



**SOLANO  
COUNTY**

**DEPARTMENT OF  
RESOURCE MANAGEMENT**  
Planning Services Division

RECEIVED

SEP 29 2022

COUNTY OF SOLANO  
RESOURCE MANAGEMENT



## Land Use - Application

Office Use		
Application No. <u>U-22-04 (Lantos)</u>	Date Filed: <u>9/29/22</u>	Planner: <u>J-L.</u>
Application Fees Paid: <u>\$7,992.00</u>	Receipt No: <u>24001</u>	
Application Type: <input checked="" type="checkbox"/> New	<input type="checkbox"/> Amendment	<input type="checkbox"/> Minor Revision

### Entitlements Requested

☐ Administrative Permit (AD)

☐ Architectural Review (AR)

☐ General Plan Amendment (GP)

☒ Marsh Development Permit (MD)

☐ Minor Use Permit (MU)

☐ Mobile Home Storage Permit (MH)

☐ Mutual Agreement (MA)

☐ Performance Standards (PS)

☐ Policy Plan Overlay (PP)

☐ Rezone (Z)

☐ Use Permit (U)

☐ Variance (V)

☐ Waiver (WA)

☐ Zone Text Amendment (ZT)

PROJECT SITE		
Address <u>Birds Landing Road</u>	City <u>Birds Landing</u>	Zip <u>94512</u>
Assessor's Parcel Number(s) <u>0090-070-420</u>		
Zoning District <u>ASM 160</u>	General Plan Designation <u>Agriculture</u>	
Project is located within:		
<input checked="" type="checkbox"/> Land Conservation Contract Williamson Act Contract 746	<input type="checkbox"/> State Responsibility Area	<input checked="" type="checkbox"/> Suisun Marsh Management Area Secondary Management Area

CONTACT INFORMATION			
<b>Applicant</b> <u>Lantos Energy LLC - Gary Grinsfelder</u>			
Address <u>338 Harris Hill Road</u>	City <u>Williamsville</u>	State <u>NY</u>	Zip <u>14221</u>
Phone <u>(281) 450-6794</u>	Email <u>ggrinsfelder@gmail.com</u>		
<b>Property Owner</b> <u>Flannery Associates LLC</u>			
Address <u>60 N Market St., Ste C200-070</u>	City <u>Asheville</u>	State <u>NC</u>	Zip <u>28801</u>
Phone	Email		
<b>Additional Contact</b> <u>Shannon Peacock, Booher Consulting, LLC - Agent for Lantos Energy LLC</u>			
Address <u>3069 Alamo Drive, PMB 307</u>	City <u>Vacaville</u>	State <u>CA</u>	Zip <u>95687</u>
Phone <u>(707) 290-0900</u>	Email <u>sjhilliar@rabooherconsulting.com</u>		

<b>Additional Contact</b> Bob Brook			
Address	City	State	Zip
Phone	Email		

#### FEE DISCLOSURE

**Application Fees:** Reference the [Planning Services Division Fee Schedule](#) for appropriate filing fees required as part of a complete application submittal. Insufficient filing fees may prevent the acceptance of an application. **By filing this application, the applicant acknowledges that the hourly billing rate of staff time may be charged if the project exceeds the number of hours included in the application fee. You will be notified if the project is approaching this threshold.**

**Environmental Review Fees:** The Planning Services Division may collect additional fees to conduct the appropriate level of environmental review required for your project. The assigned planner will inform you of the appropriate filing fee. The fee does not include special studies that may be necessary for CEQA purposes. Reference the environmental review section of the [Planning Services Division Fee Schedule](#). Additional fees are not collected for projects that qualify for an exemption from CEQA.

#### CERTIFICATION

Owner and Applicant must sign below certifying that all information is to the best of his/her knowledge true and correct. Additionally, the undersigned does hereby authorize representatives of the County to enter the above-mentioned property for inspection purposes as may be necessary to process this application.

