators:

Date form received by agency: 04/06/2010
Site name: GOLD METAL PAINT CO LLC
Classification: Not a generator, verified

Hazardous Waste Summary:

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKEY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D007
Waste name: CHROMIUM

Waste code: D035
Waste name: METHYL ETHYL KETONE

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOLD METAL PAINT WORKS/NORM TELTOW (Continued)

1014934516

ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F005
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Corrective Action Summary:

Event date: 09/26/2012
Event: RFI Report Received

Event date: 10/22/2012
Event: Corrective Action Process Terminated, No Further Action

Event date: 10/22/2012
Event: RFI Approved

Facility Has Received Notices of Violations:

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/14/2011
Date achieved compliance: 07/29/2011
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 07/17/2012
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 06/14/2011
Date achieved compliance: 07/29/2011
Violation lead agency: State
Enforcement action: COMPLIANCE ADVISORY
Enforcement action date: 06/14/2011
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOLD METAL PAINT WORKS/NORM TELTOW (Continued)

1014934516

Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/14/2011
Date achieved compliance: 07/29/2011
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 07/17/2012
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 6000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 06/14/2011
Date achieved compliance: 07/29/2011
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 07/17/2012
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 06/14/2011
Date achieved compliance: 07/29/2011
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 07/17/2012
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 6000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/14/2011
Date achieved compliance: 07/29/2011
Violation lead agency: State
Enforcement action: COMPLIANCE ADVISORY
Enforcement action date: 06/14/2011
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOLD METAL PAINT WORKS/NORM TELTOW (Continued)

1014934516

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 04/06/2010
Date achieved compliance: 05/06/2010
Violation lead agency: State
Enforcement action: COMPLIANCE ADVISORY
Enforcement action date: 04/06/2010
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Listing - General
Date violation determined: 04/06/2010
Date achieved compliance: 05/06/2010
Violation lead agency: State
Enforcement action: COMPLIANCE ADVISORY
Enforcement action date: 04/06/2010
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:

Evaluation date: 07/17/2013
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 07/17/2013
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/16/2011
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Generators - Pre-transport
Date achieved compliance: 07/29/2011
Evaluation lead agency: State

Evaluation date: 11/16/2011
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Generators - General
Date achieved compliance: 07/29/2011
Evaluation lead agency: State

Evaluation date: 07/25/2011
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOLD METAL PAINT WORKS/NORM TELTOW (Continued)

1014934516

Evaluation lead agency: State

Evaluation date: 06/14/2011
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/29/2011
Evaluation lead agency: State

Evaluation date: 06/14/2011
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 07/29/2011
Evaluation lead agency: State

Evaluation date: 06/02/2010
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 04/06/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Listing - General
Date achieved compliance: 05/06/2010
Evaluation lead agency: State

Evaluation date: 04/06/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 05/06/2010
Evaluation lead agency: State

EPA WATCH LIST:
Facility ID: COR000223149
Program: RCRA Facilities
List date: August 2012 Watch List

Facility ID: COR000223149
Program: RCRA Facilities
List date: July 2012 Watch List

Count: 7 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ADAMS COUNTY	S100795434	INERT FILL	124TH HWY 6&85		HIST LF
ADAMS COUNTY	S100795426	FLY ASH DISPOSAL SITE	HWY 224 & YORK		HIST LF
ADAMS COUNTY	S113454784	PLAZA 70 INTERIORS	5440 N VALLEY HWY		VCP
ADAMS COUNTY	S113454770	BBJW ASSOCIATES	5470 VALLEY HIGHWAY		VCP
WATKINS	U003123182	INTERSTATE SERVICE STA	810 HWY 40 AKA 1790 N WATKINS	80137	UST
WATKINS	1000600633	KUMAR & ASSOCIATES - FRONT RANGE	5100 QUAIL RUN RD FIELD LAB	80137	RCRA NonGen / NLR, FINDS
WATKINS	1008380643	FORMER LOWRY BOMBING AND GUNNERY R	UNKNOWN	80137	FINDS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: N/A
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 10/08/2014
Number of Days to Update: 78	Next Scheduled EDR Contact: 01/19/2015
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: N/A
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 10/08/2014
Number of Days to Update: 78	Next Scheduled EDR Contact: 01/19/2015
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: N/A
Date Made Active in Reports: 01/28/2014	Last EDR Contact: 10/08/2014
Number of Days to Update: 78	Next Scheduled EDR Contact: 01/19/2015
	Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 08/28/2014
Number of Days to Update: 94	Next Scheduled EDR Contact: 12/08/2014
	Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/08/2014	Telephone: 703-603-8704
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 10/07/2014
Number of Days to Update: 45	Next Scheduled EDR Contact: 01/19/2015
	Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 11/11/2013	Telephone: 703-412-9810
Date Made Active in Reports: 02/13/2014	Last EDR Contact: 08/28/2014
Number of Days to Update: 94	Next Scheduled EDR Contact: 12/08/2014
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/10/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 06/23/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/15/2014	Telephone: 703-603-0695
Date Made Active in Reports: 09/18/2014	Last EDR Contact: 09/08/2014
Number of Days to Update: 65	Next Scheduled EDR Contact: 12/22/2014
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 06/23/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/15/2014	Telephone: 703-603-0695
Date Made Active in Reports: 09/18/2014	Last EDR Contact: 09/08/2014
Number of Days to Update: 65	Next Scheduled EDR Contact: 12/22/2014
	Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2014	Source: Department of the Navy
Date Data Arrived at EDR: 05/30/2014	Telephone: 843-820-7326
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 08/14/2014
Number of Days to Update: 18	Next Scheduled EDR Contact: 12/01/2014
	Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/30/2013	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 10/01/2013	Telephone: 202-267-2180
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 09/30/2014
Number of Days to Update: 66	Next Scheduled EDR Contact: 01/12/2015
	Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A	Source: Department of Public Health & Environment
Date Data Arrived at EDR: N/A	Telephone: 303-692-3300
Date Made Active in Reports: N/A	Last EDR Contact: 08/13/2014
Number of Days to Update: N/A	Next Scheduled EDR Contact: 12/01/2014
	Data Release Frequency: N/A

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Sites & Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/18/2014	Source: Department of Public Health & Environment
Date Data Arrived at EDR: 08/20/2014	Telephone: 303-692-3300
Date Made Active in Reports: 09/12/2014	Last EDR Contact: 08/14/2014
Number of Days to Update: 23	Next Scheduled EDR Contact: 11/24/2014
	Data Release Frequency: Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank List

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 09/09/2014	Source: Department of Labor and Employment, Oil Inspection Section
Date Data Arrived at EDR: 09/11/2014	Telephone: 303-318-8521
Date Made Active in Reports: 09/30/2014	Last EDR Contact: 06/09/2014
Number of Days to Update: 19	Next Scheduled EDR Contact: 09/22/2014
	Data Release Frequency: Quarterly

TRUST: LUST Trust Sites

Reimbursement application package. The 1989 Colorado General Assembly established Colorado's Petroleum Storage Tank Fund. The Fund reimburses eligible applicants for allowable costs incurred in cleaning up petroleum contamination from underground and aboveground petroleum storage tanks, as well as for third-party liability expenses. Remediation of contamination caused by railroad or aircraft fuel is not eligible for reimbursement. The Fund satisfies federal Environmental Protection Agency financial assurance requirements. Monies in the Fund come from various sources, predominantly the state environmental surcharge imposed on all petroleum products except railroad or aircraft fuel.

Date of Government Version: 07/16/2014	Source: Department of Labor and Employment, Oil Inspection Section
Date Data Arrived at EDR: 07/17/2014	Telephone: 303-318-8521
Date Made Active in Reports: 07/24/2014	Last EDR Contact: 09/29/2014
Number of Days to Update: 7	Next Scheduled EDR Contact: 01/12/2015
	Data Release Frequency: Varies

LAST: Leaking Aboveground Storage Tank Listing

A listing of leaking aboveground storage tank sites.

Date of Government Version: 09/09/2014	Source: Department of Labor & Employment
Date Data Arrived at EDR: 09/11/2014	Telephone: 303-318-8525
Date Made Active in Reports: 09/30/2014	Last EDR Contact: 09/08/2014
Number of Days to Update: 19	Next Scheduled EDR Contact: 12/22/2014
	Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 05/20/2014	Source: EPA Region 10
Date Data Arrived at EDR: 06/10/2014	Telephone: 206-553-2857
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 04/28/2014
Number of Days to Update: 73	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 05/22/2014	Source: EPA Region 7
Date Data Arrived at EDR: 08/22/2014	Telephone: 913-551-7003
Date Made Active in Reports: 09/18/2014	Last EDR Contact: 04/28/2014
Number of Days to Update: 27	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 08/04/2014	Source: EPA, Region 5
Date Data Arrived at EDR: 08/05/2014	Telephone: 312-886-7439
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 04/28/2014
Number of Days to Update: 17	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/13/2014	Source: EPA Region 8
Date Data Arrived at EDR: 08/15/2014	Telephone: 303-312-6271
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 07/22/2014
Number of Days to Update: 7	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013	Source: EPA Region 1
Date Data Arrived at EDR: 05/01/2013	Telephone: 617-918-1313
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 08/01/2014
Number of Days to Update: 184	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 07/30/2014	Source: EPA Region 4
Date Data Arrived at EDR: 08/12/2014	Telephone: 404-562-8677
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 04/22/2014
Number of Days to Update: 10	Next Scheduled EDR Contact: 08/11/2014
	Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/14/2014	Source: EPA Region 6
Date Data Arrived at EDR: 05/15/2014	Telephone: 214-665-6597
Date Made Active in Reports: 07/15/2014	Last EDR Contact: 07/22/2014
Number of Days to Update: 61	Next Scheduled EDR Contact: 11/20/2014
	Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2013	Telephone: 415-972-3372
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 07/22/2014
Number of Days to Update: 42	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal registered storage tank lists

UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 09/09/2014
Date Data Arrived at EDR: 09/11/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 7

Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Quarterly

AST: Aboveground Tank List

Aboveground storage tank locations.

