

MOJAVE DESERT
AIR QUALITY MANAGEMENT DISTRICT

New Source Review Document – *Preliminary Decision*
FOP Minor Modification – *Preliminary Determination*

for
Modification to

Federal Operating Permit Number: 13300611

For: National Aeronautics & Space Administration

Facility: NASA GOLDSTONE DEEP SPACE
COMMUNICATIONS COMPLEX

Submittal Date to EPA/CARB review: April 19, 2013
EPA/CARB 45-day Commenting Period ends: June 3, 2013
Permit Issue date: On or about June 5, 2013.

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NSR Document – Preliminary Decision
FOP Mod – Preliminary Determination
NASA Goldstone Deep Space Communications Complex
April 15, 2013

A. Introduction

1. Application and Setting

NASA Goldstone Deep Space Communications Complex (Goldstone), Federal Operating Permit (FOP) number 13300611, located near Goldstone Lake in Fort Irwin, California is a deep space communications facility. Because of the critical nature of the mission and the remoteness of the facility, uninterrupted electric power is critical.

The Mojave Desert Air Quality Management District (MDAQMD or District) received an application for modification to Permit Unit E011623 requesting that this portable, propane-fired engine be changed from “emergency” status to “prime” on April 15, 2013 (please see Appendix A for submitted application).

Pursuant to District Rule 1301 – *New Source Review Definitions*, Goldstone is an existing Major Facility for CO, NO_x, PM₁₀, and VOC. The MDAQMD is classified as ‘attainment/unclassified’ by USEPA and CARB for CO and SO₂; therefore, pursuant to District Rule 1303 – *New Source Review Requirements*, the proposed equipment is subject to both the BACT and Offset requirements for the Nonattainment Air Pollutant/Precursors of NO_x and VOC (ozone Precursors), as well as PM₁₀. Subsequently, the MDAQMD is issuing this New Source Review Document with a preliminary decision on the application submitted by Goldstone pursuant to District Rule 1302 – *New Source Review Procedure*, section (D)(1). As required by District Rule 1302, this New Source Review Document will review the proposed equipment, evaluating worst-case or maximum air quality impacts and establishing control technology requirements and related air quality permit conditions. This document represents the preliminary, pre-construction compliance review of the proposed project to determine whether construction and operation of the proposed project will comply with all applicable MDAQMD, state and federal rules and regulations.

In addition, Goldstone is defined as a federal Major Facility pursuant to District Rule 1201 – *Federal Operating Permit Definitions*. The proposed modifications classifies as a Minor Modification to Goldstone’s Federal Operating Permit (FOP). Pursuant to District Rule 1205 – *Modifications of Federal Operating Permits*, section (B)(2), this document serves as the preliminary determination to issue Goldstone the modified FOP, inclusive of the proposed changes. This preliminary determination will be submitted to USEPA and CARB for review on April 19, 2013.

2. Description of Project

The applicant proposes to make the following modifications to the Permit Units and subsequent FOP as follows:

Table 2 – *Proposed Modifications*

**NSR Document – Preliminary Decision
FOP Mod – Preliminary Determination
NASA Goldstone Deep Space Communications Complex
April 15, 2012**

District Permit	Equipment Description	Proposed Modification/Application
E011623	Propane IC Engine, Emergency, Portable, Generator	Switch from “emergency” use to “prime” use. (E011623 to B011623)

Goldstone proposes to switch the use status from “emergency” to “prime” for the Propane IC Engine, Emergency, Portable, Generator (E011623 to B011623). This proposed application will not result in an emissions increase. The emission change calculations will be discussed in section (B)(1).

B. NSR Analysis

1. Criteria Emissions

District Rule 1304 – *Emissions Calculations*, provides the procedures and formulas to calculate emission increases and decreases for new or modified Facilities. Section (A)(1)(a)(iii), of this rule, states that District Rule 1304 shall determine the Potential to Emit of new or modified Facilities and Emission Unit(s). Pursuant to District Rule 1304, the emission change for a new or modified Facility or Emissions Unit(s) shall be calculated, in pounds per day, by subtracting Historic Actual Emission from Proposed Emissions (section (B)(1)(a)):

$$\text{Emissions Change} = (\text{Proposed Emissions}) - (\text{Historic Actual Emissions})$$

For a modified Facility, such as in the case of Goldstone, Proposed Emissions shall be equal to the Potential to Emit as defined in District Rule 1301– *NSR Definitions*, section (UU). Section (UU) of District Rule 1301 specifically states that Potential to Emit is the maximum capacity of a Facility or Emissions Unit(s) to emit any Regulated Air Pollutant under its physical and operational design. It also states that any physical or operational limitation on the capacity of the Facility or Emissions Unit(s) to emit an Air Pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processes, shall be treated as part of its design only if the limitation or the effect it would have on emissions is Federally Enforceable.

District Rule 1304, section (D)(2)(a)(iv), allows Historic Actual Emissions, in the case of a modified Facility, as in the case of Goldstone, to be equal to the Potential to Emit for that Emission Unit, as indicated by a Federally Enforceable Emissions Limit, if all the emissions from that Emissions Unit have been previously offset in a documented prior permitting action pursuant to Regulation XIII – NSR, or prior rules 203.1, 203.2, 213, 213.1, 213.2 and 213.3.

