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October 2, 2014

Writer's Direct Access  
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U. S. Department of Transportation, Docket Operations  
West Building Ground Floor, Room w12-140  
1200 New Jersey Avenue, SE., Washington, DC 20590

**Re: 2012 FAA Reform Act Section 333 Exemption Request**

Dear Sir or Madam:

Attached please find Chevron USA, Inc.'s request for an exemption from the listed Federal Aviation Regulations to allow commercial operation of its Small Unmanned Aircraft Systems ("sUASs") for aerial imaging for safety and monitoring of controlled access oil and gas facilities. This exemption request is exclusively for the use of the UAS manufactured by Skycatch, Inc., a San Francisco based company.

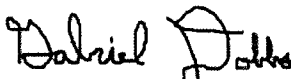
Also attached to this letter is the Skycatch UAS Flight Manual, which outlines the operating requirements, limitations, and technical specifications for the Skycatch system. Chevron has reviewed this Manual and has found it to be acceptable for sUAS operations on its secure project sites. Applicant submits this manual as a Confidential document under 14 CFR 11.35 (b) as the entire manual contains proprietary information that the applicant has not and will not share with others. The Manual contains operating conditions and procedures that are not available to the public and are protected from release under the Freedom of Information Act 5 USC 552 et. seq.

Thank you for your time and consideration, and please let me know if you have any questions.

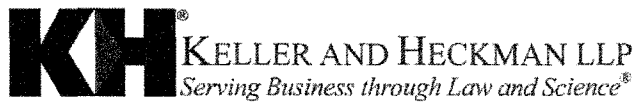
Sincerely,



Gregory Kunkle  
Keller and Heckman LLP  
Counsel for Chevron USA, Inc.



Gabriel Dobbs  
Skycatch, Inc.



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October 2, 2014

U. S. Department of Transportation  
Docket Management System  
1200 New Jersey Ave., SE  
Washington, DC 20590

Re: Exemption Request Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations from 14 C.F.R. 61.113 (a) & (b); 91.103(b); 91.119; 91.121; 91.151(a); 91.405 (a); 91.407(a) (1); 91.409 (a) (2); 91.417 (a) & (b).

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the "Reform Act") and 14 C.F.R. Part 11, Chevron USA Inc. ("Chevron")<sup>1</sup> hereby applies for an exemption from the Federal Aviation Regulations ("FARs") listed in Section I below to allow commercial operation of its Small Unmanned Aircraft Systems ("sUASs") for aerial imaging and safety and monitoring of controlled access oil and gas facilities,<sup>2</sup> so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333 of the Reform Act.

As detailed in this document and the attached Flight Manual, the requested exemption would permit the operation of sUAS under controlled conditions in airspace that is 1) limited, 2) predetermined, 3) controlled as to access, and 4) would provide safety enhancements to the already best practices safety protocols followed by Chevron at each one of its oil and gas facilities. Approval of this exemption would thereby enhance safety and fulfill the Secretary of Transportation's (the FAA Administrator's) responsibilities to "...establish requirements for the safe operation of such aircraft systems in the national airspace system." Section 333(c) of the Reform Act.

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<sup>1</sup> Chevron is a subsidiary of Chevron Corporation, which is one of the world's largest energy companies with oil and natural gas exploration, production, pipeline transportation, refining, and marketing activities worldwide.

<sup>2</sup> Such facilities might include oil and gas exploration and production fields, offshore platforms, refineries, etc., but would not include facilities open to the public.