Date of Government Version: 09/09/2014
Date Data Arrived at EDR: 09/11/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 7

Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 271

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 07/30/2014
Date Data Arrived at EDR: 08/12/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/04/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 17

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 07/25/2014
Date Data Arrived at EDR: 07/28/2014
Date Made Active in Reports: 08/22/2014
Number of Days to Update: 25

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 08/20/2014	Source: EPA Region 7
Date Data Arrived at EDR: 08/22/2014	Telephone: 913-551-7003
Date Made Active in Reports: 09/18/2014	Last EDR Contact: 04/28/2014
Number of Days to Update: 27	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 08/14/2014	Source: EPA Region 9
Date Data Arrived at EDR: 08/15/2014	Telephone: 415-972-3368
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 07/22/2014
Number of Days to Update: 7	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 05/20/2014	Source: EPA Region 10
Date Data Arrived at EDR: 06/10/2014	Telephone: 206-553-2857
Date Made Active in Reports: 08/15/2014	Last EDR Contact: 07/22/2014
Number of Days to Update: 66	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/13/2014	Source: EPA Region 8
Date Data Arrived at EDR: 08/15/2014	Telephone: 303-312-6137
Date Made Active in Reports: 08/22/2014	Last EDR Contact: 07/22/2014
Number of Days to Update: 7	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010	Source: FEMA
Date Data Arrived at EDR: 02/16/2010	Telephone: 202-646-5797
Date Made Active in Reports: 04/12/2010	Last EDR Contact: 10/10/2014
Number of Days to Update: 55	Next Scheduled EDR Contact: 01/26/2015
	Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

AUL: Environmental Real Covenants List

Senate Bill 01-145 gave authority to the Colorado Department of Public Health and Environment to approve requests to restrict the future use of a property using an enforceable agreement called an environmental covenant. When a contaminated site is not cleaned up completely, land use restrictions may be used to ensure that the selected cleanup remedy is adequately protective of human health and the environment.

Date of Government Version: 08/04/2014	Source: Department of Public Health & Environment
Date Data Arrived at EDR: 08/05/2014	Telephone: 303-692-3331
Date Made Active in Reports: 09/10/2014	Last EDR Contact: 07/30/2014
Number of Days to Update: 36	Next Scheduled EDR Contact: 11/17/2014
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup & Redevelopment Act Application Tracking Report

The Voluntary Cleanup and Redevelopment Act is intended to permit and encourage voluntary cleanups by providing a method to determine clean-up responsibilities in planning the reuse of property. The VCRA was intended for sites which were not covered by existing regulatory programs.

Date of Government Version: 05/14/2014	Source: Department of Public Health and Environmental
Date Data Arrived at EDR: 07/18/2014	Telephone: 303-692-3331
Date Made Active in Reports: 07/23/2014	Last EDR Contact: 10/15/2014
Number of Days to Update: 5	Next Scheduled EDR Contact: 01/26/2015
	Data Release Frequency: Semi-Annually

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 05/30/2014	Source: EPA, Region 1
Date Data Arrived at EDR: 07/01/2014	Telephone: 617-918-1102
Date Made Active in Reports: 08/15/2014	Last EDR Contact: 10/01/2014
Number of Days to Update: 45	Next Scheduled EDR Contact: 01/12/2015
	Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 07/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/03/2014	Telephone: 202-566-2777
Date Made Active in Reports: 07/28/2014	Last EDR Contact: 09/23/2014
Number of Days to Update: 25	Next Scheduled EDR Contact: 01/05/2015
	Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: No Update Planned

HISTORICAL LANDFILL: Historical Landfill List Abandoned/Inactive Landfills.

Date of Government Version: 01/31/1993
Date Data Arrived at EDR: 04/24/1994
Date Made Active in Reports: 05/30/1994
Number of Days to Update: 36

Source: Department of Public Health & Environment
Telephone: 303-692-3300
Last EDR Contact: 09/05/1996
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Registered Recyclers Listing

A listing of registered recycler locations in the state of Colorado.

Date of Government Version: 09/15/2014
Date Data Arrived at EDR: 09/16/2014
Date Made Active in Reports: 09/30/2014
Number of Days to Update: 14

Source: Department of Public Health & Environment
Telephone: 303-692-3337
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/28/2014
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 25

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/03/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: Quarterly

CDL: Meth Lab Locations

Meth lab locations that were reported to the Department of Public Health & Environment.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 07/07/2014
Date Made Active in Reports: 07/24/2014
Number of Days to Update: 17

Source: Department of Public Health and Environment
Telephone: 303-692-3023
Last EDR Contact: 10/03/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/28/2014
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 25

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/03/2014
Next Scheduled EDR Contact: 12/15/2014
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/30/2014
Date Data Arrived at EDR: 07/01/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 79

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/01/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

CO ERNS: Spills Database

State reported spills.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 07/07/2014
Date Made Active in Reports: 07/24/2014
Number of Days to Update: 17

Source: Department of Public Health and Environmental
Telephone: 303-692-2000
Last EDR Contact: 10/03/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 10/15/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/06/2013
Number of Days to Update: 34

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/10/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/02/2014	Telephone: 303-312-6149
Date Made Active in Reports: 09/18/2014	Last EDR Contact: 10/01/2014
Number of Days to Update: 78	Next Scheduled EDR Contact: 01/12/2015
	Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 08/07/2012	Telephone: 202-366-4595
Date Made Active in Reports: 09/18/2012	Last EDR Contact: 08/06/2014
Number of Days to Update: 42	Next Scheduled EDR Contact: 11/17/2014
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 10/15/2014
Number of Days to Update: 62	Next Scheduled EDR Contact: 01/26/2015
	Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 09/10/2014	Telephone: 202-528-4285
Date Made Active in Reports: 09/18/2014	Last EDR Contact: 09/10/2014
Number of Days to Update: 8	Next Scheduled EDR Contact: 12/22/2014
	Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2013	Source: Department of Justice, Consent Decree Library
Date Data Arrived at EDR: 01/24/2014	Telephone: Varies
Date Made Active in Reports: 02/24/2014	Last EDR Contact: 09/30/2014
Number of Days to Update: 31	Next Scheduled EDR Contact: 01/12/2015
	Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013	Source: EPA
Date Data Arrived at EDR: 12/12/2013	Telephone: 703-416-0223
Date Made Active in Reports: 02/24/2014	Last EDR Contact: 09/09/2014
Number of Days to Update: 74	Next Scheduled EDR Contact: 12/22/2014
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010	Source: Department of Energy
Date Data Arrived at EDR: 10/07/2011	Telephone: 505-845-0011
Date Made Active in Reports: 03/01/2012	Last EDR Contact: 08/20/2014
Number of Days to Update: 146	Next Scheduled EDR Contact: 12/08/2014
	Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 01/30/2014	Source: Department of Labor, Mine Safety and Health Administration
Date Data Arrived at EDR: 03/05/2014	Telephone: 303-231-5959
Date Made Active in Reports: 07/15/2014	Last EDR Contact: 09/04/2014
Number of Days to Update: 132	Next Scheduled EDR Contact: 12/15/2014
	Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011	Source: EPA
Date Data Arrived at EDR: 07/31/2013	Telephone: 202-566-0250
Date Made Active in Reports: 09/13/2013	Last EDR Contact: 08/29/2014
Number of Days to Update: 44	Next Scheduled EDR Contact: 12/08/2014
	Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006	Source: EPA
Date Data Arrived at EDR: 09/29/2010	Telephone: 202-260-5521
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 09/26/2014
Number of Days to Update: 64	Next Scheduled EDR Contact: 01/05/2015
	Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/19/2014
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/08/2014
	Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/19/2014
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/08/2014
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2008
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009	Source: EPA
Date Data Arrived at EDR: 12/10/2010	Telephone: 202-564-4203
Date Made Active in Reports: 02/25/2011	Last EDR Contact: 07/22/2014
Number of Days to Update: 77	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 05/06/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/16/2014	Telephone: 202-564-5088
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 10/10/2014
Number of Days to Update: 32	Next Scheduled EDR Contact: 01/26/2015
	Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2013	Source: EPA
Date Data Arrived at EDR: 07/17/2013	Telephone: 202-566-0500
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 10/15/2014
Number of Days to Update: 107	Next Scheduled EDR Contact: 01/26/2015
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/22/2013	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 08/02/2013	Telephone: 301-415-7169
Date Made Active in Reports: 11/01/2013	Last EDR Contact: 09/08/2014
Number of Days to Update: 91	Next Scheduled EDR Contact: 12/22/2014
	Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/07/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/10/2014	Telephone: 202-343-9775
Date Made Active in Reports: 07/28/2014	Last EDR Contact: 10/08/2014
Number of Days to Update: 18	Next Scheduled EDR Contact: 01/19/2015
	Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/18/2013	Source: EPA
Date Data Arrived at EDR: 02/27/2014	Telephone: (303) 312-6312
Date Made Active in Reports: 03/12/2014	Last EDR Contact: 09/10/2014
Number of Days to Update: 13	Next Scheduled EDR Contact: 12/22/2014
	Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

RMP: Risk Management Plans

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/23/2014	Telephone: 202-564-8600
Date Made Active in Reports: 07/28/2014	Last EDR Contact: 07/22/2014
Number of Days to Update: 66	Next Scheduled EDR Contact: 11/10/2014
	Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011	Source: EPA/NTIS
Date Data Arrived at EDR: 02/26/2013	Telephone: 800-424-9346
Date Made Active in Reports: 04/19/2013	Last EDR Contact: 08/29/2014
Number of Days to Update: 52	Next Scheduled EDR Contact: 12/08/2014
	Data Release Frequency: Biennially

METHANE SITE: Methane Site Investigations - Jefferson County 1980

The objectives of the study are to define as closely as possible the boundaries of methane producing solid waste landfills.