I hereby certify that the statements furnished above, along with the application submittal documents present the data and information required for project review to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

SIGNATURES	
<b>Applicant</b> <i>Agent for Lantos Energy LLC</i>	<i>[Signature]</i> Date <i>9/28/22</i>
Printed Name <i>Gary Grinsfelder</i>	
<b>Property Owner</b> <i>See attached 848 Letter Documentation</i>	<i>[Signature]</i> Date <i>9/28/22</i>
Printed Name <i>Flannery Associates LLC</i>	

Planning Application Fee(s)		Office Use	
		Environmental Review	
_____	\$ _____	Initial Study	\$ _____
_____	\$ _____	Negative Declaration	\$ _____
_____	\$ _____	CA Fish & Wildlife	\$ _____
		Mitigation Monitoring Plan	\$ _____
		Initiate EIR	\$ _____
Total:	\$ _____	Total:	\$ _____



## Environmental Evaluation Questionnaire

A completed [Environmental Evaluation Questionnaire](#) is required for certain Planning applications and other land use entitlements. A thorough, detailed, and quantified environmental evaluation questionnaire is required for a complete application and will facilitate a more efficient project review and permitting process, reduce processing timelines, and help ensure a well-designed project. Where a particular topic does not apply, the project description should indicate why.

### 1. EXISTING ENVIRONMENT

**Project Site:** Describe the subject property presently as it exists; including but not limited to, project location, size of the parcel, general topography and slope, vegetation on-site, and any other information which would assist the Department in understanding the project's environmental setting. Clear, representative color photographs may be submitted to show the project area. Draw in property boundaries on the photographs.

The proposed project is located in the Secondary Management Area of the Suisun Marsh. All project activities are located in  
upland areas/non native grassland. General topography is rolling hills with higher elevations in the north and lower elevations  
in the south where the project is proposed. See attached site plans, site photographs and Biological Assessment for more  
detail.

#### Slope of property

Flat or sloping	(0 - 6% slope)	<u>158</u>	acres
Rolling	(7 - 15% slope)	<u>78</u>	acres
Hilly	(16 - 24% slope)	<u>N/A</u>	acres
Steep	(> 24% slope)	<u>N/A</u>	acres

**Vegetation:** Describe the predominant vegetation on the site and within the development area. Identify the location and size of any wetlands, marshes, vernal pools, creeks or riparian areas, or woodlands and whether the project will require fill, crossings, or otherwise disturb these areas.

See the attached Biological Assessment Report.



**Drainage:** Describe existing drainage conditions on-site. Indicate the direction of surface flows, and any adjacent parcels affected.

Existing drainage patterns will be maintained throughout the entire project. Off site flow will exit the project area in all directions into adjacent grazing lands.

**Waterways:** Describe the location and extent of all waterways including creeks, streams, gulches, wetlands, ponds, reservoirs, drainage ditches, or other water features. For creeks or natural watercourses, indicate whether ephemeral (brief flows following rains), intermittent (seasonal flows during the wet season), or perennial (year-round flows).

Please see the attached Biological Assessment for more detail.

**Biological:** Describe if there any unique, sensitive, rare, threatened, or endangered animals, plants, or habitats on the project site or located within proximity which may be affected by the proposed development.

Please see the attached Biological Assessment for more detail.

## 2. EXISTING LAND USE, DEVELOPMENT, and ACTIVITIES

**Project Site:** Describe the existing land use(s) of the subject property.

The existing land uses of the project is natural gas exploration and grazing lands.

**Existing Structures:** Indicate the use of structure and size.

	Use of Structure	Square Feet
Residential	Residence	3,600 sq. ft.
Residential	N/A	
Agricultural	N/A	
Agricultural	N/A	
Commercial or Industrial	N/A	
Other	Shop and Garage	2,000 sq. ft and 2,200 sq. ft.

**Easements & Utilities:** Describe and indicate the location of any power lines, water mains, pipelines, or other transmission lines that are located on or adjacent to the property. Identify the location and purpose of any existing easements and utilities. These are usually identified in a title report and copies can be obtained from the County Recorder's office or a title company.



No existing powerlines but a natural gas pipeline is located 0.04 miles southwest of the proposed project as well as another pipeline located 2,800 feet to the east of the proposed project.