The name and address of the applicant is:

Chevron USA Inc.  
Kenneth Lewis  
PH: 661-632-1324  
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Questions regarding this request should be forwarded to:

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## **I. REGULATIONS FROM WHICH THE EXEMPTION IS REQUESTED**

- 14 C.F.R. 61.113 (a) & (b)
- 14 C.F.R. 91.103
- 14 C.F. R. 91.119
- 14 C.F.R. 91.121
- 14 C.F.R. 91.151 (a)
- 14 C.F.R. 91.405 (a)
- 14 C.F.R. 91.407 (a) (1)
- 14 C.F.R. 91.409 (a) (2)
- 14 C.F.R. 91.417 (a) & (b)

## **II. STATUTORY AUTHORITY FOR EXEMPTIONS**

The Federal Aviation Act expressly grants the FAA authority to issue exemptions. This statutory authority includes exempting civil aircraft, as the term is defined under §40101 of the Act, including sUASs, from the requirement that all civil aircraft must have a current airworthiness certificate.

The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of this Title if the Administrator finds the exemption in the public interest.<sup>3</sup>

Section 333(b) of the Reform Act assists the Secretary in determining whether sUASs may operate in the National Airspace System ("NAS") without creating a hazard to the user, the public, or a threat to national security. In making this determination, the Secretary must consider:

- The sUAS's size, weight, speed, and operational capability;
- Whether the sUAS operates within the visual line of sight of the operator;

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<sup>3</sup> See 49 U.S.C. §44701(f) See also 49 USC §44711(a); 49 USC §44704; 14 CFR §91.203(a)(1).

- Whether the sUAS operates outside of highly populated areas and away from close proximity to airports.

If the Secretary determines that a sUAS “may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft in the national airspace system.”<sup>4</sup>

Chevron’s proposed sUASs are multi-rotor vehicles, weighing 10 or fewer lbs. including payload. They will operate under normal conditions at a speed of no more than 50 mph and have the capability to hover, and move in the vertical and horizontal plane simultaneously. They will operate only in line of sight and will operate only within the sterile area described in the Confidential Skycatch Flight Manual, attached as Exhibit 1 (hereinafter “the Manual”). Such operations will ensure that the sUASs will “not create a hazard to users of the national airspace system or the public.”<sup>5</sup>

Given the small size of the sUASs involved and the area within which they will operate, Chevron’s application falls squarely within the zone of safety (an equivalent level of safety) in which Congress envisioned that the FAA must, by exemption, allow commercial operations of sUASs to commence. Also due to the small size of the sUASs and the low altitudes and limited areas in which Chevron’s sUASs will operate, approval of the application presents no national security issue.

Given the clear direction in Section 333 of the Reform Act, the authority contained in the Federal Aviation Act, as amended; the strong equivalent level of safety surrounding the proposed operations, and the significant public benefit, including enhanced safety, the grant of the requested exemptions is in the public interest. Accordingly, Chevron respectfully requests that the FAA grant the requested exemption without delay.

### **III. PUBLIC INTEREST**

This exemption application is expressly submitted to fulfill Congress’ goal in passing Section 333(a) through (c) of the Reform Act. This law directs the Secretary of Transportation to consider whether certain unmanned aircraft systems may operate safely in the NAS before completion of the rulemaking required under Section 332 of the Reform Act. By granting an exemption the FAA will fulfill Congress’s intent of allowing UASs to operate with significant safety precautions in low risk environments.

The use of sUASs can significantly promote safe and effective oil and gas operations. For example, the use of sUASs can reduce the risk to workers while inspecting, surveying, or monitoring wells, pipelines, and other energy facilities. sUASs can inspect, photograph, and collect data on inaccessible areas that otherwise would require worker inspection, in addition to providing facility security, spill, and emergency response reconnaissance. sUASs can also provide high resolution aerial imagery, elevation measurement, mapping, and thermal imagery data. Reducing manned flight and human inspection of such sites through sUAS use for site imaging will reduce risk to workers and ground personnel and create an improved safety operating environment.

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<sup>4</sup> *Id.* §333(c).