Date of Government Version: 12/31/1980	Source: Jefferson County Health Department
Date Data Arrived at EDR: 02/13/1995	Telephone: 303-239-7175
Date Made Active in Reports: 04/04/1995	Last EDR Contact: 01/27/1995
Number of Days to Update: 50	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

METHANE INVESTIGATION: Methane Gas & Swamp Findings

The primary objective of this study was to assess methane gas related hazards at selected landfill sites in Colorado. These sites were selected by the Colorado Department of Health following evaluation of responses received from County and Municipal agencies about completed and existing landfills within their jurisdiction.

Date of Government Version: 03/15/1979	Source: Department of Health
Date Data Arrived at EDR: 02/13/1995	Telephone: 303-640-3335
Date Made Active in Reports: 04/04/1995	Last EDR Contact: 01/27/1995
Number of Days to Update: 50	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

DRYCLEANERS: Drycleaner Facilities

A listing of drycleaning facilities.

Date of Government Version: 09/08/2014	Source: Department of Public Health & Environment
Date Data Arrived at EDR: 09/09/2014	Telephone: 303-692-3213
Date Made Active in Reports: 09/15/2014	Last EDR Contact: 09/08/2014
Number of Days to Update: 6	Next Scheduled EDR Contact: 12/22/2014
	Data Release Frequency: Varies

NPDES: Permitted Facility Listing

A listing of permitted facilities from the Water Quality Control Division.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/31/2014
Date Data Arrived at EDR: 08/05/2014
Date Made Active in Reports: 09/10/2014
Number of Days to Update: 36

Source: Department of Public Health & Environment
Telephone: 303-692-3611
Last EDR Contact: 07/31/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

AIRS: Permitted Facility & Emissions Listing

A listing of Air Pollution Control Division permits and emissions data.

Date of Government Version: 09/08/2014
Date Data Arrived at EDR: 09/09/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 9

Source: Department of Public Health & Environment
Telephone: 303-692-3213
Last EDR Contact: 09/08/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

There were nine uranium mill tailings sites in Colorado designated for cleanup under the federal Uranium Mill Tailings Radiation Control Act. These nine sites, know commonly as UMTRA sites, were remediated jointly by the State of Colorado and the U.S. Department of Energy during the late 1980's and early 1990's. Mill tailings were removed from 8 of the mill sites and relocated in engineered disposal cells. A disposal cell is designed to encapsulate the material, reduce radon emanation, and prevent the movement of water through the material. At one site, Maybell, CO, the tailings were stabilized in-place at the mill site. After remediation of the tailings was completed, the State and DOE began to investigate the residual impacts to groundwater at the mill sites. The groundwater phase of the UMTRA program is on-going.

Date of Government Version: 11/23/2004
Date Data Arrived at EDR: 03/21/2007
Date Made Active in Reports: 05/02/2007
Number of Days to Update: 42

Source: Department of Public Health & Environment
Telephone: 970-248-7164
Last EDR Contact: 08/28/2014
Next Scheduled EDR Contact: 12/08/2014
Data Release Frequency: Varies

ASBESTOS: Asbestos Abatement & Demolition Projects

Asbestos abatement and demolition projects by the contractor.

Date of Government Version: 03/26/2014
Date Data Arrived at EDR: 08/15/2014
Date Made Active in Reports: 09/11/2014
Number of Days to Update: 27

Source: Department of Public Health & Environment
Telephone: 303-692-3100
Last EDR Contact: 08/11/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Semi-Annually

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MINES: Permitted Mines Listing

This dataset represents permitted mines in the State of Colorado

Date of Government Version: 09/19/2011	Source: Division of Reclamation Mining and safety
Date Data Arrived at EDR: 12/26/2012	Telephone: 303-866-3567
Date Made Active in Reports: 02/01/2013	Last EDR Contact: 12/26/2012
Number of Days to Update: 37	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 06/04/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/12/2014	Telephone: 703-603-8787
Date Made Active in Reports: 07/28/2014	Last EDR Contact: 10/06/2014
Number of Days to Update: 46	Next Scheduled EDR Contact: 01/19/2015
	Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001	Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010	Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/02/2009
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/15/2013	Source: EPA
Date Data Arrived at EDR: 07/03/2013	Telephone: 202-564-6023
Date Made Active in Reports: 09/13/2013	Last EDR Contact: 09/30/2014
Number of Days to Update: 72	Next Scheduled EDR Contact: 01/12/2015
	Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/18/2012	Telephone: 703-308-4044
Date Made Active in Reports: 05/25/2012	Last EDR Contact: 08/15/2014
Number of Days to Update: 7	Next Scheduled EDR Contact: 11/24/2014
	Data Release Frequency: Varies

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/15/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

Financial Assurance 1: Financial Assurance Information Listing

A listing of financial assurance information for hazardous waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 01/23/2014
Date Data Arrived at EDR: 01/24/2014
Date Made Active in Reports: 03/03/2014
Number of Days to Update: 38

Source: Department of Public Health & Environment
Telephone: 303-692-3350
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 10/17/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 03/14/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 47

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/10/2014
Next Scheduled EDR Contact: 12/22/2014
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 06/19/2014
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 38

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Quarterly

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/23/2014
Date Data Arrived at EDR: 01/24/2014
Date Made Active in Reports: 03/14/2014
Number of Days to Update: 49

Source: Department of Public Health & Environment
Telephone: 303-392-3350
Last EDR Contact: 10/10/2014
Next Scheduled EDR Contact: 01/19/2015
Data Release Frequency: Varies

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/15/2014
Next Scheduled EDR Contact: 01/26/2015
Data Release Frequency: N/A

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/29/2014
Next Scheduled EDR Contact: 01/12/2015
Data Release Frequency: Annually

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A	Source: EDR, Inc.
Date Data Arrived at EDR: N/A	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: N/A
Number of Days to Update: N/A	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A	Source: EDR, Inc.
Date Data Arrived at EDR: N/A	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: N/A
Number of Days to Update: N/A	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Public Health & Environment in Colorado.

Date of Government Version: N/A	Source: Department of Public Health & Environment
Date Data Arrived at EDR: 07/01/2013	Telephone: N/A
Date Made Active in Reports: 01/15/2014	Last EDR Contact: 06/01/2012
Number of Days to Update: 198	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Labor and Employment, Oil Inspection Section in Colorado.

Date of Government Version: N/A	Source: Department of Labor and Employment, Oil Inspection Section
Date Data Arrived at EDR: 07/01/2013	Telephone: N/A
Date Made Active in Reports: 01/02/2014	Last EDR Contact: 06/01/2012
Number of Days to Update: 185	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ADAMS COUNTY:

Summary Report on Methane Gas Hazards and Surveys Conducted on Domestic and Demolition Landfills in Adams County As of May 8, 1978, all known landfills or dumping sites in the Adams County area have been surveyed.

Date of Government Version: 05/08/1978	Source: Tri-County Health Department
Date Data Arrived at EDR: 02/16/1995	Telephone: 303-761-1340
Date Made Active in Reports: 04/04/1995	Last EDR Contact: 01/27/1995
Number of Days to Update: 47	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

ARAPAHOE COUNTY:

A Survey of Landfills in Arapahoe County

A survey of Arapahoe County was conducted from August through November, 1977, of all open and closed landfills and dumpsites in the county. Each of the sites found was classified as domestic or demolition.

Date of Government Version: 12/31/1978	Source: Tri-County Health Department
Date Data Arrived at EDR: 02/16/1995	Telephone: 303-761-1340
Date Made Active in Reports: 04/04/1995	Last EDR Contact: 01/27/1995
Number of Days to Update: 47	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

BOULDER COUNTY:

Old Landfill Sites

Landfill sites in Boulder county.

Date of Government Version: 05/01/1986	Source: Boulder County Health Department
Date Data Arrived at EDR: 11/14/1995	Telephone: 303-441-1182
Date Made Active in Reports: 12/07/1995	Last EDR Contact: 01/30/1998
Number of Days to Update: 23	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

DENVER COUNTY:

Landfills in Denver County

Landfill sites in the city and county of Denver.

Date of Government Version: 02/13/2014	Source: City and County of Denver
Date Data Arrived at EDR: 05/16/2014	Telephone: 303-436-7300
Date Made Active in Reports: 06/13/2014	Last EDR Contact: 09/26/2014
Number of Days to Update: 28	Next Scheduled EDR Contact: 01/05/2015
	Data Release Frequency: No Update Planned

Investigation of Methane Gas Hazards

The purpose of this study was to assess the actual and potential generation, migration, explosive and related problem associated with specified old landfills, and to identify existing and potential problems, suggested strategies to prevent, abate, and control such problems and recommend investigative and monitoring functions as may be deemed necessary. Eight sites determined to be priorities due to population density and potential hazards to population and property were selected by the Colorado Department of Health.

Date of Government Version: 01/01/1981	Source: City and County of Denver Department of Environmental Health
Date Data Arrived at EDR: 01/29/2013	Telephone: 720-865-5522
Date Made Active in Reports: 03/08/2013	Last EDR Contact: 01/15/2013
Number of Days to Update: 38	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

DOUGLAS COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Douglas County Landfill Key

Landfill sites in Douglas county.

Date of Government Version: 06/12/1991
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

PUEBLO COUNTY:

Designated Disposal & Landfill Sites

Only inert materials. Asphalt, cement, dirt & rock unless otherwise specified. These sites are no longer active.

Date of Government Version: 04/30/1990
Date Data Arrived at EDR: 11/16/1995
Date Made Active in Reports: 12/07/1995
Number of Days to Update: 21

Source: Pueblo City-County Health Department
Telephone: 719-583-4300
Last EDR Contact: 11/13/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRI COUNTY:

Tri-County Area Solid Waste Facilities List (Adams, Arapahoe and Douglas Counties)

Closed Domestic Landfills in Adams County, Closed Domestic Landfills in Arapahoe County, Closed Demolition Landfills in Arapahoe County, Closed Domestic Landfills in Douglas County.