**Covenants and Restrictions:** Identify and provide copies of any covenants, conditions, and restrictions that apply to the parcel. These are usually identified in a title report and copies can be obtained from the County Recorder's office or a title company.

N/A.

**Surrounding Uses:** Identify the type of existing land uses in the general vicinity of the subject site and approximate distance of any sensitive land uses, including residences, to the nearest property line.

The surrounding land uses of the project is natural gas exploration, marsh and grazing lands.

Identify land uses on adjacent parcels (specify types of crop or farming operation if agricultural).

North	grazing lands	South	marsh and grazing lands
East	residence and grazing lands	West	marsh and grazing lands

### 3. AGRICULTURAL OPERATIONS

**Agricultural Use:** If applicable, describe agricultural operations onsite. Indicate the type of crop, cultivated and irrigated farming, non-irrigated and non-cultivated farming, grazing, or pastured livestock.

The proposed project site is located in upland areas/non native grassland with grazing activities.

**Agricultural Processing:** If applicable, describe the type and location of any processing of agricultural products on-site. Agricultural processing includes any processing or packaging of crops after harvest. Examples include alfalfa or hay cubing; corn shelling; the drying of corn, rice, hay, fruits, or vegetables; pre-cooling and packaging of fresh or farm-dried fruits and vegetables; canning, freezing, or preserving fruits and vegetables; tree nut hulling and shelling; and alcohol fuel production.

N/A.

**Animal Facilities and Operations:** If applicable, describe any grazing or pastured livestock operations on-site, include type and quantity for each animal.

Type of Animal	Quantity
N/A.	

**Williamson Act** - If applicable, indicate whether any portion of the subject property is entered into the Williamson Act Contract, Agricultural Preserve, Agricultural Conservation Easement, Open Space, or similar. If the property is entered into a Land Conservation Contract, provide a copy of the contract. If applicable, include a copy of the notice of non-renewal.

The project is under Williamson Act Contract 746.

4. PROPOSED PROJECT

**Proposed Development and/or Land Use:** Describe the type of development, proposed use or business, changes or alterations to the property or building, and the purpose or objective of the proposal.

Lantos Energy LLC (Lantos Energy) is proposing to construct a new well pad and drill one (1) exploratory gas well, Marsalla #1. If drilling is successful, production equipment will be installed on site and a pipeline will be installed and connected to an existing gas line located to the southwest of the proposed well. The objective of the proposed project is locate untapped natural gas sources with potential for development both within and/or outside of existing natural gas fields. See attached project description for more detail.

**Proposed Structures:** Describe the location, type, and size of any proposed structures. Indicate what types of activities would be performed in each. If altering an existing structure, indicate existing use and proposed alterations and intended use.

No structures are proposed.

**Proposed Improvements:** Describe the location, type, and size of any additional proposed development, including fences, driveways, patios, utilities, wells, septic systems, and parking areas.

N/A

**Proposed Outdoor Uses or Activities:** Describe any outdoor use areas including outdoor storage (describe materials, equipment, or vehicles being stored), parking, loading areas, etc. Provide square footage devoted to each use.

N/A

**Proposed Grading:** Describe any proposed grading, earthwork, or changes to existing topography that will be required to achieve the proposed development.

Any vegetation removed will be transported to an off-site waste disposal facility. Fill materials will be placed on the proposed well site and proposed access road to raise the elevation of the proposed well site and proposed access road. Fill materials will consist of sand and/or base rock.

Percent of site previously graded: 0 %.

Project area (area to be graded or otherwise disturbed): 65,500 sq. ft./acres.

Estimate the amount of soil to be moved (cut and/or fill):

Less than 50 cubic yds<sup>3</sup> X More than 50 cubic yds<sup>3</sup> More than 1000 cubic yds<sup>3</sup>

Estimate the amount of soil to be:

Imported 500 yd<sup>3</sup> Exported 15,000 yd<sup>3</sup> Used on site 500 yd<sup>3</sup>

**Heights:** Include the height of all structures, including buildings, fences, retaining walls, and accessory structures.