In the case of Goldstone, there is a documented NSR permitting action from April 20, 1990, in which the NOx emissions from the prime diesel-fired engines of the Echo and Mars sites were capped at 250 tons per year. This NOx emission limit was in response to documented NSR modeling which fulfilled and met the requirements of Regulation XIII. The District permits of these engines (the Echo and Mars Sites), and the corresponding FOP incorporated this 250 tons

NSR Document – Preliminary Decision
FOP Mod – Preliminary Determination
NASA Goldstone Deep Space Communications Complex
April 15, 2013

per year NOx limit as Federally Enforceable. While the specific language of this Federally Enforceable limit suggests it was specific to those generators of the Echo and Mars Sites, it is evident that permitting actions later on in Goldstone’s history assumed that the 250 tons per year of NOx was actually a facility-wide limit, not an equipment specific limit. This may have been assumed because the diesel-fired engines at Echo and Mars Sites represent the original permitting action for Goldstone, meaning that these engines represented the entirety of permitted equipment for Goldstone. To clear up any discrepancies in the permitting actions since then and address the current proposed propane generator, and the existing propane generator that was not picked up on the FOP, the District is now establishing Federally Enforceable Emission Limits for NOx, as well as the other Nonattainment Air Pollutants/Precursors, VOC, and PM10. The calculation of these Federally Enforceable Emission Limits will be based on the April 20, 1990 NSR modeling of the NOx limit (250 tpy). The 250 tons per year NOx limit will be used as a surrogate for the other pollutants of concern (VOC and PM10), with the assumption that the limitation of NOx in result to the 1990 NSR modeling, subsequently limited these other pollutants. This method takes the ratio of the Mars and Echo Sites, the original Facility PTE, to the NOx limit of 250, then applies this ratio to the emissions of these engines for the other pollutants to calculate the facility-wide limit, Federally Enforceable Emission Limits. These facility-wide, Federally Enforceable Emission Limits can be viewed in Table 4, below.

Table 3 – Facility-wide Emission Limits

Pollutant	Limit (pounds per year)	Limit (tons per year)
NOx	5000	250
VOC	48000	24
PM10	36000	18

Using the emission change calculations required by District Rule 1304, as described above, the emission change for all past and future modifications to Goldstone will be as follows:

Table 4 – Emission Change Calculations (pounds per day)

Pollutant	Proposed Emissions	Historic Actual Emissions	Emissions Change*
NOx	5000	5000	0
VOC	48000	48000	0
PM10	36000	36000	0

*Emissions Change = (Proposed Emissions) – (Historic Actual Emissions) pursuant to District Rule 1304, section (B)(1)(a).

Goldstone’s Proposed Emissions shall be equal to the Potential to Emit (as defined in District Rule 1301, section (UU)), which states that a Potential to Emit is equal to a Federally Enforceable operational limitation, these Federally Enforceable Emission Limits are defined in Table 4.

Goldstone’s Historic Actual Emissions are also equal to the Potential to Emit for that Emission Unit, pursuant to District Rule 1304, section (D)(2)(a)(iv), as these Potential to Emit values are Federally Enforceable Emission Limits that have been previously fulfilled by NSR in April of

1990, and found to meet the NSR requirements of XIII, the Federally Enforceable Emission Limits are defined in Table 4, were established by using the 1990 NSR modeling of the NO_x limit (250 tpy) as a surrogate for the other pollutants of concern (VOC and PM₁₀), with the assumption that the limitation of NO_x, subsequently limits these other pollutants.

2. Control Technology Evaluation

Best Available Control Technology (BACT) is required for a each new or Modified Permit Unit at a Modified Facility that emits, or has the Potential to Emit, twenty-five (25) tons per year or more of any Nonattainment Air Pollutant or its Precursors (District Rule 1303(A)(3)). Goldstone has a facility PTE in excess of twenty –five (25) tons per year for the Nonattainment Air Pollutant and Precursors of NO_x, VOC, and, PM₁₀; therefore, the proposed application for modifying the Propane IC Engine, Emergency, Portable, Generator (E011623) shall be equipped with BACT pursuant to District Rule 1303.

The District has determined that BACT for a portable, prime, propane-fired, internal combustion engine is meeting the emission standards for new nonroad spark-ignition engines for the same model year and maximum engine power for all pollutants.

Goldstone proposes that BACT will be achieved by installing an engine which has been issued a USEPA Certificate of Conformity for achieving the emission standards for new nonroad spark-ignition engines for the same model year and maximum engine power for all pollutants.

3. Alternative Siting

Pursuant to the requirements in District Rule 1302 B(1)(a)(iii), an analysis of Alternative Siting is not required as the proposed equipment does not qualify as an application for a new Major Facility, nor is it a Major Modification.

4. Class I Area Visibility Protection

Pursuant to the requirements in District Rule 1302 B(1)(a)(v), an analysis of any anticipated impacts on visibility is not required as the proposed equipment does not qualify as an application for a new Major Facility, nor is it a Major Modification.

5. Air Quality Impact Analysis

District Rule 1302, section (C)(2)(b) requires that any new or Modified Facility located in an area classified by USEPA as attainment or unclassifiable shall determine if the Facility will cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS). The proposed modification, discussed herein, do not cause an increase in emissions, and subsequently, will not contribute to a violation of the NAAQS.

6. Toxic Impact Assessment

a. District Rule 1320:

Pursuant to District Rule 1320 – *New Source Review for Toxic Air Contaminants*, Goldstone is subject to both State and Federal Toxic New Source Review, as Goldstone is a Modified Facility (or Emissions Units) which has the potential to emit a Toxic Air Contaminant, as well contains Emissions Units which are subject to an Airborne Toxic Control Measure (State T-NSR), and Goldstone also has the potential to emit 10 tons per year of any single Hazardous Air Pollutant (Federal T-NSR). Pursuant to the requirements of District Rule 1320, an applicability analysis of state and federal air toxic regulations was conducted for the proposed equipment (State T-NSR and Federal T-NSR, respectively). The State T-NSR and Federal T-NSR analyses are described below:

1. State T-NSR:

District Rule 1301 defines Emissions Unit as any article, machine, equipment, other contrivance or combination thereof which emits or has the Potential to Emit any Regulated Air Pollutant. The Goldstone represents Emissions Units which consist of both stationary and portable, diesel-fired, internal combustion engines. Stationary, diesel-fired, internal combustion engines are subject to the state's *Airborne Toxic Control Measure for Stationary Compression Ignition Engines* (Stationary ATCM) [Title 17 CCR 93115]. Portable, diesel-fired, internal combustion engines are subject to the state's *Airborne Toxic Control Measure for Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater* (Portable ATCM) [Title 17 CCR 93116]. Section (E)(1)(b) of District Rule 1320 requires that if any ATCM applies to the proposed equipment, the requirements of that ATCM shall be added to the District permit. All affected Emission Units of this modified facility have been updated to correctly reflect the requirements of either the Stationary or Portable ATCM, as applicable. These changes to the District permit language can be seen in section (B)(10), below.