Date of Government Version: 10/15/1983
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

WELD COUNTY:

Solid Waste Facilities in Weld County

Solid Waste Facilities in Weld County.

Date of Government Version: 03/31/2014
Date Data Arrived at EDR: 05/14/2014
Date Made Active in Reports: 06/06/2014
Number of Days to Update: 23

Source: Weld County Department of Public Health
Telephone: 970-304-6415
Last EDR Contact: 08/22/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/19/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: No Update Planned

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/01/2014
Date Data Arrived at EDR: 08/07/2014
Date Made Active in Reports: 10/17/2014
Number of Days to Update: 71

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/18/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 08/07/2014
Number of Days to Update: 48

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/15/2014
Next Scheduled EDR Contact: 12/29/2014
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Daycare Listing

Source: Department of Human Services

Telephone: 303-866-5958

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Riparian Vegetation Data

Source: Division of Wildlife

Telephone: 970-416-3360

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

FRONT RANGE AIRPORT
5200 FRONT RANGE PARKWAY
WATKINS, CO 80137

TARGET PROPERTY COORDINATES

Latitude (North):	39.7883 - 39° 47' 17.88"
Longitude (West):	104.5484 - 104° 32' 54.24"
Universal Tranverse Mercator:	Zone 13
UTM X (Meters):	538668.3
UTM Y (Meters):	4404149.0
Elevation:	5487 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	39104-G5 MANILA, CO
Most Recent Revision:	1951

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

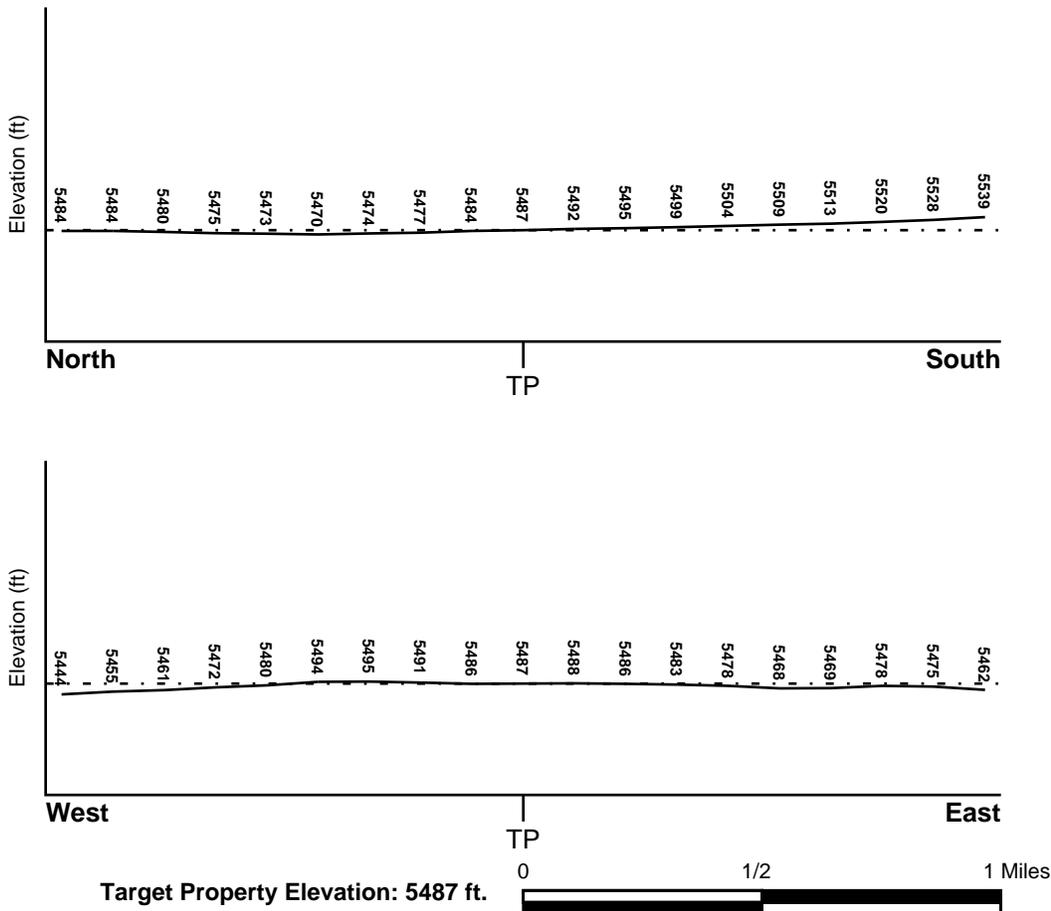
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u> ADAMS, CO	<u>FEMA Flood Electronic Data</u> YES - refer to the Overview Map and Detail Map
Flood Plain Panel at Target Property:	08001C - FEMA DFIRM Flood data
Additional Panels in search area:	Not Reported

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u> MANILA	<u>NWI Electronic Data Coverage</u> YES - refer to the Overview Map and Detail Map
--	---

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

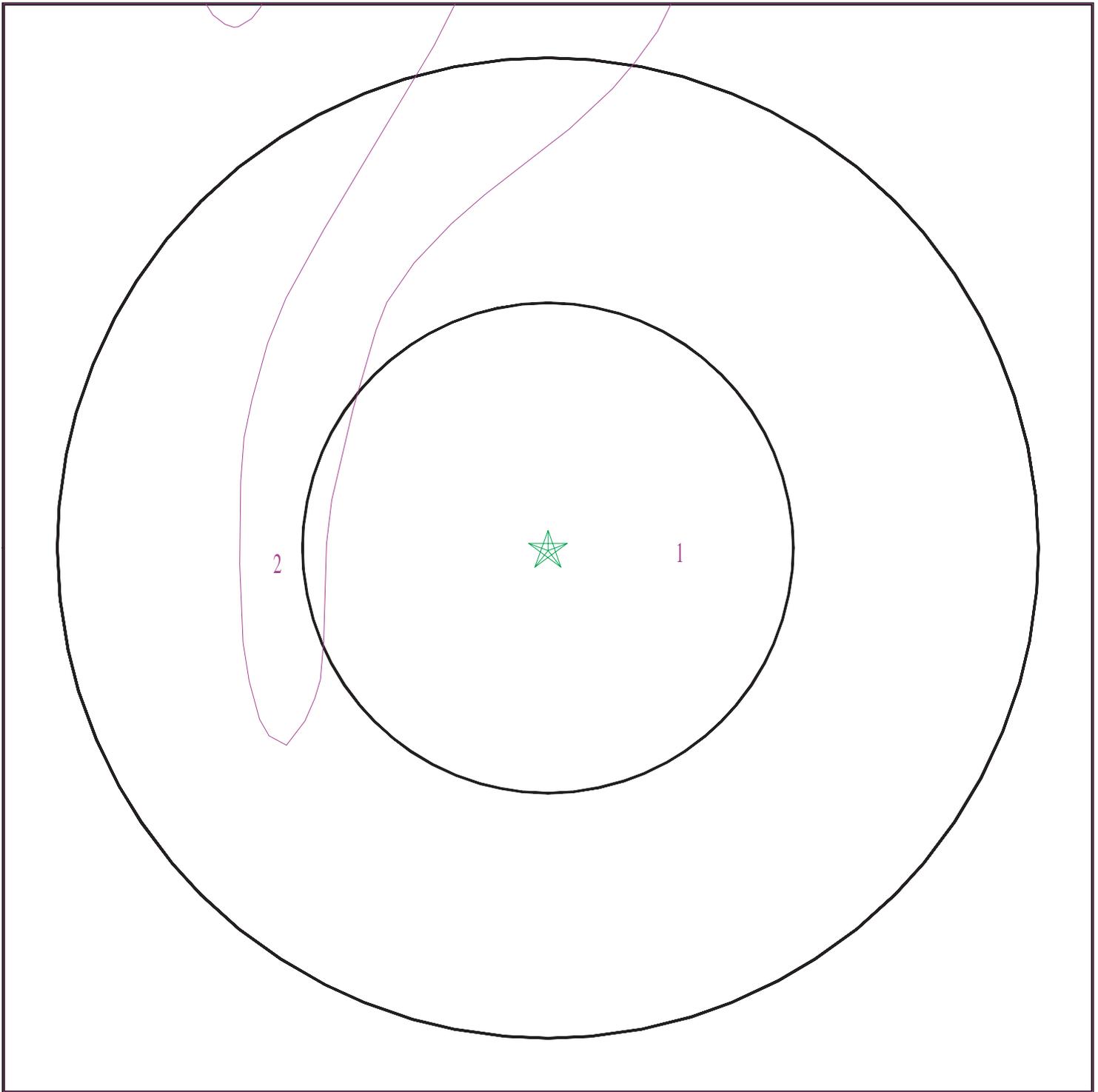
Era: Cenozoic
System: Tertiary
Series: Paleocene
Code: Txc (*decoded above as Era, System & Series*)

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4109968.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: Front Range Airport
ADDRESS: 5200 Front Range Parkway
Watkins CO 80137
LAT/LONG: 39.7883 / 104.5484

CLIENT: Cardno TEC
CONTACT: Ellen Graap Loth
INQUIRY #: 4109968.2s
DATE: October 20, 2014 2:57 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Weld

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.233	Max: 7.8 Min: 6.6
2	5 inches	11 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.411 Min: 0.4233	Max: 7.8 Min: 6.6
3	11 inches	31 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 42 Min: 4	Max: 8.4 Min: 7.9
4	31 inches	59 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 42 Min: 4	Max: 8.4 Min: 7.9