	Type of Structure	Height
Residential	N/A	
Residential	N/A	
Agricultural	N/A	
Agricultural	N/A	
Fence / Wall	N/A	
Commercial or Industrial	N/A	
Other	Temporary Drill rig - maximum height 125 feet	



**Lot Coverage:** Provide the total area in square feet of the lot covered by buildings and structures for the building lot coverage; provide the total area in square feet of the lot covered by impervious surfaces.

	Square Feet
Building coverage	
Surfaced area	7,800 sq. ft.
Landscaped	
Open space / fallow area	
Other	grazing land - 235 acres

**Solid & Hazardous Waste:** Describe any hazardous materials or wastes handled onsite. Discuss provisions for solid/hazardous waste disposal (specify company or agency if applicable).

See attached project description.

**Noise:** Describe the existing ambient noise conditions (rural or urban) and describe all proposed activities and facilities or site features that will produce noise, such as parking and loading areas, outdoor heating and ventilation equipment, crush pads, bottling equipment, outdoor storage areas, outdoor patios, picnic and event areas. Describe the location and distance from noise sources to the property lines of the nearest sensitive receptors including residences, schools, and hospitals. Provide the distance from noise sources to property lines.

The project will result in short term changes to existing sound levels during drilling operations. The maximum anticipated sound

levels associated with the drilling phase (loudest phase) is 91dBA. The closest sensitive receptor is located approximately 2,800'

Accordingly, the anticipated sound levels with short term drilling operations would be 56 dBA at this sensitive receptor.

**Odors:** Describe any existing or proposed uses which may emit odors detectable on or off-site.

Vehicle and diesel engines used to operate drilling equipment as well as vehicle and diesel equipment used for project activities.

**Proposed General Plan or Zoning change:** If applicable, list the desired General Plan Designation or Zoning District.

No General Plan Designation or Zoning changes are proposed for the proposed project.

## 5. CIRCULATION and ACCESS

**Site Access:** Discuss the existing access to the subject site. Indicate whether vehicle access is provided by public roadway, private road, or easement. Describe the condition of the roadway.

The proposed project is located north of Birds Landing Road with no public access. A new access road will be approximately 40 feet in length by 20 feet in width to access the proposed well site from Birds Landing Road.

**Onsite Circulation:** Discuss the onsite circulation and provide widths of roadway or pathways and length of site access for vehicles, trucks, bicycles, and pedestrians. Describe the condition of any road, driveway, or pathways onsite. Access roads will be 20' wide. The access road leading to the project site is gravel and dirt and is in good condition.

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**Road Improvements:** Discuss any roadway, easement, or right of way improvements or acquisition necessary to facilitate the proposed land use or development.

No roadway improvements to existing roads is proposed.

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**Parking (Existing):** Identify the total square footage and dimensions of all parking areas, including overflow parking areas and the size, number, and type of parking spaces (include accessible vehicle parking), and the type of surface.

N/A.

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**Parking (Proposed):** Identify the total square footage and dimensions of all proposed parking areas, including overflow parking areas and the size, number, and type of parking spaces (include accessible vehicle parking), and the type of surface proposed.

Parking will occur within the boundaries of the proposed project site. The proposed project site will be 100 feet by 170 feet with

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an new access road measuring 40 feet by 20 feet. Please see attached project description for more detail.

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**Traffic Generation:** Estimate the anticipated trip generation for the proposed use, including employee trips, truck trips, and the general public. Include the peak period daily trips and the average daily trips. For land uses involving weekend hours, including weekend trip generation.

See attached project description for more detail.

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**Loading Areas:** Identify existing and proposed location, size, dimension, and access for all loading areas. Provide an estimate of the number of annual and average daily truck trips.

See attached project description for more detail.

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**Fire and Emergency Services:** Describe the type and location of emergency services relative to the project site. Is the site located in a high fire hazard or State Responsibility area? Is access adequate for fire and emergency vehicles?

The project site is not located in a high fire hazard or State Responsibility area (please see attached maps for reference)

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Access to the project site is adequate for fire and emergency vehicles.