Pursuant to District Rule 1320, section (E)(2), State T-NSR also requires an Emission Unit Prioritization Score. In this case Emission Unit defines the Modified Facility of Goldstone inclusive the application for a new Propane IC Engine, Emergency, Portable, Generator (E011623). To fulfill this requirement, an Emission Unit Prioritization Score was calculated totaling carcinogenic effects, non-carcinogenic acute effects, and non-carcinogenic chronic effects for the Modified Facility (Emissions Units). The Emission Unit Prioritization Score was calculated using HARP software, which is consistent with the *CAPCOA Facility Prioritization Guidelines*, and is based on the most conservative receptor selection. The closest receptor to the proposed equipment location is the residential area of the Fort Irwin National Training Center, located approximately 7,348 meters southeast of the Goldstone Facility entrance (please refer to Appendix B for the Emission Unit Prioritization and corresponding HARP data). Please note that the actual location of the emitting equipment is located even further from any receptors. The toxic emissions data was entered into HARP as two devices. The first device represents all emissions for diesel-fired equipment, and is based on diesel particulate as the toxic pollutant driver. The second device represents the two propane-fired equipment units, and uses formaldehyde as the toxic pollutant driver. The toxic emissions for all equipment were based on

the operational limits of each piece of equipment. Based on these operational limitations, the diesel particulate emissions for Device 1 (all diesel-fired equipment) are 563 pounds per year and the formaldehyde emissions for Device 2 (all propane-fired equipment) are 6×10^{-06} . As shown in Table 5, the total Prioritization Scores for the Modified Facility is less than one (1), and therefore, categorizes Goldstone as ‘Low Priority’. Pursuant to District Rule 1320, section (E)(2)(b), no further State T-NSR action is required.

<i>Table 5 – Modified Facility Prioritization Score</i>				
Receptor Distance (in meters)	Receptor Type	Toxic Effect	Total Prioritization Score	Prioritization Category (Low, Intermediate, or High)
7,348	Resident	Carcinogenic	0.284	Low
		Non-carcinogenic Acute	0.000	Low
		Non-carcinogenic Chronic	0.002	Low

2. Federal T-NSR:

Pursuant to section (F)(1) of District Rule 1320, the Modified Facility/Emissions Units were analyzed to determine if any current, enforceable Maximum Achievable Control Technology (MACT) standards apply. This analysis yielded three applicable MACT standards: (1) 40 CFR 63, Subpart ZZZZ – *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating internal Combustion Engines* (NESHAP); (2) 40 CFR 60, Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* (CI NSPS); and, (3) 40 CFR 60, Subpart JJJJ – *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines* (SI NSPS). District Rule 1320, section (F)(1)(b), requires that if any MACT applies to the Emissions Units, the requirements of that MACT shall be added to the District permit. All affected Emissions Units of this Modified Facility have been updated to correctly reflect the requirements of the applicable MACT, CI NSPS, or SI NSPS. These changes to the District permit language can be seen in section (B)(10), below.

b. District Rule 1520:

District Rule 1520 – *Control of Toxic Air Contaminants from Existing Sources* applies to Goldstone, as they are an existing facility that has a facility PTE greater than ten (10) tons per year for VOC, PM, and NO_x, as well as a PTE to emit a TAC (Section (B)(1)(a) and (c)). Goldstone’s most recent (2011 emission year) Comprehensive Emission Inventory Report (CEIR) was incomplete; therefore, their Potential to Emit for currently permitted equipment was utilized in lieu of the CEIR to fulfill the requirements of section (D)(1)(b)(i) of District Rule 1520. Therefore, the Toxic ‘Hot Spots’ Program Analysis pursuant to section (E) of District Rule 1520, is synonymous with the Prioritization Scoring discussed above, as required by District Rule 1320. The Modified Facility Prioritization Scores are represented in Table 5,

above. As illustrated in Table 5, all three Modified Facility Prioritization Scores for Goldstone are less than one (1); therefore, categorizes Goldstone as 'Low Priority'. Based on the requirements of District Rule 1520, section (E)(1)(b), no further analysis is required.

7. Rules and Regulations Applicable to the Proposed Project

District Rules

Rule 201/203 – *Permits to Construct/Permit to Operate*. Any equipment which may cause the issuance of air contaminants must obtain authorization for such construction from the Air Pollution Control Officer. Goldstone is in compliance with this rule as they appropriately applied for a District permit for all new equipment and maintains District permits for all residing equipment.

Rule 204 – *Permit Conditions*. To assure compliance with all applicable regulations, the Air Pollution Control Officer (Executive Director) may impose written conditions on any permit. The District permit conditions listed in section (B)(10) are written to ensure Goldstone complies with all applicable regulations.

Rule 206 – *Posting of Permit to Operate*. Equipment shall not operate unless the entire permit is affixed upon the equipment or kept at a location for which it is issued and will be made available to the District upon request.

Rule 207 – *Altering or Falsifying of Permit*. A person shall not willfully deface, alter, forge, or falsify any issued permit.

Rule 209 – *Transfer and Voiding of Permits*. Goldstone shall not transfer, whether by operation of law or otherwise, either from one location to another, from one piece of equipment to another, or from one person to another. When equipment which has been granted a permit is altered, changes location, or no longer will be operated, the permit shall become void.

Rule 210 – *Applications*. Goldstone provided all the required information to correctly address the proposed equipment pursuant to this rule, although there were several instances in which additional information were required, in which the thirty (30) day clock was restarted.

Rule 212 – *Standards for Approving Permits*. This rule establishes baseline criteria for approving permits by the AVAQMD for certain projects. In accordance with these criteria, the proposed modifications and application does not cause issuance of air contaminants in violation of Sections 41700 or 41701 of the State Health and Safety code.