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: Adena

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	3 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay. FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14.11 Min: 4.233	Max: 7.8 Min: 6.6
2	3 inches	22 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4.233 Min: 1.411	Max: 7.8 Min: 6.6
3	22 inches	59 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14.11 Min: 4.233	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	CO5000000324407	1/4 - 1/2 Mile WSW
2	CO5000000325709	1/4 - 1/2 Mile NNW
3	CO5000000326124	1/4 - 1/2 Mile NNW
4	CO5000000325009	1/4 - 1/2 Mile WNW
5	CO5000000324835	1/2 - 1 Mile West
6	CO5000000323521	1/2 - 1 Mile SW
A7	CO5000000325400	1/2 - 1 Mile ENE
A8	CO5000000325401	1/2 - 1 Mile ENE
A9	CO5000000325402	1/2 - 1 Mile ENE
A10	CO5000000325399	1/2 - 1 Mile ENE
11	CO5000000324418	1/2 - 1 Mile West
12	CO5000000326294	1/2 - 1 Mile NW
13	CO5000000323241	1/2 - 1 Mile SW
14	CO5000000325721	1/2 - 1 Mile WNW
15	CO5000000322735	1/2 - 1 Mile SW
16	CO5000000325019	1/2 - 1 Mile West

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

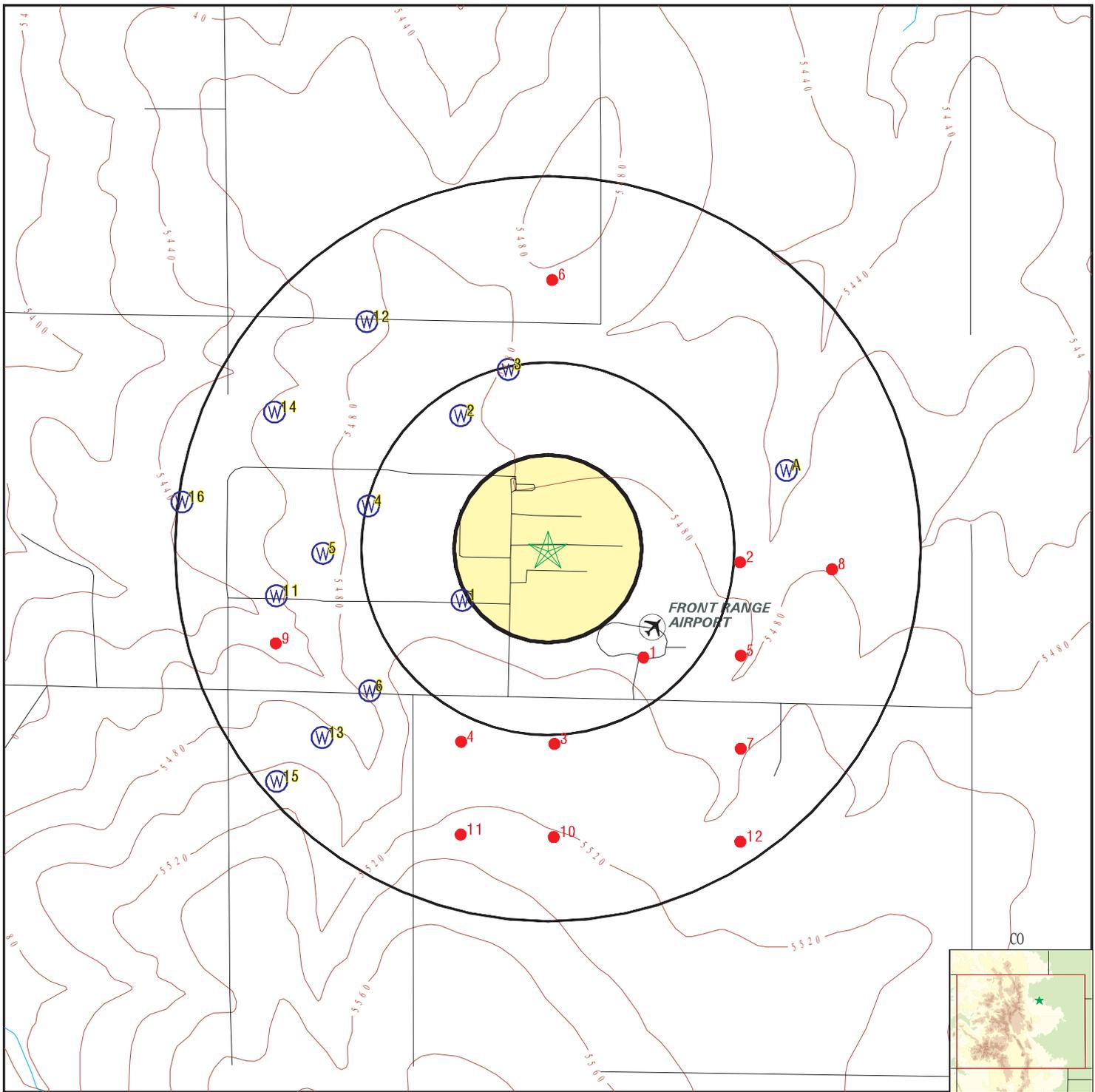
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	COOG90000037861	1/4 - 1/2 Mile SE

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE OIL/GAS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
2	COOG90000038000	1/2 - 1 Mile East
3	COOG90000037714	1/2 - 1 Mile South
4	COOG90000037719	1/2 - 1 Mile SSW
5	COOG90000037864	1/2 - 1 Mile ESE
6	COOG90000038369	1/2 - 1 Mile North
7	COOG90000037706	1/2 - 1 Mile SE
8	COOG90000037994	1/2 - 1 Mile East
9	COOG90000037882	1/2 - 1 Mile WSW
10	COOG90000037586	1/2 - 1 Mile South
11	COOG90000037591	1/2 - 1 Mile SSW
12	COOG90000037575	1/2 - 1 Mile SSE

PHYSICAL SETTING SOURCE MAP - 4109968.2s



- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Oil, gas or related wells



SITE NAME: Front Range Airport
ADDRESS: 5200 Front Range Parkway
 Watkins CO 80137
LAT/LONG: 39.7883 / 104.5484

CLIENT: Cardno TEC
CONTACT: Ellen Graap Loth
INQUIRY #: 4109968.2s
DATE: October 20, 2014 2:57 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

1
WSW
1/4 - 1/2 Mile
Higher

CO WELLS CO5000000324407

Div:	1	Wd:	1
Wdid:	0	Receipt:	9003745
Permitno:	43291	Permitsuf:	Not Reported
Permitrpl:	Not Reported	Status des:	Well Constructed
Current st:	9	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	16
Seca:	Not Reported	Q160:	SE
Q40:	SW	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	538300.125
Utm y:	4403923.8		
Loc accura:	Spotted from quarters	Permitted :	8
Use1:	DOMESTIC	Permitte00:	Not Reported
Use2:	Not Reported	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	ALL UNNAMED AQUIFERS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	Not Reported		
Annual app:	1		
Date appli:	Not Reported	Date permi:	Not Reported
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	10/24/1970	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	548
Tperf:	0	Bperf:	0
Pump rate:	10		
Static wat:	140	Full name:	BLANKLEY JOHN A
Mailing ad:	PO BOX 232		
Mailing ci:	BENNETT		
Mailing st:	CO	Mailing zi:	80102
Driller li:	Not Reported	Pump lic:	Not Reported
Date last :	07/18/2007		
Last actio:	Record corrected		
Site id:	CO5000000324407		

2
NNW
1/4 - 1/2 Mile
Higher

CO WELLS CO5000000325709

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Div:	1	Wd:	1
Wdid:	106217	Receipt:	0207687Y
Permitno:	25643	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Permit Expired
Current st:	7	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	16
Seca:	Not Reported	Q160:	NE
Q40:	SW	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	538289.625
Utm y:	4404721.8		
Loc accur:	Spotted from quarters	Permitted :	2
Use1:	MUNICIPAL	Permitte00:	Not Reported
Use2:	Not Reported	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	ALL UNNAMED AQUIFERS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	10/23/1980	Date permi:	03/24/1982
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	DANFORD-CHAMPLIN FARMS LTD
Mailing ad:	PO BOX 98		
Mailing ci:	WATKINS		
Mailing st:	CO	Mailing zi:	80137
Driller li:	LIC	Pump lic:	Not Reported
Date last :	03/24/1983		
Last actio:	Date permit expires if well not constructed		
Site id:	CO5000000325709		

3

NNW
1/4 - 1/2 Mile
Lower

CO WELLS

CO5000000326124

Div:	1	Wd:	1
Wdid:	106216	Receipt:	0276872
Permitno:	25674	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Permit Expired
Current st:	7	Well name:	15LF
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	16
Seca:	Not Reported	Q160:	NE
Q40:	NE	Coordsns:	1300
Coordsns d:	N	Coordsew:	1300
Coordsew d:	E	Utm x:	538494.125
Utm y:	4404922.3		
Loc accura:	Spotted from section lines	Permitted :	3
Use1:	COMMERCIAL	Permitte00:	Not Reported
Use2:	Not Reported	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	ALL UNNAMED AQUIFERS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	10/23/1980	Date permi:	03/24/1982
Date per00:	03/24/1983	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	DUNFORD-CHAMPLIN FARMS LTD
Mailing ad:	PO BOX 98		
Mailing ci:	WATKINS		
Mailing st:	CO	Mailing zi:	80137
Driller li:	LIC	Pump lic:	Not Reported
Date last :	09/04/1996		
Last actio:	Record corrected		
Site id:	CO5000000326124		

4

**WNW
1/4 - 1/2 Mile
Higher**

CO WELLS

CO5000000325009

Div:	1	Wd:	1
Wdid:	106224	Receipt:	0005762
Permitno:	25673	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Well Constructed
Current st:	9	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	16
Seca:	Not Reported	Q160:	SW
Q40:	NE	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	537893.375