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## 6. UTILITIES and SERVICES

**Water Supply:** Describe the existing and proposed source and method of domestic water supply (specify provider of public water). Indicate the location(s) of domestic water wells on site.

All water needed for the project will be transported to the project site by water trucks, and in some cases, will

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be stored in portable tanks.

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**Sewage Disposal System:** Describe the existing and proposed source and method of sewage disposal (specify provider of public sewer). Indicate the location, size, dimensions, and type of sewage disposal system including leach fields on site.

Portable toilets will be used on site. Sewage will be transported and disposed of off site according to applicable local

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and state regulations.

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**Storm Water Management Plan:** Describe existing and proposed stormwater management including runoff, treatment, drainage, and flood control.

Existing drainage patterns will be maintained throughout the entire project. Off site flow will exit the project area in all

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directions into adjacent grazing lands. See attached grading plan/erosion control plan.

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## 7. COMMERCIAL ACTIVITIES

**Hours of Operation:** Identify the hours of operation for existing and proposed land uses.

There are no existing hours of operations. Proposed hours of operation will be 7am to 7pm. 24 hours a day will occur only during

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proposed drilling activities. Please see the attached project description for more detail.

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**Employees:** Identify the existing and proposed number of employees at full implementation or build-out of the project.

There are no existing employees on site. There will be approximately 7 to 25 during the site preparation phase and drilling and

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testing phase and then one (1) person that will be visit the project site daily for the life of the well.

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**Visitors:** Estimate the number of visitors per day at full implementation of the use.

No visitors will be allowed as the proposed project is not open to the public.

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**Marketing Plan/Promotional Activities and Events:** If the use involves events or promotional activities, provide a summary of the marketing plan, including a table summarizing the type of activity or the type of event (wedding, winemaker dinner, fundraiser, etc.), number of events per month and year, hours of operation, the maximum number of persons/participants, number of employees, type of foodservice, and outdoor use areas and whether music or amplified sound is proposed.

N/A

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**Food Service:** Indicate if food is proposed to be served to the public and the type of facilities proposed for food service, the square footage of the area for food service, the number of seats or persons that can be served, and the hours of operation.

N/A

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**Signage:** Describe all existing and proposed signage onsite. Indicate the location, dimensions, area, and height.

Project signage will be located at the entrance of the project site. One sign will be approximately 2 feet by 2 feet with an arrow and name of the drill rig and another sign will be approximately 2 feet by 3 feet with information for site safety.

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## 8. PROPOSED DESIGN

**Architectural Design Style:** Describe the architectural style, design, materials, finishes, and colors for all buildings and structures, including roofs, fences, walls, or other site features. Describe the location and type of any existing or proposed exterior lighting.

Please see the attached project description for more detail.

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**Landscaping and Fencing:** Identify all landscape and outdoor use areas, including dimensions and size of all turf areas, tree plantings, gardens, landscape, patios, trash enclosures, type of irrigation proposed, fencing, walls, hedges, and other landscape features (i.e. ponds, pools, berms, etc.).

Please see the attached project description for more detail.

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**Construction Methods & Timing:** Provide details regarding the type and extent of construction required, the construction methods, schedule, the duration and hours of construction, location of any staging areas, and whether or not the project would be constructed in phases.

Please see the attached project description for more detail.

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## 9. ADDITIONAL BACKGROUND INFORMATION

**Larger Project:** Describe if the proposed development is part of a larger project.

The proposed project is not part of a larger project.

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**Additional Permits:** List any permits that are required from Solano County and/or other local, state, or federal agencies (ie. Building permit, Department of Fish and Wildlife, Marsh Development, etc.)

Solano County - Marsh Development Permit, Security for Oil and Gas Well Drilling, Encroachment and Grading Permit

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California Energy Management Division (CalGEM) - Notice of Intent to drill

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**Previous Approved Projects:** List any know previously approved projects located on the property (i.e. Use Permit, Parcel Map, etc.) Identify the project name, type of project, and date of approval.