<sup>5</sup> *Reform Act Section 333 (b).*

Additionally, sUASs could reduce the use of fixed-wing aircraft to monitor sites. The sUASs Chevron proposes to fly in this application weigh less than ten pounds, and carry no combustible material on board, as opposed to much larger conventionally powered aircraft that Chevron currently uses to monitor its facilities. Reducing the use of manned aircraft, or supplementing such flights through sUAS operations, presents the potential for a safety increase for Chevron's workers and the public.

Lastly, sUASs reduce the environmental impact by dramatically decreasing the energy used for aerial imaging and data collection over an oil and gas site. Operation of lightweight sUASs powered by rechargeable lithium ion batteries offers improved efficiencies as compared to the operation of other aircraft and vehicles that consume gasoline and present a significantly louder noise signature.

#### **IV. EQUIVALENT LEVEL OF SAFETY**

Chevron proposes that the exemption requested herein apply to civil aircraft that have the characteristics and that operate with the limitations listed herein. These limitations provide for at least an equivalent or even higher level of safety to operations under the current regulatory structure because the proposed operations represent a safety enhancement to the already safe protocols followed at oil and gas facilities and imaging and surveying operations conducted with other conventional aircraft.

Chevron will be bound by the following limitations when conducting its sUAS operations under this FAA issued exemption:

1. The sUAS will weigh less than 10 pounds.
2. Flights will be operated within visual line of sight of a pilot and/or observer.
3. Maximum total flight time for each operational flight will be 30 minutes. The UAS calculates battery reserve in real time, and will return to its ground station with at least 20% battery power reserve should that occur prior to the 30 minute limit.
4. Flights will be operated at an altitude of no more than 400 feet AGL.
5. Minimum crew for each operation will consist of the trained sUAS Pilot who will keep the sUAS within his visual line of sight at all times and one visual observer.
6. The sUAS Pilot will be trained in flight, operations, and safety procedures as detailed in the Flight Manual.
7. sUAS Pilot will be Pilot in Command (PIC).
8. The PIC will hold at least a private pilot certificate and at least a current third-class medical certificate.
9. The sUAS will only operate within a confined "Sterile Area" as defined in the Manual. The Manual also requires the establishment of a "Security Perimeter" for the flight operations area.
10. Notification of flight operations to personnel at the facility will be made through posted signs and onsite Job Safety Analysis meetings.
11. Notification of flight operations to the operator of Chevron's manned aerial patrol flights prior to flight commencement.
12. The UAS will not be operated at a distance from clouds less than 500' below or 2000' horizontal, or when visibility is less than 3 statute miles.
13. The operator will obtain a Certificate of Waiver or Authorization (COA) from the FAA's Air Traffic Organization (ATO) prior to conducting any operations.

14. Pilot will have been trained in operation of UASs generally and received up-to-date information on the particular sUAS to be operated as required in the Manual.
15. Operations will be limited to Chevron properties at which third party access is controlled. A buffer will be provided as described in the Manual.
16. If the sUAS loses communications or loses its GPS signal, it will have capability to return to a pre-determined location within the Security Perimeter and land.
17. The sUAS will have the capability to abort a flight in case of unpredicted obstacles or emergencies. The UAS will host an on-board parachute that can be deployed in the event of motor loss or emergency.
18. The radio frequency spectrum used for operation and control of the UAS will comply with the rules and regulations of the Federal Communications Commission (FCC).

## **V. DESCRIPTION OF SPECIFIC REGULATIONS**

### **A. 14 C.F.R. §61.113 (a) & (b): Private pilot privileges and limitations: Pilot in command**

Sections 61.113 (a) & (b) limit private pilots to non-commercial operations. Chevron proposes that its sUAS PIC will hold at least a private pilot certificate and at least a current third-class medical certificate. Because the sUAS will not carry a pilot or passengers, the proposed operations can achieve the equivalent level of safety of current operations by requiring the PIC operating the aircraft to have a private pilot's license rather than a commercial pilot's license to operate this sUAS. Unlike a conventional aircraft that carries the pilot and passengers, the sUAS is remotely controlled with no living thing on board. The areas of operation will be restricted to Chevron properties at which third party access is controlled, and all flights are planned and coordinated in advance as set forth in the Manual. The level of safety provided by the requirements included in the Manual exceeds that provided by a single individual holding a commercial pilot's certificate operating a conventional aircraft. The risks associated with the operation of the sUAS are so diminished from the level of risk associated with commercial operations contemplated by Part 61 when drafted, that allowing operations of the sUAS as requested with a private pilot as the PIC exceeds the present level of safety achieved by 14 C.F.R. §61.113 (a) & (b).