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Utm y:	4404329.8	Permitted :	2
Loc accura:	Spotted from quarters	Permitte00:	Not Reported
Use1:	MUNICIPAL	Special us:	Not Reported
Use2:	Not Reported	Aquifer1 n:	LARAMIE FOX HILLS
Use3:	Not Reported		
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	09/02/1980	Date permi:	03/24/1983
Date per00:	Not Reported	Date well :	01/27/1983
Date 1st b:	Not Reported	Date pump :	01/27/1983
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	1710
Tperf:	1520	Bperf:	1668
Pump rate:	125		
Static wat:	279	Full name:	AURORA CITY OF
Mailing ad:	1470 S HAVANA ST STE 400		
Mailing ci:	AURORA	Mailing zi:	80012
Mailing st:	CO	Pump lic:	308
Driller li:	308		
Date last :	10/29/1993		
Last actio:	Record corrected		
Site id:	CO5000000325009		

5

**West
1/2 - 1 Mile
Lower**

CO WELLS

CO5000000324835

Div:	1	Wd:	1
Wdid:	0	Receipt:	0233074
Permitno:	26775	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Permit Expired
Current st:	7	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	16
Seca:	Not Reported	Q160:	SW
Q40:	SE	Coordsns:	1270
Coordsns d:	S	Coordsew:	1321
Coordsew d:	W	Utm x:	537697.375
Utm y:	4404124		
Loc accura:	Spotted from section lines	Permitted :	2
Use1:	MUNICIPAL	Permitte00:	Not Reported
Use2:	Not Reported	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	ALL UNNAMED AQUIFERS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	02/04/1983	Date permi:	09/07/1983

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Date per00:	09/07/1985	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	DANFORD-CHAMPL
Mailing ad:	Not Reported		
Mailing ci:	ENGLEWOOD		
Mailing st:	CO	Mailing zi:	80112
Driller li:	LIC	Pump lic:	Not Reported
Date last :	11/29/1995		
Last actio:	Date permit expires if well not constructed		
Site id:	CO5000000324835		

**6
SW
1/2 - 1 Mile
Higher**

CO WELLS CO5000000323521

Div:	1	Wd:	1
Wdid:	106230	Receipt:	0005768
Permitno:	25679	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Permit Expired
Current st:	7	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	21
Seca:	Not Reported	Q160:	NW
Q40:	NE	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	537902.625
Utm y:	4403531.3		
Loc accura:	Spotted from quarters	Permitted :	2
Use1:	MUNICIPAL	Permitte00:	Not Reported
Use2:	Not Reported	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	LARAMIE FOX HILLS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	10/23/1980	Date permi:	03/24/1982
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	DANFORD-CHAMPLIN FARMS LTD
Mailing ad:	PO BOX 98		
Mailing ci:	WATKINS		
Mailing st:	CO	Mailing zi:	80137

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Driller li:	LIC	Pump lic:	Not Reported
Date last :	03/24/1983		
Last actio:	Date permit expires if well not constructed		
Site id:	CO5000000323521		

**A7
ENE
1/2 - 1 Mile
Lower**

CO WELLS CO5000000325400

Div:	1	Wd:	1
Wdid:	0	Receipt:	3638464B
Permitno:	2241	Permitsuf:	BD
Permitrpl:	Not Reported	Status des:	Not Reported
Current st:	0	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	9	Manageme00:	LOST CREEK
Designated:	5	Designat00:	LOST CREEK
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	157.5		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	15
Seca:	Not Reported	Q160:	Not Reported
Q40:	Not Reported	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	539696.3125
Utm y:	4404492		
Loc accur:	Spotted from quarters	Permitted :	3
Use1:	COMMERCIAL	Permitte00:	8
Use2:	DOMESTIC	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	LOWER ARAPAHOE
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	Not Reported		
Annual app:	0		
Date appli:	03/20/2009	Date permi:	06/24/2010
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	DETER ISSUED		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	SILAGI MOSHE
Mailing ad:	101 HODENCAMP RD STE 200		
Mailing ci:	THOUSAND OAKS		
Mailing st:	CA	Mailing zi:	91360-
Driller li:	Not Reported	Pump lic:	Not Reported
Date last :	06/24/2010		
Last actio:	Date the permit was issued.		
Site id:	CO5000000325400		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

A8
ENE
1/2 - 1 Mile
Lower

CO WELLS CO5000000325401

Div:	1	Wd:	1
Wdid:	0	Receipt:	3638464C
Permitno:	2243	Permitsuf:	BD
Permitrpl:	Not Reported	Status des:	Not Reported
Current st:	0	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	9	Manageme00:	LOST CREEK
Designated:	5	Designat00:	LOST CREEK
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	157.5		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	15
Seca:	Not Reported	Q160:	Not Reported
Q40:	Not Reported	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	539696.3125
Utm y:	4404492		
Loc accura:	Spotted from quarters	Permitted :	3
Use1:	COMMERCIAL	Permitte00:	8
Use2:	DOMESTIC	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	DENVER
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	Not Reported		
Annual app:	0		
Date appli:	03/20/2009	Date permi:	06/24/2010
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	DETER ISSUED		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	SILAGI MOSHE
Mailing ad:	101 HODENCAMP RD STE 200		
Mailing ci:	THOUSAND OAKS		
Mailing st:	CA	Mailing zi:	91360-
Driller li:	Not Reported	Pump lic:	Not Reported
Date last :	06/24/2010		
Last actio:	Date the permit was issued.		
Site id:	CO5000000325401		

A9
ENE
1/2 - 1 Mile
Lower

CO WELLS CO5000000325402

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Div:	1	Wd:	1
Wdid:	0	Receipt:	3642316
Permitno:	2242	Permitsuf:	BD
Permitrpl:	Not Reported	Status des:	Permit Issued; Completion Status Unknown
Current st:	5	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	9	Manageme00:	LOST CREEK
Designated:	5	Designat00:	LOST CREEK
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	157.5		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	15
Seca:	Not Reported	Q160:	Not Reported
Q40:	Not Reported	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	539696.3125
Utm y:	4404492		
Loc accur:	Spotted from quarters	Permitted :	3
Use1:	COMMERCIAL	Permitte00:	8
Use2:	DOMESTIC	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	UPPER ARAPAHOE
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	Not Reported		
Annual app:	0		
Date appli:	08/24/2009	Date permi:	06/24/2010
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	DETER ISSUED		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	SILAGI MOSHE
Mailing ad:	101 HODENCAMP RD STE 200		
Mailing ci:	THOUSAND OAKS		
Mailing st:	CA	Mailing zi:	91360-
Driller li:	Not Reported	Pump lic:	Not Reported
Date last :	06/24/2010		
Last actio:	Date the permit was issued.		
Site id:	CO5000000325402		

**A10
ENE
1/2 - 1 Mile
Lower**

CO WELLS CO5000000325399

Div:	1	Wd:	1
Wdid:	0	Receipt:	3638464A
Permitno:	2240	Permitsuf:	BD
Permitrpl:	Not Reported	Status des:	Not Reported
Current st:	0	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	9	Manageme00:	LOST CREEK
Designated:	5	Designat00:	LOST CREEK
Subdivisio:	Not Reported	Filing:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	157.5		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	15
Seca:	Not Reported	Q160:	Not Reported
Q40:	Not Reported	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	539696.3125
Utm y:	4404492		
Loc accura:	Spotted from quarters	Permitted :	3
Use1:	COMMERCIAL	Permitte00:	8
Use2:	DOMESTIC	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	LARAMIE FOX HILLS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	Not Reported		
Annual app:	0		
Date appli:	03/20/2009	Date permi:	06/24/2010
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	SEE HEARING:09-GW-28	DETER ISSUED	
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	SILAGI MOSHE
Mailing ad:	101 HODENCAMP RD STE 200		
Mailing ci:	THOUSAND OAKS		
Mailing st:	CA	Mailing zi:	91360-
Driller li:	Not Reported	Pump lic:	Not Reported
Date last :	06/24/2010		
Last actio:	Date the permit was issued.		
Site id:	CO5000000325399		

**11
West
1/2 - 1 Mile
Lower**

CO WELLS CO5000000324418

Div:	1	Wd:	1
Wdid:	106225	Receipt:	0005761
Permitno:	25646	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Permit Extended
Current st:	6	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	16
Seca:	Not Reported	Q160:	SW
Q40:	SW	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	537498

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Utm y:	4403939.8	Permitted :	2
Loc accura:	Spotted from quarters	Permitte00:	Not Reported
Use1:	MUNICIPAL	Special us:	Not Reported
Use2:	Not Reported	Aquifer1 n:	ALL UNNAMED AQUIFERS
Use3:	Not Reported		
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	09/02/1980	Date permi:	03/24/1983
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	AURORA CITY OF
Mailing ad:	1470 S HAVANA ST STE 400		
Mailing ci:	AURORA		
Mailing st:	CO	Mailing zi:	80012
Driller li:	LIC	Pump lic:	Not Reported
Date last :	10/29/1993		
Last actio:	Record corrected		
Site id:	CO5000000324418		

**12
NW
1/2 - 1 Mile
Lower**

CO WELLS CO5000000326294

Div:	1	Wd:	1
Wdid:	106214	Receipt:	0207687X
Permitno:	25672	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Permit Expired
Current st:	7	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	16
Seca:	Not Reported	Q160:	NW
Q40:	NE	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	537882.3125
Utm y:	4405125.8		
Loc accura:	Spotted from quarters	Permitted :	2
Use1:	MUNICIPAL	Permitte00:	Not Reported
Use2:	Not Reported	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	LARAMIE FOX HILLS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	10/23/1980	Date permi:	03/24/1982

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	DANFORD-CHAMPLIN FARMS LTD
Mailing ad:	PO BOX 98		
Mailing ci:	WATKINS		
Mailing st:	CO	Mailing zi:	80137
Driller li:	LIC	Pump lic:	Not Reported
Date last :	03/24/1983		
Last actio:	Date permit expires if well not constructed		
Site id:	CO5000000326294		