Rule 221 – *Federal Operating Permit Requirement*. Goldstone is in compliance with this rule, as they currently hold and maintain a Federal Operating Permit. While their actual emissions are expected to be vastly below the applicable thresholds of Regulation XII, Goldstone requests to

keep their Federal Operating Permit, and has not volunteered to the emission limitations of Section (B) of District Rule 221.

Rule 301 – *Permit Fees*. The proposed equipment (E011623) will increase Goldstone’s annual permit fees by the amount described in section (E)(7)(g)(i).

Rule 401 – *Visible Emissions*. This rule limits visible emissions opacity to less than 20 percent (or Ringlemann No. 1). In normal operating mode, visible emissions are not expected to exceed 20 percent opacity.

Rule 402 – *Nuisance*. This rule prohibits facility emissions that cause a public nuisance. The proposed modifications and associated equipment is required by permit condition to employ good engineering and operational principles in order to minimize emissions and the possibility of a nuisance.

Rule 408 – *Circumvention*. This rule prohibits hidden or secondary rule violations. The proposed modifications as described is not expected to violate Rule 408.

Rule 430 – *Breakdown Provisions*. Any Breakdown which results in a violation to any rule or regulation as defined by Rule 430 shall be properly addressed pursuant to this rule.

Rule 900 – Standards of Performance for New Stationary Sources (NSPS). Rule 900 adopts all applicable provisions regarding standards of performance for new stationary sources as set forth in 40 CFR 60. Goldstone is subject to 40 CFR 60, Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR 60, Subpart JJJJ – *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*; therefore, the associated equipment of this modified Facility is expected to comply with all applicable provisions of these NSPS. Goldstone will comply with Rule 900 and subsequently all applicable NSPS by complying with the permit conditions specified below in section (B)(10).

Regulation X – *National Emission Standards for Hazardous Air Pollutants*. Pursuant to Regulation X, Goldstone is required to comply with all applicable ATCMs, which, in the case of this Modified Facility, is Title 17 CCR 93115 – *Airborne Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM)* and Title 17 CCR 93116 – *Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater*. Goldstone will comply with the requirements of these ATCMs by complying with the updated permit conditions specified in section (B)(10), below.

Regulation XII – *Title V Permits*

This regulation contains requirements for sources which must have a FOP. Goldstone currently has a FOP and is expected to comply with all applicable rules and regulations.

Rule 1201 – *Federal Operating Permit Definitions*. Goldstone is defined as a federal Major Facility pursuant to this rule.

Rule 1203 – *Federal Operating Permits*. This document represents the preliminary determination for the proposed modifications to Goldstone’s FOP. The revised FOP and Statement of Legal and Factual Basis will also be included with this submission as required by section (B)(1)(a). This proposed Significant Modification will also be properly noticed pursuant to District Rule 1207, as required.

Rule 1205 – *Modifications of Federal Operating Permits*. The proposed equipment classifies as a Significant Modification to Goldstone’s Federal Operating Permit (FOP), and subsequently, this significant permit modification is issued in accordance with the provisions of District Rule 1203.

Rule 1208 – *Certification*. Goldstone included a Certification of Responsible Official as required with the submitted application for the proposed equipment.

Rule 1207 – *Notice and Comment*.

1211 – *Greenhouse Gas Provisions of Federal Operating Permits*. Goldstone is not a Major GHG Facility pursuant to Rule 3011. LM’s FOP will be updated to include all the requirements of this rule as a part of this modification.

Regulation XIII – *New Source Review*

Rule 1302 – *Procedure*. This rule applies to all new or Modified Facilities and requires certain requirements to be fulfilled when submitting an application. All applicable requirements of this rule are discussed in this NSR document as part of the Analysis procedure. Certification of compliance with the Federal Clean Air Act, applicable implementation plans, and all applicable District rules and regulations have been addressed. The Authority to Construct (ATC) application package for the proposed equipment includes sufficient documentation to comply with Rule 1302(D)(5)(b)(ii). Permit conditions for the proposed project will require compliance with Rule 1302(D)(5)(b)(iii).

Rule 1303 – *Requirements*. This rule requires BACT and offsets for selected facility modifications. Equipment installed shall meet BACT and prior to the commencement of construction the proponent shall have obtained sufficient offsets to comply with Rule 1303(B)(1). Goldstone will comply with the BACT requirements of District Rule 1303 by installing a new propane generator with an engine that has been issued a USEPA Certificate of Conformity for achieving the emission standards for new nonroad spark-ignition engines for the same model year and maximum engine power for all pollutants. Goldstone is not applicable to the requirements of offsets, as the modifications of this facility do not generate an emissions increase.

Rule 1304 – *Emissions Calculations*. The Proposed Emissions from the proposed modifications were calculated pursuant to section (B)(1)(a).

Rule 1320 – *New Source Review for Toxic Air Contaminants*. Pursuant to the requirements of District Rule 1302, an applicability analysis of state and federal air toxic regulations was conducted for the proposed modifications (State T-NSR and Federal T-NSR, respectively) and is discussed in further detail in section (B)(6), above.

Rule 1520 – *Control of Toxic Air Contaminants from Existing Sources*. The proposed project is subject to Rule 1520, as Goldstone has a facility PTE greater than ten (10) tons per year for VOC, PM, and NO_x, as well as a PTE to emit a TAC (Section (B)(1)(a) and (c)). A Toxic ‘Hot Spots’ Program Analysis was conducted pursuant to section (E) of District Rule 1520. Facility Prioritization Scores were calculated pursuant to this rule and the results of the analysis is discussed in further detail in section (B)(6), above.

Regulation XVII – Prevention of Significant Deterioration

Please take notice that this regulation is not currently used within the MDAQMD because the USEPA has not delegated authority for the PSD Program to the MDAQMD at this time.