N/A

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**Professional Reports:** List any know professionally prepared reports for the subject site (i.e. biological survey, traffic study, geologic, hazardous materials, etc.)

Biological Assessment

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## 10. ENVIRONMENTAL CHECKLIST

Indicate the following items applicable to the project or its effects. Discuss all items checked "Yes" or "Maybe". Attach additional sheets if necessary.

	YES	MAYBE	NO
A. Change in existing natural features including any bays, tidelands, lakes, streams beaches, natural landforms, or vegetations.			✓
B. Change in scenic views or vistas from existing residential areas, public lands, or roads.			✓
C. Change in scale, pattern, or character of the general area of the project.			✓
D. Increased amounts of solid waste or litter.	✓		
E. Dust, ash, smoke, fumes, or odors on-site or in the vicinity.	✓		
F. Change in groundwater quality or quantity.			✓
G. Alteration of existing drainage patterns, or change in surface water quantity or quality.			✓
H. Change in existing noise or vibration levels.	✓		





**LANTOS ENERGY LLC  
MARSALLA #1 PROJECT  
ATTACHMENT A**

**SECTION 10 - ENVIRONMENTAL CHECKLIST**

**Item D – Increased amounts of solid waste or litter**

Drilling mud and well bore cuttings will be generated during the drilling operations. These materials will be stored in tanks for off site disposal according to applicable federal, state, and local regulations.

**Item E – Dust, ash, smoke, fumes, or odors on site or in vicinity**

Diesel exhaust will be generated from engines used to operate project equipment. However, impacts will be short term and temporary as diesel exhaust will be generated only drilling and production operations. Project equipment is permitted as a mobile source with the State Air Resources Control Board.

**Item H – Change in existing noise or vibration levels.**

The project will results in short term changes to existing sound levels during the drilling operations. The maximum anticipated sound levels associated with using a drill rig during drilling operations is approximately 91 dba. The closest sensitive receptor is a residence located 2,800 feet east of the proposed well site. Accordingly, anticipated sound levels associated with short term drilling operations would be 56 dBA.

Vibration is oscillating motion of structures or the ground. The rumbling sound caused by the vibration in the ground is called ground-borne vibration. The proposed project is expected to create ground-borne vibration as a result of project activities (e.g. during drilling and production activities). Two elements need to be generally concerned regarding ground-borne vibration impacts: damage to buildings and annoyance to humans. One of the accepted measurements for evaluating building damage associated with ground-borne vibration is peak particle velocity (PPV). The PPV at the nearest residence was measured to be 0.00058 in/sec based on a ground vibration monitoring study of a triple rig,. The estimated PPV at the nearest residence is lower than the PPV of 0.05 in/sec that may cause effects to buildings ([http://www.drnoise.com/PDF\\_files/Vibration%20Primer.pdf](http://www.drnoise.com/PDF_files/Vibration%20Primer.pdf)). Therefore, the estimated ground-borne vibration generated by the proposed project will not have a significant impact to structures.

Another widely accepted source of measurements, as an alternative to using PPV, for evaluating human annoyance associated with ground-borne vibration is root-mean-square (rms) amplitude. According to the U.S. Department of Transportation, Federal Transit Administration (2006), “It takes some time for human body to respond to vibration signals. In a sense, the human body responds to an average vibration amplitude. Because the net average of a vibration is zero, the root mean square (rms) amplitude is used to describe the “smoothed” vibration amplitude. The root mean square of a signal is the square root of the average of the squared amplitude of the signal. The average is typically calculated over a one-second period.” The rms, connoted as

vibration decibels (VdB) on a log scale, is used to evaluate human annoyance against ground-borne vibration. The Vibration Velocity Level (measured in VdB) at the nearest residence was measured to be 43.2 VdB. The calculated vibration velocity level at the nearest residence is lower than the threshold of perception for humans of 65 VdB (Department of Transportation, Federal Transit Administration (2006)). Therefore, the estimated ground-borne vibration generated by the proposed project will not have a significant impact to the nearest sensitive receptors.