**13
SW
1/2 - 1 Mile
Lower**

CO WELLS CO5000000323241

Div:	1	Wd:	1
Wdid:	0	Receipt:	0489465
Permitno:	25649	Permitsuf:	F
Permitrpl:	R	Status des:	Well Constructed
Current st:	9	Well name:	23-AR
Case no:	80CW0238	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	21
Seca:	Not Reported	Q160:	NW
Q40:	SW	Coordsns:	1340
Coordsns d:	N	Coordsew:	1300
Coordsew d:	W	Utm x:	537698.5
Utm y:	4403328.8		
Loc accur:	Spotted from section lines	Permitted :	4
Use1:	INDUSTRIAL	Permitte00:	2
Use2:	MUNICIPAL	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	ARAPAHOE
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	Not Reported		
Annual app:	0		
Date appli:	03/25/2002	Date permi:	05/09/2002
Date per00:	05/09/2003	Date well :	06/13/2002
Date 1st b:	05/20/2003	Date pump :	12/27/2002
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	1208
Tperf:	0	Bperf:	0
Pump rate:	177		
Static wat:	282	Full name:	AURORA CITY OF
Mailing ad:	C/O BISHOP-BROGDEN ASSOCIATES 333 W HAMPDEN AVE #1050		
Mailing ci:	ENGLEWOOD		
Mailing st:	CO	Mailing zi:	80110-

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Driller li: 863 Pump lic: 878
 Date last : 09/26/2003
 Last actio: Notice of Commencement of Beneficial Use received (Statewide nontributary rules).
 Site id: CO5000000323241

14
WNW
1/2 - 1 Mile
Lower

CO WELLS CO5000000325721

Div:	1	Wd:	1
Wdid:	106215	Receipt:	0207687W
Permitno:	25642	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Permit Expired
Current st:	7	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	16
Seca:	Not Reported	Q160:	NW
Q40:	SW	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	537486
Utm y:	4404733.3		
Loc accura:	Spotted from quarters	Permitted :	2
Use1:	MUNICIPAL	Permitte00:	Not Reported
Use2:	Not Reported	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	ALL UNNAMED AQUIFERS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	10/23/1980	Date permi:	03/24/1982
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	DANFORD-CHAMPLIN FARMS LTD
Mailing ad:	PO BOX 98		
Mailing ci:	WATKINS		
Mailing st:	CO	Mailing zi:	80137
Driller li:	LIC	Pump lic:	Not Reported
Date last :	03/24/1983		
Last actio:	Date permit expires if well not constructed		
Site id:	CO5000000325721		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

15
SW
1/2 - 1 Mile
Higher

CO WELLS CO5000000322735

Div:	1	Wd:	1
Wdid:	106231	Receipt:	0005767
Permitno:	25649	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Well Abandoned
Current st:	11	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	21
Seca:	Not Reported	Q160:	NW
Q40:	SW	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	537503.1875
Utm y:	4403137.8		
Loc accura:	Spotted from quarters	Permitted :	2
Use1:	MUNICIPAL	Permitte00:	Not Reported
Use2:	Not Reported	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	ALL UNNAMED AQUIFERS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	09/02/1980	Date permi:	03/24/1983
Date per00:	Not Reported	Date well :	04/13/1983
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	06/19/2002		
Comment :	Not Reported		
Elev:	0	Well depth:	1211
Tperf:	0	Bperf:	0
Pump rate:	200		
Static wat:	517	Full name:	AURORA CITY OF
Mailing ad:	1470 S HAVANA ST STE 400		
Mailing ci:	AURORA		
Mailing st:	CO	Mailing zi:	80012
Driller li:	308	Pump lic:	Not Reported
Date last :	06/25/2002		
Last actio:	Date abandonment report received.		
Site id:	CO5000000322735		

16
West
1/2 - 1 Mile
Lower

CO WELLS CO5000000325019

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Div:	1	Wd:	1
Wdid:	106220	Receipt:	0005760
Permitno:	25671	Permitsuf:	F
Permitrpl:	Not Reported	Status des:	Permit Expired
Current st:	7	Well name:	Not Reported
Case no:	Not Reported	Ogcc id:	Not Reported
City:	1		
County:	ADAMS		
Management:	0	Manageme00:	Not Reported
Designated:	0	Designat00:	Not Reported
Subdivisio:	Not Reported	Filing:	Not Reported
Lot:	Not Reported	Block:	Not Reported
County par:	Not Reported		
Parcel siz:	0		
Pm:	S	Ts:	3
Tdir:	S	Rng:	64
Rdir:	W	Sec:	17
Seca:	Not Reported	Q160:	SE
Q40:	NE	Coordsns:	0
Coordsns d:	Not Reported	Coordsew:	0
Coordsew d:	Not Reported	Utm x:	537088.6875
Utm y:	4404343.3		
Loc accur:	Spotted from quarters	Permitted :	2
Use1:	MUNICIPAL	Permitte00:	Not Reported
Use2:	Not Reported	Special us:	Not Reported
Use3:	Not Reported	Aquifer1 n:	LARAMIE FOX HILLS
Aquifer2 n:	Not Reported		
Permitte01:	0		
Permitte02:	acres		
Annual app:	0		
Date appli:	10/23/1980	Date permi:	03/24/1982
Date per00:	Not Reported	Date well :	Not Reported
Date 1st b:	Not Reported	Date pump :	Not Reported
Date wel00:	Not Reported		
Comment :	Not Reported		
Elev:	0	Well depth:	0
Tperf:	0	Bperf:	0
Pump rate:	0		
Static wat:	0	Full name:	DANFORD-CHAMPLIN FARMS LTD
Mailing ad:	PO BOX 98		
Mailing ci:	WATKINS		
Mailing st:	CO	Mailing zi:	80137
Driller li:	LIC	Pump lic:	Not Reported
Date last :	03/24/1983		
Last actio:	Date permit expires if well not constructed		
Site id:	CO5000000325019		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

1
SE
1/4 - 1/2 Mile

OIL_GAS COOG90000037861

Link fld:	00107949	Attrib 1:	05-001-07949
Attrib 2:	GULF ENERGY CORP		
Attrib 3:	15-14 PILAND		
Symbol:	LO_XX	Sdf key:	00107949&TYPE=WELL
Facility i:	202544		
Facility type:	WELL	Facility Status:	Dry and abandoned
Operator n:	36500		
Well num:	15-14	Well name:	PILAND
Field code:	52575		
Dist n s:	600		
Dir n s:	S		
Dist e w:	600		
Dir e w:	W	Qtrqtr:	SWSW
Sec:	15	Twp:	3S
Range:	64W	Meridian:	6
Latn:	39.784073		
Longn:	0		
Ground ele:	5491		
Utm x:	539082		
Utm y:	4403891		
Locqual:	Planned Footage	Field name:	MANILA
Name 1:	GULF ENERGY CORP		
Api seq nu:	07949		
Api county:	001		
Locationid:	376595		
Site id:	COOG90000037861		

2
East
1/2 - 1 Mile

OIL_GAS COOG90000038000

Link fld:	00106506	Attrib 1:	05-001-06506
Attrib 2:	SUMMIT OIL CO		
Attrib 3:	A-1 PILAND & CO		
Symbol:	LO_XX	Sdf key:	00106506&TYPE=WELL
Facility i:	201103		
Facility type:	WELL	Facility Status:	Dry and abandoned
Operator n:	83700		
Well num:	A-1	Well name:	PILAND & CO
Field code:	99999		
Dist n s:	1980		
Dir n s:	S		
Dist e w:	1980		
Dir e w:	W	Qtrqtr:	NESW
Sec:	15	Twp:	3S
Range:	64W	Meridian:	6
Latn:	39.787773		
Longn:	0		
Ground ele:	5472		
Utm x:	539497		
Utm y:	4404304		
Locqual:	Planned Footage	Field name:	WILDCAT

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Name 1: SUMMIT OIL CO
 Api seq nu: 06506
 Api county: 001
 Locationid: 375571
 Site id: COOG90000038000

3
South
1/2 - 1 Mile

OIL_GAS COOG90000037714

Link fld:	00106154	Attrib 1:	05-001-06154
Attrib 2:	RUTH* ULA PEARL		
Attrib 3:	1 RUTH		
Symbol:	LO_XX	Sdf key:	00106154&TYPE=WELL
Facility i:	200751		
Facility type:	WELL	Facility Status:	Shut In
Operator n:	90902		
Well num:	1	Well name:	RUTH
Field code:	52575		
Dist n s:	660		
Dir n s:	N		
Dist e w:	660		
Dir e w:	E	Qtrqtr:	NENE
Sec:	21	Twp:	3S
Range:	64W	Meridian:	6
Latn:	39.780703		
Longn:	0		
Ground ele:	5507		
Utm x:	538700		
Utm y:	4403516		
Locqual:	Planned Footage	Field name:	MANILA
Name 1:	RUTH* ULA PEARL		
Api seq nu:	06154		
Api county:	001		
Locationid:	319655		
Site id:	COOG90000037714		

4
SSW
1/2 - 1 Mile

OIL_GAS COOG90000037719

Link fld:	00106495	Attrib 1:	05-001-06495
Attrib 2:	MARLIS PRODUCTION CO. INC.		
Attrib 3:	4 RUTH		
Symbol:	LO_XX	Sdf key:	00106495&TYPE=WELL
Facility i:	201092		
Facility type:	WELL	Facility Status:	Abandoned Location
Operator n:	100067		
Well num:	4	Well name:	RUTH
Field code:	52575		
Dist n s:	660		
Dir n s:	N		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dist e w:	1980	Qtrqtr:	NWNE
Dir e w:	E	Twp:	3S
Sec:	21	Meridian:	6
Range:	64W		
Latn:	39.780793		
Longn:	0		
Ground ele:	5508		
Utm x:	538297		
Utm y:	4403523		
Locqual:	Planned Footage	Field name:	MANILA
Name 1:	MARLIS PRODUCTION CO. INC.		
Api seq nu:	06495		
Api county:	001		
Locationid:	375563		
Site id:	COOG90000037719		