### **B. 14 C.F.R. §91.103: Preflight action**

This regulation requires each pilot in command take certain actions before flight to insure the safety of flight. An exemption is needed from this requirement as the PIC will take separate preflight actions, including checking for weather conditions, checking flight battery requirements, checking takeoff and landing distances, etc. These actions will provide an equivalent level of safety.

### **C. 14 C.F.R. §91.119: Minimum safe altitudes**

Section 91.119 establishes safe altitudes for operation of civil aircraft. Section 91.119 (d) allows helicopters to be operated at less than the minimums prescribed, provided the person operating the helicopter complies with any route or altitudes

prescribed for helicopters by the FAA. This exemption is for a multi-rotor craft that flies similarly to a helicopter, with vertical take-off and vertical landing, which will operate at altitudes up to 400' AGL, so an exemption may be needed to allow such operations. As described in the Manual, the sUAS will never operate at altitude higher than 400' AGL and will be limited to the area with the security perimeter, where buildings and people will not be exposed to operations without their notification as described herein.

The equivalent level of safety will be achieved given the size, weight, speed of the sUAS as well as the location where it is operated. Flights will over Chevron properties at which third party access is controlled. Because of the advance notice to onsite personnel as outlined in the Manual, all affected individuals will be aware of the planned flight operations. Compared to flight operations with aircraft or rotorcraft weighing far more than the maximum 10 lbs. proposed herein and flammable fuel, any risk associated with Chevron's operations is far less than those presently presented with conventional aircraft. In addition, the low-altitude operations of the sUAS will ensure separation between these sUAS operations and the operations of conventional aircraft that must comply with Section 91.119. Notification of flight operations will be provided to the operator of Chevron's manned aerial patrol flights, which have a low altitude waiver allowing for flight below 500' AGL.

#### **D. 14 C.F.R. §91.121: Altimeter settings**

This regulation requires each person operating an aircraft to maintain cruising altitude by reference to an altimeter that is set "...to the elevation of the departure airport or an appropriate altimeter setting available before departure." As the sUAS may not have a barometric altimeter, but instead a GPS altitude read out, an exemption may be needed. An equivalent level of safety will be achieved by the operator, pursuant to the Manual and Safety Check list, confirming the altitude of the launch site shown on the GPS altitude indicator before flight.

#### **E. 14 C.F.R. §91.151 (a): Fuel requirements for flight in VFR conditions**

Section 91.151 (a) outlines fuel requirements for beginning a flight in VFR conditions. Chevron's sUAS is limited to operations in sterile and controlled environments as outlined in the Manual, and has a limited range and flight time which require an exemption from 14 C.F.R. 91.151(a).

The battery powering the sUAS provides approximately 35 minutes of powered flight. To meet the 30 minute reserve requirement in 14 C.F.R. §91.151, sUAS flights would be limited to approximately 5 minutes in length. Given the limitations on the sUAS's proposed flight area and the location of its proposed operations within a predetermined area, a longer time frame for flight in daylight or night VFR conditions is reasonable.

Chevron believes that an exemption from 14 C.F.R. §91.151(a) falls within the

scope of prior exemptions.<sup>6</sup> Operating the sUAS, in a controlled area with less than 30 minutes of reserve fuel, does not engender the type of risks that Section 91.151(a) was intended to alleviate given the size and speed of the sUAS. Additionally, limiting sUAS flights to 5 minutes would greatly reduce the utility for which the exemption will be granted.