If drilling is successful, production equipment will generate sound levels of approximately 70 dBA. The closest sensitive receptor is located approximately 2,800 feet to the east. Accordingly, anticipated sound levels associated at this residence will be 35 dBA. No vibration is anticipated during production operations as the proposed well will be connected to a pipeline and no source of vibration will be present on the proposed well site.

**Item J – Storage, use or disposal of materials potentially hazardous to man or wildlife, including gasoline and diesel fuel.**

Drilling mud and fluids, gasoline and diesel will be stored on site during drilling activities. Potentially hazardous materials will be stored in portable tanks according to applicable federal state and local regulations.

**Item L – Increase in fossil fuel consumption (electricity, natural gas, oil, etc.)**

The proposed project will result in a temporary increase in fuel consumption during drilling, testing and production phase activities. After production equipment have been completed, the proposed project will not result in an increase in fossil fuel consumption.

**Item N – Change in traffic or vehicular noise on road system in immediate vicinity.**

Site preparation, drilling, testing and production phase activities will result in a temporary increase in traffic/vehicle noise, as workers will commute to and from the proposed well site. Equipment and supplies will be also be hauled to the site during site preparation, drilling, testing and production phase activities. Increased natural gas production will not change exiting traffic or vehicular noise on the road system.

**Item P – Removal of agricultural or grazing lands from production.**

Lantos is proposing to construct a well site and access road. Once the well is abandoned, any sand and/or gravel used to build up the proposed well site and proposed access road will then be removed. Contours will be re-established to near grade conditions present at the time of project initiation. After all equipment is removed, the proposed well site and proposed access road will be restored back to upland/grazing land.

**LANTOS  
OLD MAN PROSPECT PROJECT  
PROJECT DESCRIPTION**

**Introduction**

Lantos Energy LLC (Lantos) is proposing to construct a drill site and drill one (1) exploratory natural gas well from the proposed drill site over a one (1) year period. The proposed Marsalla well is located at Latitude 38.133385 and Longitude -121.898040. If drilling is successful, Lantos proposes to install the required production equipment including a natural gas pipeline. The proposed pipeline would be constructed from the proposed drill site to an existing natural gas pipeline located approximately 0.04 miles (200 feet) southwest of the proposed well site. The proposed pipeline would be installed using traditional open-cut trench methods. No boring will be used to install the pipeline. No hydraulic fracturing is proposed. The entire proposed project will be located within the Secondary Management Area of the Suisun Marsh. The entirety of the proposed project would be installed on private lands.

The drill site location was selected to minimize impacts to sensitive resources including wetlands. The proposed well site will encompass an area of 100 feet by 170 feet (approximately 17,000 square feet, or 0.39 acres) with an access road measuring 40 feet in length and 20 feet in width (approximately 800 square feet, or 0.02 acres). All project impacts would occur in upland grassland habitat. The proposed project site was also selected because it is near an existing public road, and would require only a short section of new access road to be constructed, minimizing disturbance to native habitats areas.

**Project Phases**

The proposed project includes three (3) phases: a site preparation phase, a drilling and testing phase and a production phase. A detailed description of each phase is presented below.

***Site Preparation Phase***

Prior to initiating site preparation activities, all workers will be given an environmental orientation to ensure that those working in the project area understand the sensitivity of the areas adjacent to the proposed well site and proposed access road, and the necessity of avoiding disturbance to these areas. The environmental orientation will also discuss emergency response guidelines and conservation and mitigation measures designed to avoid or minimize potential environmental impacts.

Project area boundaries will be clearly delineated by project biologists to ensure all activities are confined to the approved work area and to avoid wetland areas outside of the proposed well site and proposed access road as previously delineated by wetland biologists. Project biologists will oversee removal of vegetation from the proposed well site and proposed access road. Any vegetation removed will be transported to an off-site waste disposal facility. Fill materials will be placed on the proposed well site and proposed access road to raise the elevation of the proposed well site and proposed access road. Fill materials will consist of sand and/or base rock.