5
ESE
1/2 - 1 Mile

OIL_GAS COOG90000037864

Link fld:	00106507	Attrib 1:	05-001-06507
Attrib 2:	ROYAL DEVELOPMENT CORP		
Attrib 3:	2 PILAND		
Symbol:	LO_XX	Sdf key:	00106507&TYPE=WELL
Facility i:	201104		
Facility type:	WELL	Facility Status:	Abandoned Location
Operator n:	100634		
Well num:	2	Well name:	PILAND
Field code:	99999		
Dist n s:	660		
Dir n s:	S		
Dist e w:	1980	Qtrqtr:	SESW
Dir e w:	W	Twp:	3S
Sec:	15	Meridian:	6
Range:	64W		
Latn:	39.784143		
Longn:	0		
Ground ele:	5516		
Utm x:	539502		
Utm y:	4403901		
Locqual:	Planned Footage	Field name:	WILDCAT
Name 1:	ROYAL DEVELOPMENT CORP		
Api seq nu:	06507		
Api county:	001		
Locationid:	375572		
Site id:	COOG90000037864		

6
North
1/2 - 1 Mile

OIL_GAS COOG90000038369

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Link fld:	00107699	Attrib 1:	05-001-07699
Attrib 2:	RINCON OPERATING CO		
Attrib 3:	1 OSCAR LARSON		
Symbol:	LO_XX	Sdf key:	00107699&TYPE=WELL
Facility i:	202294		
Facility type:	WELL	Facility Status:	Dry and abandoned
Operator n:	74660		
Well num:	1	Well name:	OSCAR LARSON
Field code:	99999		
Dist n s:	660		
Dir n s:	S		
Dist e w:	660		
Dir e w:	E	Qtrqtr:	SESE
Sec:	9	Twp:	3S
Range:	64W	Meridian:	6
Latn:	39.798753		
Longn:	0		
Ground ele:	5474		
Utm x:	538680		
Utm y:	4405519		
Locqual:	Planned Footage	Field name:	WILDCAT
Name 1:	RINCON OPERATING CO		
Api seq nu:	07699		
Api county:	001		
Locationid:	376402		
Site id:	COOG90000038369		

**7
SE
1/2 - 1 Mile**

OIL_GAS COOG90000037706

Link fld:	00106508	Attrib 1:	05-001-06508
Attrib 2:	ROYAL DEVELOPMENT CORP		
Attrib 3:	1 TUPPS		
Symbol:	LO_XX	Sdf key:	00106508&TYPE=WELL
Facility i:	201105		
Facility type:	WELL	Facility Status:	Abandoned Location
Operator n:	100634		
Well num:	1	Well name:	TUPPS
Field code:	52575		
Dist n s:	660		
Dir n s:	N		
Dist e w:	1980		
Dir e w:	W	Qtrqtr:	NENW
Sec:	22	Twp:	3S
Range:	64W	Meridian:	6
Latn:	39.780513		
Longn:	0		
Ground ele:	5518		
Utm x:	539504		
Utm y:	4403499		
Locqual:	Planned Footage	Field name:	MANILA

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Name 1: ROYAL DEVELOPMENT CORP
 Api seq nu: 06508
 Api county: 001
 Locationid: 375573
 Site id: COOG90000037706

8
East
1/2 - 1 Mile

OIL_GAS COOG90000037994

Link fld:	00108357	Attrib 1:	05-001-08357
Attrib 2:	PILAND RESOURCES		
Attrib 3:	15-3 PILAND		
Symbol:	LO_XX	Sdf key:	00108357&TYPE=WELL
Facility i:	202952		
Facility type:	WELL	Facility Status:	Producing
Operator n:	70350		
Well num:	15-3	Well name:	PILAND
Field code:	77635		
Dist n s:	0		
Dir n s:	Not Reported		
Dist e w:	0		
Dir e w:	Not Reported	Qtrqtr:	NWSE
Sec:	15	Twp:	3S
Range:	64W	Meridian:	6
Latn:	39.7875		
Longn:	0		
Ground ele:	5473		
Utm x:	539894		
Utm y:	4404276		
Locqual:	ACTUAL LatLong	Field name:	SONAR
Name 1:	PILAND RESOURCES		
Api seq nu:	08357		
Api county:	001		
Locationid:	320187		
Site id:	COOG90000037994		

9
WSW
1/2 - 1 Mile

OIL_GAS COOG90000037882

Link fld:	00106311	Attrib 1:	05-001-06311
Attrib 2:	ANSCHUTZ CORPORATION* THE		
Attrib 3:	1 STATE 93		
Symbol:	LO_XX	Sdf key:	00106311&TYPE=WELL
Facility i:	200908		
Facility type:	WELL	Facility Status:	Dry and abandoned
Operator n:	3100		
Well num:	1	Well name:	STATE 93
Field code:	99999		
Dist n s:	660		
Dir n s:	S		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Dist e w:	660	Qtrqtr:	SWSW
Dir e w:	W	Twp:	3S
Sec:	16	Meridian:	6
Range:	64W		
Latn:	39.784613		
Longn:	0		
Ground ele:	5444		
Utm x:	537495		
Utm y:	4403944		
Locqual:	Planned Footage	Field name:	WILDCAT
Name 1:	ANSCHUTZ CORPORATION* THE		
Api seq nu:	06311		
Api county:	001		
Locationid:	375448		
Site id:	COOG90000037882		

10
South
1/2 - 1 Mile

OIL_GAS COOG90000037586

Link fld:	00106493	Attrib 1:	05-001-06493
Attrib 2:	MARLIS PRODUCTION CO. INC.		
Attrib 3:	2 RUTH		
Symbol:	LO_XX	Sdf key:	00106493&TYPE=WELL
Facility i:	201090		
Facility type:	WELL	Facility Status:	Abandoned Location
Operator n:	100067		
Well num:	2	Well name:	RUTH
Field code:	52575		
Dist n s:	1980		
Dir n s:	N		
Dist e w:	660		
Dir e w:	E	Qtrqtr:	SENE
Sec:	21	Twp:	3S
Range:	64W	Meridian:	6
Latn:	39.777073		
Longn:	0		
Ground ele:	5507		
Utm x:	538699		
Utm y:	4403113		
Locqual:	Planned Footage	Field name:	MANILA
Name 1:	MARLIS PRODUCTION CO. INC.		
Api seq nu:	06493		
Api county:	001		
Locationid:	375561		
Site id:	COOG90000037586		

11
SSW
1/2 - 1 Mile

OIL_GAS COOG90000037591

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Link fld:	00106494	Attrib 1:	05-001-06494
Attrib 2:	RUTH* ULA PEARL		
Attrib 3:	3 RUTH		
Symbol:	LO_XX	Sdf key:	00106494&TYPE=WELL
Facility i:	201091		
Facility type:	WELL	Facility Status:	Plugged and Abandoned
Operator n:	90902		
Well num:	3	Well name:	RUTH
Field code:	52575		
Dist n s:	1980		
Dir n s:	N		
Dist e w:	1980		
Dir e w:	E	Qtrqtr:	SWNE
Sec:	21	Twp:	3S
Range:	64W	Meridian:	6
Latn:	39.777173		
Longn:	0		
Ground ele:	5524		
Utm x:	538297		
Utm y:	4403122		
Locqual:	Planned Footage	Field name:	MANILA
Name 1:	RUTH* ULA PEARL		
Api seq nu:	06494		
Api county:	001		
Locationid:	375562		
Site id:	COOG90000037591		

**12
SSE
1/2 - 1 Mile**

OIL_GAS COOG90000037575

Link fld:	00106509	Attrib 1:	05-001-06509
Attrib 2:	ROYAL DEVELOPMENT CORP		
Attrib 3:	2 TUPPS		
Symbol:	LO_XX	Sdf key:	00106509&TYPE=WELL
Facility i:	201106		
Facility type:	WELL	Facility Status:	Abandoned Location
Operator n:	100634		
Well num:	2	Well name:	TUPPS
Field code:	52575		
Dist n s:	1980		
Dir n s:	N		
Dist e w:	1980		
Dir e w:	W	Qtrqtr:	SENW
Sec:	22	Twp:	3S
Range:	64W	Meridian:	6
Latn:	39.776893		
Longn:	0		
Ground ele:	5508		
Utm x:	539504		
Utm y:	4403097		
Locqual:	Planned Footage	Field name:	MANILA

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Name 1:	ROYAL DEVELOPMENT CORP
Api seq nu:	06509
Api county:	001
Locationid:	375574
Site id:	COOG90000037575

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for ADAMS County: 1

- Note: Zone 1 indoor average level > 4 pCi/L.
- : Zone 2 indoor average level \geq 2 pCi/L and \leq 4 pCi/L.
- : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for ADAMS COUNTY, CO

Number of sites tested: 23

<u>Area</u>	<u>Average Activity</u>	<u>% <4 pCi/L</u>	<u>% 4-20 pCi/L</u>	<u>% >20 pCi/L</u>
Living Area - 1st Floor	1.786 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	6.196 pCi/L	65%	30%	4%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Riparian Vegetation Data

Source: Division of Wildlife

Telephone: 970-416-3360

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Colorado GIS Well Database

Source: Office of State Engineer, Division of Water Resources

Telephone: 303-866-3581

The GIS Well database includes all wells that the Division of Water Resources permits.

OTHER STATE DATABASE INFORMATION

Oil and Gas Well Locations

Source: Department of Natural Resources

Telephone: 303-894-2100

RADON

State Database: CO Radon

Source: Department of Public Health & Environment

Telephone: 303-692-3090

Radon Study in Colorado

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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