State Regulations

17 CCR 93115 – *Airborne Toxic Control Measure for Stationary Compression Ignition Engines* (Stationary ATCM). The proposed Modified Facility will comply with the requirements of the Stationary ATCM by complying with the updated permit conditions as described in section (B)(10). All stationary, diesel-fired, compression ignition engines permits have been updated to reflect the requirements of the Stationary ATCM as applicable. Operating requirements that are prompted from this regulation are not federally-enforceable and are designated as District and State Applicable only in the Federal Operating permit. The specific equipment that is applicable to this regulation is as follows:

District Permit	Permit Status	Equipment Description	Fuel Type	Use
E000272	PTO	DIESEL IC ENGINE (UNIT #2C) @ MARS SITE	Diesel	Emergency
E000273	PTO	DIESEL IC ENGINE (UNIT #1C) @ MARS SITE	Diesel	Emergency
E000274	PTO	DIESEL IC ENGINE (UNIT #2B) @ MARS SITE	Diesel	Emergency
E000275	PTO	DIESEL IC ENGINE (UNIT #3B) @ MARS SITE	Diesel	Emergency
E000276	PTO	DIESEL IC ENGINE (UNIT #1B) @ MARS SITE	Diesel	Emergency
E000277	PTO	DIESEL IC ENGINE (UNIT #4B) @ MARS SITE	Diesel	Emergency
E000278	PTO	DIESEL IC ENGINE (UNIT #4A) @ MARS SITE	Diesel	Emergency
E000279	PTO	DIESEL IC ENGINE (UNIT #3A) @ MARS SITE	Diesel	Emergency
E000280	PTO	DIESEL IC ENGINE (UNIT #1A) @ MARS SITE	Diesel	Emergency
E000281	PTO	DIESEL IC ENGINE (UNIT #2A) @ MARS SITE	Diesel	Emergency
E003381	PTO	DIESEL IC ENGINE, EMERGENCY FIRE PUMP (APOLLO SITE)	Diesel	Emergency
E003382	PTO	DIESEL IC ENGINE, EMERGENCY GENERATOR @ ECHO SITE	Diesel	Emergency
E005133	PTO	DIESEL IC ENGINE, EMERGENCY GENERATOR @ APOLLO SITE	Diesel	Emergency
E009239	PTO	DIESEL IC ENGINE, EMERGENCY FIRE PUMP (VENUS SITE)	Diesel	Emergency
E009240	PTO	DIESEL IC ENGINE, EMERGENCY FIRE PUMP (ECHO SITE)	Diesel	Emergency
E009241	PTO	DIESEL IC ENGINE, EMERGENCY FIRE PUMP (MARS SITE)	Diesel	Emergency

17 CCR 93116 – *Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater* (Portable ATCM). The proposed Modified Facility will comply with the requirements of the Portable ATCM by complying with the updated permit conditions as described in section (B)(10). All portable, diesel-fired, compression ignition engines permits have been updated to reflect the requirements of the Portable ATCM as applicable. Operating requirements that are prompted from this regulation are not federally-enforceable and are designated as District and State Applicable only in the

Federal Operating permit. The specific equipment that is applicable to this regulation is as follows:

District Permit	Permit Status	Equipment Description	Fuel Type	Use
B009337	PTO	DIESEL IC ENGINE, PORTABLE, LOW-USE, AIR COMPRESSOR	Diesel	Prime
B009338	PTO	DIESEL IC ENGINE, PORTABLE, LOW-USE, AIR COMPRESSOR	Diesel	Prime
B009339	PTO	DIESEL IC ENGINE, PORTABLE, LOW-USE, WELDER	Diesel	Prime
B009340	PTO	DIESEL IC ENGINE, PORTABLE, LOW-USE, WELDER	Diesel	Prime
E004635	PTO	DIESEL IC ENGINE, PORTABLE, EMERGENCY GENERATOR (ECHO SITE)	Diesel	Emergency
E007893	PTO	DIESEL IC ENGINE, PORTABLE, EMERGENCY GENERATOR (ECHO SITE)	Diesel	Emergency

Federal Regulations

40 CFR 61, Subpart M – *National Emission Standard for Asbestos*

This facility on an as needed basis is subject to Section 61.145 through 61.147 - standards for the demolition and renovation of asbestos. Historically, the facility has been in compliance with the requirements of these standards. Appropriate conditions are included on Goldstone’s Federal Operating Permit in section (II)(C) to ensure compliance with these requirements.

40 CFR 63, Subpart ZZZZ – *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating internal Combustion Engines (NESHAP)*. This regulation is applicable to existing, new and reconstructed stationary RICE at major and area sources of hazardous air pollutants (HAP) emissions. Goldstone operates stationary emergency-use RICE, only; all other engines are portable. All Goldstone’s stationary emergency-use RICE are deemed “existing” as they all commenced construction prior to June 2006. Goldstone is an area source of HAP emissions. Because these engines are considered existing engines they are not subject to the NSPS requirements for stationary RICE in 40 CFR 60 Subpart IIII or Subpart JJJJ.

Goldstone will comply with the NESHAP by complying with the updated permit conditions described in section(B)(10). The specific equipment that is applicable to this regulation is as follows:

District Permit	Permit Status	Equipment Description	Fuel Type	Use
E000272	PTO	DIESEL IC ENGINE (UNIT #2C) @ MARS SITE	Diesel	Emergency
E000273	PTO	DIESEL IC ENGINE (UNIT #1C) @ MARS SITE	Diesel	Emergency
E000274	PTO	DIESEL IC ENGINE (UNIT #2B) @ MARS SITE	Diesel	Emergency
E000275	PTO	DIESEL IC ENGINE (UNIT #3B) @ MARS SITE	Diesel	Emergency
E000276	PTO	DIESEL IC ENGINE (UNIT #1B) @ MARS SITE	Diesel	Emergency
E000277	PTO	DIESEL IC ENGINE (UNIT #4B) @ MARS SITE	Diesel	Emergency
E000278	PTO	DIESEL IC ENGINE (UNIT #4A) @ MARS SITE	Diesel	Emergency
E000279	PTO	DIESEL IC ENGINE (UNIT #3A) @ MARS SITE	Diesel	Emergency
E000280	PTO	DIESEL IC ENGINE (UNIT #1A) @ MARS SITE	Diesel	Emergency
E000281	PTO	DIESEL IC ENGINE (UNIT #2A) @ MARS SITE	Diesel	Emergency
E003381	PTO	DIESEL IC ENGINE, EMERGENCY FIRE PUMP (APOLLO SITE)	Diesel	Emergency
E003382	PTO	DIESEL IC ENGINE, EMERGENCY GENERATOR @ ECHO SITE	Diesel	Emergency
E005133	PTO	DIESEL IC ENGINE, EMERGENCY GENERATOR @ APOLLO SITE	Diesel	Emergency
E009239	PTO	DIESEL IC ENGINE, EMERGENCY FIRE PUMP (VENUS SITE)	Diesel	Emergency
E009240	PTO	DIESEL IC ENGINE, EMERGENCY FIRE PUMP (ECHO SITE)	Diesel	Emergency
E009241	PTO	DIESEL IC ENGINE, EMERGENCY FIRE PUMP (MARS SITE)	Diesel	Emergency