An equivalent level of safety can be achieved by limiting flights to 30 minutes, or enough battery reserve to ensure that the sUAS lands at the ground station with at least 20% of battery power (as determined by the onboard monitoring system and PIC), whichever happens first. Because of the limited operating area under which sUAS flights will be conducted, this restriction will be more than adequate to ensure return of the sUAS to its planned landing zone.

Similar exemptions have been granted to other operations, including Exemptions 2689F, 5745, 10673, and 10808.

**F. 14 C.F.R. §91.405 (a); 407 (a)(1); 409 (a)(2); 417 (a) & (b): Maintenance inspections**

These regulations require that an aircraft operator or owner “shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter...,” and others shall inspect or maintain the aircraft in compliance with Part 43.

Given that these section and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to Chevron. Maintenance will be accomplished by the operator pursuant to the flight manual and operating handbook as referenced in the Manual. An equivalent level of safety will be achieved because these sUASs are very limited in size and will carry a small payload and operate only in authorized areas for limited periods of time. If mechanical issues arise the sUAS can land immediately and will be operating from no higher than 400 feet AGL. As provided in the Manual, the operator will ensure that the sUAS is in working order prior to initiating flight, perform required maintenance, and keep a log of any maintenance performed. Moreover, the operator is the person most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety.

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Pursuant to 14 C.F.R. Part 11, the following summary is provided for publication in the Federal Register, should it be determined that publication is needed:

Applicant seeks an exemption from the following rules: 14 C.F.R. §§ 61.113( a) & (b); 91.103(b); 91.119; 91.121; 91.151(a); 91.405 (a); 91.407 (a) (1); 91.409 (a) (2); 91.409 (a) (2) and 91.417 (a) & (b) to operate commercially a small unmanned vehicle (10 lbs. or

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<sup>6</sup> See Exemption 10673 (allowing Lockheed Martin Corporation to operate without compliance with FAR 91.151 (a)).



less) for aerial imaging and monitoring of controlled access oil and gas facilities.

Approval of exemptions allowing commercial operations of sUASs to monitor oil and gas facilities will enhance safety by reducing risk. Conventional aerial monitoring by aircraft impacts the environment. In contrast, a sUAS weighing fewer than 10 lbs. and powered by batteries eliminates virtually all of that risk and environmental impact given the reduced mass and lack of combustible fuel carried on board. The sUAS will carry no passengers or crew and, therefore, will not expose them to the risks associated with manned aircraft flights. Although Chevron does not foresee replacing its manned flight operations with sUASs at this time, Chevron hopes, that overtime, sUASs may reduce or supplement such manned programs.

The operation of sUASs, weighing less than 10 lbs., conducted in the strict conditions outlined above, will provide an equivalent level of safety supporting the grant of the exemptions requested herein, including exempting the applicant from the requirements of Part 21 and allowing commercial operations. These lightweight aircraft operate at slow speeds, close to the ground, and in a sterile environment and, as a result, are safer than conventional operations conducted with fixed-wing aircraft operating in close proximity to the ground and people.

#### **Privacy**

All flights will occur over Chevron properties at which third party access is controlled, and signs will be posted notifying onsite personnel of the sUAS flyover.

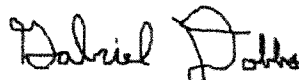
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Satisfaction of the criteria provided in Section 333 of the Reform Act of 2012--size, weight, speed, operating capabilities, proximity to airports and populated areas and operation within visual line of sight and national security – provide more than adequate justification for the grant of the requested exemptions allowing commercial operation of applicant's sUASs in the motion picture and television industry pursuant to the Manual appended hereto.

Sincerely,



Gregory Kunkle  
Keller and Heckman LLP  
Counsel for Chevron USA, Inc.



Gabriel Dobbs  
Skycatch, Inc.