40 CFR Part 63, Subpart CCCCCC – *National Emission Standards for Hazardous Air Pollutants for Gasoline Dispensing Facilities* (6C). This subpart establishes national emission limitations and management practices for hazardous air pollutants (HAP) emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF). This subpart also establishes requirements to demonstrate compliance with the emission limitations and management practices. Goldstone operates an underground non-retail gasoline tank, and this equipment is subject to 6C; however, the monthly gasoline throughput of this GDF is less than 10,000 gallons;

NSR Document – Preliminary Decision
FOP Mod – Preliminary Determination
NASA Goldstone Deep Space Communications Complex
April 15, 2012

therefore, only the requirements of 40 CFR 63.11116 applies. Goldstone will comply with 6C by complying with the requirements of 63.11116 as required by a facility-wide requirement in their Federal Operating Permit in section (II)(A)(34). The specific equipment that is applicable to this regulation is as follows:

District Permit	Permit Status	Equipment Description
N001477	PTO	GASOLINE DISPENSING FACILITY (NON-RETAIL) ECHO SITE

40 CFR Part 82 – *Protection of Stratospheric Ozone*

This facility is in compliance with the requirements of this part. Any servicing of air conditioners is performed by a qualified contracting company. An appropriate condition will be included on the permit to ensure continued compliance with these requirements.

8. Rules and Regulations Not-Applicable to the Proposed Project

District Rules

Rule 1160 – *Internal Combustion Engines*. Internal combustion engines greater than 500 HP and located in federal ozone nonattainment areas are required to comply with this rule. The Goldstone facility is located in an ozone attainment area; therefore, this rule is not applicable to their facility.

Federal Regulations

40 CFR 60, Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI NSPS)*. Goldstone operates stationary emergency-use RICE, only; all other engines are portable. All Goldstone’s stationary emergency-use RICE are deemed “existing” as they all commenced construction prior to June 2006; therefore, only 40 CFR 63, Subpart ZZZZ applies.

40 CFR 60, Subpart JJJJ – *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI NSPS)*. Goldstone operates stationary emergency-use RICE, only; all other engines are portable. All Goldstone’s stationary emergency-use RICE are deemed “existing” as they all commenced construction prior to June 2006; therefore, only 40 CFR 63, Subpart ZZZZ applies.

9. Conclusion

The District has reviewed the proposed modifications and application for Goldstone and conducted a succinct written analysis as required by District Rule 1302, section (D)(1)(b) and District Rule 1203, section (B)(1)(a). The District has determined that the proposed

modifications and application are in compliance with all applicable District, state, and federal rules and regulations as proposed and when operated in terms of the permit conditions given below, and the attached revised FOP. This NSR Document, inclusive of the preliminary decision (pursuant to District Rule 1303) and the preliminary determination (pursuant to District Rule 1203) was released for public comment and publicly noticed pursuant to District Rule 1302 and 1207 (please see Appendix C).

10. Permit Conditions

The following permit conditions will be placed on the Authority to Construct District permit. These conditions will be updated in the modified FOP under section (III)(E).

CONDITIONS APPLICABLE TO THE FOLLOWING PROPANE IC ENGINES, PORTABLE, PRIME GENERATOR:

B011623: PROPANE IC ENGINE, EMERGENCY, PORTABLE GENERATOR consisting of:

Year of Manufacture 2010, USEPA Family Name BPSIB5.702ED, stack height 2', stack diameter 2", exhaust flow rate of 735 cubic feet per minute at 677 degrees Fahrenheit. One General Motors, Propane fired internal combustion engine Model No. 8.1 and Serial No. 23472, producing 127 bhp with 8 cylinders at 1800 rpm while consuming a maximum of 7 gal/hr. This equipment powers a Kohler Generator Model No. 100 REZG and Serial No. 2335656, rated at 97 kW(e).

1. This equipment shall be installed, operated and maintained in strict accord with those recommendations of the manufacturer/supplier and/or sound engineering principles in a manner consistent with good air pollution control practice for minimizing emissions. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.
[District Rule 1302 (C)(2)(a)]
2. This engine cannot remain at a location for more than twelve (12) consecutive months. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period [40 CFR 1068.30, "nonroad engine" (2)(iii)].

If the owner/operator intends to utilize this engine as a stationary engine, a permit modification must be submitted to the District prior to stationary operation, and the engine is subject to all applicable stationary engine regulations.

[District Rule 1302 (C)(2)(a)]

**NSR Document – Preliminary Decision
FOP Mod – Preliminary Determination
NASA Goldstone Deep Space Communications Complex
April 15, 2012**

3. This unit shall only be fired on Propane or LPG.
[District Rule 431]
4. Facility-wide emissions shall not exceed 250 tons per year of NO_x, 24 tons per year of VOC, and 18 tons per year of PM₁₀, as a running total for the preceding 364 day period plus the current day's operation. For emergency engines, only emissions generated during testing and maintenance, shall apply toward the facility-wide emission limits. Facility-wide emissions shall be monitored on an hourly, daily, monthly, and a running year (the last 365 days) basis. These records shall be maintained as current, for a minimum of five (5) years, and made available upon District, State, and/or Federal request.
[District Rule 1302 (C)(2)(a)]
5. A non-resettable four-digit (9,999) hour timer shall be installed and maintained on this unit to indicate elapsed engine operating time.
[District Rule 1302 (C)(2)(a)]
6. The owner/operator shall maintain an operations log for this equipment, current and on-site (or at a central location), for a minimum of five (5) years, and this log shall be provided to District, State and/or Federal personnel, upon request. The log shall include, at a minimum, the information specified below:
 - a. Date and location of each use; and,
 - b. Duration of each use (in hours) and the type of use (regular prime use, emergency, testing & maintenance, etc.); and,
 - c. Calendar year operation in terms of fuel consumption (in gallons or equivalent) and total hours.[Rule 1203 (D)(1)(d)(ii)]
7. The facility must submit accurate emissions inventory data to the District, in a format approved by the District, upon District request.

C. Title V Permit/FOP, Significant Permit Modification

1. Changes to FOP

Please refer to page 2 of the Federal Operating Permit for a summary of the changes made.

2. CAM Analysis

The Compliance Assurance Monitoring (CAM) rule (40 CFR 64) applies to each Pollutant Specific Emissions Unit (PSEU) when it is located at major source that is required to obtain Title V, Part 70 or 71 permit and it meets all of the following criteria. "PSEU" means an emissions unit considered separately with respect to each regulated air pollutant.

NSR Document – Preliminary Decision
FOP Mod – Preliminary Determination
NASA Goldstone Deep Space Communications Complex
April 15, 2013

The PSEU must:

- a. Be subject to an emission limitation or standard; AND,
- b. Use a control device to achieve compliance; AND,
- c. Have the **potential pre-control** emissions that exceed or are equivalent to the major source threshold.

The Goldstone facility does not satisfy the criteria specified in either “a”, “b”, and “c” above; therefore, they are not subject to CAM.

The information provided in the table below was developed pursuant to 40 CFR 64 to determine source emissions, rule applicability and identification of facilities subject to CAM.

District Permit	Pollutant subject to Limitation or Standard	Uncontrolled PTE (tpy)	Uncontrolled PTE greater than 100% of Major Source Threshold	Unit uses a control device	Exempt from CAM	CAM Plan Required
B009337, B009338, B009339, B009340, B010789, B011623, E000272, E000273, E000274, E000275, E000276, E000277, E000278, E000279, E000280, E000281, E003381, E003382, E004635, E005133, E007893, E009239, E009240, E009241, N001477, and T003003	NO _x	250	YES	NO	YES	NO
	VOC	24	NO	NO	YES	NO
	PM10	18	NO	NO	YES	NO

D. Public Comment and Notifications

1. Public Comment

This permitting action is not subject District Rule 1303(B); therefore, public review is not required.

2. Notifications

The preliminary determination was submitted to USEPA and CARB pursuant District Rule 1205 for a forty-five (45) day review period. The final modified FOP shall be issued on or about June 5, 2013.

Director, Office of Air Division
United States EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Chief, Stationary Source Division
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812

Mark Solheid
Sr. ESH Analyst
ITT EXELIS
93 Goldstone Road
Fort Irwin, CA 932310

Appendix A

Goldstone Application

Mojave Desert Air Quality Management District

RECEIVED
MDAQMD

TITLE V – PERMIT AMENDMENT / MODIFICATION

13 APR 15 AM 6:21

1. PERMIT ACTION (Check appropriate box)

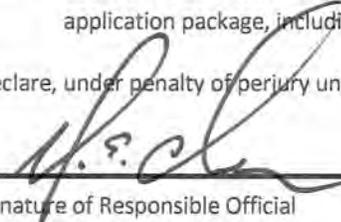
- ADMINISTRATIVE AMENDMENT
 MINOR MODIFICATION
 SIGNIFICANT MODIFICATION
 OFF-PERMIT CHANGE

1. FACILITY NAME: <u>Goldstone Deep Space Communications</u>	
2. FACILITY ID: <u>00611</u>	
3. TITLE V PERMIT NO: <u>13300611</u>	
4. TYPE OF ORGANIZATION: <input type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input checked="" type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
5. COMPANY NAME:	
6. COMPANY MAILING/BILLING ADDRESS: STREET/P.O. BOX: <u>93 Goldstone Road</u>	
CITY: <u>Ft. Irwin</u>	STATE: <u>CA</u> 9-DIGIT ZIP CODE: <u>92310</u>
7. FACILITY ADDRESS: STREET: <u>93 Goldstone Road</u>	
CITY: <u>Ft. Irwin</u>	STATE: <u>CA</u> 9-DIGIT ZIP CODE: <u>92310</u>
8. DISTANCES (FEET AND DIRECTION) TO CLOSEST: FENCELINE: <u>11,800 SW</u> RESIDENCE: <u>32,842 SW</u> BUSINESS: <u>33,792 SW</u> SCHOOL: <u>32,900 SW</u>	
9. GENERAL NATURE OF BUSINESS: <u>Tracking Unmanned space Flight</u>	
10. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary) <u>Propane IC Engine driving a 100 kW generator. Would like to switch unit from "emergency" to "prime" use.</u>	
11. PERSON TO CONTACT FOR INFORMATION ON THIS APPLICATION:	
NAME: <u>Mark Solheid</u>	PHONE NUMBER: <u>(760) 255-8225</u>
TITLE: <u>Sr. ESH Analyst</u>	EMAIL: <u>msolheid@gdscc.nasa.gov</u>

II. COMPLIANCE CERTIFICATION (Read each statement carefully and check all for confirmation):

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:



Signature of Responsible Official

4/11/2013

Date

Michael Clements

Name of Responsible Official (please print)

Complex Manager

Title of Responsible Official (please print)

For AQMD Use Only:

DATE STAMP	DISTRICT PERMIT APPLICATION NO: _____	COMPANY /FACILITY ID: _____
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MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

14306 Park Avenue, Victorville, CA 92392-2310

(760) 245-1661

Facsimile: (760) 245-2022

www.mdaqmd.ca.gov

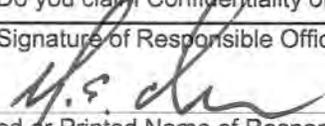
Eldon Heaston

Executive Director

APPLICATION FOR INTERNAL COMBUSTION ENGINE (I.C.E.) ONLY

Page 1 of 2: please type or print

REMIT \$236.00 WITH THIS DOCUMENT (\$135.00 FOR CHANGE OF OWNER)

1. Permit To Be Issued To (company name to receive permit): National Aeronautics & Space Administration		1a. Federal Tax ID No.: 22-1522888	
2. Mailing/Billing Address (for above company name): 4800 Oak Grove Drive			
3. Facility or Business License Name (for equipment location): Goldstone Deep Space Communications			
4. Facility Address - Location of Equipment (if same as for company, enter "Same"): 93 Goldstone Road, Ft. Irwin, CA 92310		Facility UTM or Lat/Long: 35.301038/-116805890	
5. Contact Name/Title: Mark Solheid		Email Address: mjsolheid@gdscn.nasa.gov	Phone/Fax Nos.: (760) 255-8225
6. Application is hereby made for Authority To Construct (ATC) and Permit To Operate (PTO) the following equipment: Propane IC Engine driving a generator			
7. Application is for: <input type="checkbox"/> New Construction <input checked="" type="checkbox"/> Modification* <input type="checkbox"/> Change of Owner*		For modification or change of owner: *Current Permit Number: <u>E011623</u>	
8. Type of Organization (check one): <input type="checkbox"/> Individual Owner <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation <input type="checkbox"/> Utility <input type="checkbox"/> Local Agency <input type="checkbox"/> State Agency <input checked="" type="checkbox"/> Federal Agency			
9. Distances (feet and direction to closest): <u>11,800 SW</u> Fenceline <u>32,842 SW</u> Residence <u>33,792 SW</u> Business <u>32,900 SW</u> School			
10. General Nature of Business: Tracking unmanned spaceflight		11. Principal Product: Data Collection / Maintenance	
12. Facility Annual Throughput by Quarters (percent): <u>25</u> % <u>25</u> % <u>25</u> % <u>25</u> % Jan-Mar Apr-Jun Jul-Sep Oct-Dec		13. Expected Operating Hours of IC Engine: <u>24</u> <u>7</u> <u>52</u> <u>8,760</u> Hrs/Day Days/Wk Wks/Yr Total Hrs/Yr	
14. Do you claim Confidentiality of Data (if yes, state nature of data in attachment)? <input type="checkbox"/> Yes <input type="checkbox"/> No			
15. Signature of Responsible Official: 		Official Title: Complex Manager	
Typed or Printed Name of Responsible Official: Michael Clements		Phone Number: (760) 255-8423	Date Signed: 4/11/2103
- For District Use Only -			
Application Number:	Invoice Number:	Permit Number:	Company/Facility Number:

**MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT
I.C.E. APPLICATION, continued**

Page 2 of 2: please type or print

16. INFORMATION ON I.C.E.:

Manufacturer: General Motors

Model No.: 8.1 L Serial No.: 8P1L23472

Number of Cylinders: _____ Year of Manufacture: 2010

Rating: 240 BHP Speed: 3,000 RPM

I.C.E. is? New Existing Date Installed (MM/YYYY): _____

Prime Standby Emergency Portable (Yes or No)? _____

USEPA Family Name: _____ CARB Certification EO#: _____

Is this engine included in a Demand Response plan?: Yes No

Type of Fuel(s): Natural Gas Digester Gas Ethanol Landfill Gas
 Propane CARB Diesel Methanol Other: _____

Max fuel usage per hour: _____ Fuel units (ft³, gal, etc.): _____

Engine Lat/Long or UTM Coordinates: _____

Exhaust Stack Height (feet): _____ Inside Diameter (inches): _____ Y/N: Vertical? _____ Capped? _____

Is this I.C.E. (select all that apply):

Direct Injected? After Cooled?

Turbo Charged? Inter Cooled?

Timing Retarded? Other - Please specify: _____

17. EMISSION RATES:

Pollutant	at Max.Load	Units	Origin of Emission Rate data:	
			Manufacturer	or Source Test
Oxides of Nitrogen (NOx)	0.33	g/kW-hr	X	_____
Oxides of Sulfur (SOx)	0.0	g/kW-hr	X	_____
Carbon Monoxide (CO)	0.12	g/kW-hr	X	_____
Particulates (PM10)	0.02	g/kW-hr	X	_____
Total Hydrocarbons (VOC)	0.03	g/kW-hr	X	_____

18. EMISSION CONTROL EQUIPMENT: Add on emission control equipment? Yes No

If yes: Manufacturer: _____ Model No.: _____

Serial No.: _____ *CARB EO#: _____

Type: SCR: Particulate Trap*: Ammonia Injection: Water Injection:

Non-S CR: Exhaust Gas Recirc*: Oxidation Catalyst*:

Other - Please specify: _____

19. INFORMATION OF ITEM BEING POWERED: This I.C.E. is used to power:

Electrical Generator Compressor Pump

Paint Spray Gun Conveyor or Drive Fire Pump

Other - Please specify: _____

Manufacturer: Kohler

Model No.: 100 REZG Serial No.: 2335656

Type, Size or Rating: 100kW

Appendix B
Emission Unit Prioritization Score and HARP Data

Goldstone Facility PS

File: C:\HARP\PROJECTS\PET\Priority.txt

Facility Prioritization for District

Report date: 12/12/2012

Created by HARP Version 1.4f Build 23.11.01

Procedure Fac ID NonCancer	Description Cancer	Dispersion		Adjustment Multiplier Chronic	Procedure Cancer NonCancer	Emission and Potency	
		Acute	Chronic			Total Acute Score	Chronic
Proximity Calc. Method: manually edited by user at 7348 m							
13300611 0.002	device 1 0.284	0.000	0.002	***	0.287 0.002	0.000	0.002
13300611 0.000	device 2 0.000	0.000	0.000	***	0.000 0.000	0.000	0.000
13300611 0.002	NASA GOLDSTONE D 0.284	0.000	0.002	***	0.287 0.002	0.000 0.287	0.002