Lantos will use above ground steel tanks to store its drilling cutting and excess mud during drilling and completion operation and no sump will be constructed as part of this project. All drilling mud and cuttings will be transported offsite to an approved disposal site. Equipment used & mileage for site preparation activities is presented in Table 1.

**Table 1**  
**Equipment Used During Site Preparation Phase**

<b>On Site Equipment</b>	<b>Number of Equipment</b>	<b>HP</b>	<b>Days of Operation</b>	<b>Total Hours/Day</b>
Grader	1	140	5	8
Track Hoe/ Loader	1	100	5	8
Roller/Compactor	1	100	2	8
<b>Mobile Sources</b>	<b>Number</b>	<b>Round Trip Distance (Miles)</b>	<b>Duration (days)</b>	<b>Total Miles Driven</b>
Water Truck	1	100 miles/day	3	300
Passenger Car/Pickup Truck Round Trips	5	100 miles/day	8	4,000
Heavy Truck/Semi	2	100 miles/day	2	400

Existing public roads will be used to provide access from Birds Landing Road to the proposed project area. A new access road will need to be constructed from the existing private gravel road to the proposed well site; the new access road will encompass approximately 20 feet in width by 40 feet in length. Lantos estimates that approximately five (5) days will be needed to prepare the proposed well site and proposed access road. Site preparation activities will operate 8 hours per day.

### ***Drilling & Testing Phase***

The drilling phase of the proposed project will last approximately 28 days. The drilling phase includes six (6) days for mobilization and demobilization of the drill rig, 22 days for drilling, and two (2) days for various tasks associated with the drilling phase including installation of blowout prevention equipment, cementing, mud-logging, etc.

Drilling equipment will be mobilized to the site and rigged up. The project will use Paul Graham Rig located in Rio Vista. The drill rig is registered in the California Portable Emission Registration Program. Temporary facilities, equipment and materials necessary for the drilling operation will be set up and stored on the proposed well site (i.e., drilling mud supplies, water, drilling materials and casing, crew support trailers, pumps and piping,

portable generators, fuels and lubricants, etc.). Equipment required and mileage during the drilling phase is listed in Table 2.

**Table 2**  
**Equipment Used During the Drilling Well**

<b>On-Site Equipment</b>	<b>Number</b>	<b>Horsepower</b>	<b>Days of Operation</b>	<b>Total Hours/Day</b>
Backhoe	1	50 HP	10	4 hours
Forklift	1	50 HP	22	4 hours
Drill Rig Motor #1 & 2 (Draw work Engines)	2	665 HP	22	17.5 hours
Drill Rig Motor #3 & 4 (Pump Engine)	2	1000 HP	18	20 hours
Drill Rig Motor #5 & 6 (Generators)	2	685 HP	22	24 hours
<b>Mobile Sources</b>	<b>Number</b>	<b>Round Trip Distance (Miles)</b>	<b>Duration (days)</b>	<b>Total Miles Driven</b>
Water Truck (Heavy Duty)	1	100 miles/day	12	1,200
Passenger Car/Pickup Trucks (Light Duty)	10	100 miles/day	25	25,000
Heavy Duty Trucks	2	100 miles/day	6	1,200

The completion and testing phase of the project, if the well is not a dry hole, will take approximately three (3) days and it involves the equipment and mileage shown on Table 3.

**Table 3**  
**Equipment for Completion and Testing Phase**

<b>Equipment Type</b>	<b>Number</b>	<b>Horsepower</b>	<b>Days of Operation</b>	<b>Hours Operation Daily</b>
Completion Rig	1	350	3	10
Oil/Gas Separator	1	N/A	1	24
500 BBL Portable Tanks	2	N/A	3	8
Testing Flare (Maximum heat output of less than/or equal to 50 mmbtu/day, natural gas fired)	1	N/A	1	24
<b>Mobile Sources</b>	<b>Number</b>	<b>Round Trip Distance</b>	<b>Duration (days)</b>	<b>Total Miles Driven</b>
Pick-up Truck	5	100 miles*	3	1,500
Heavy Duty Truck (Oil Transport)	1	100 miles*	3 trips	300

\*Round Trip Distance is calculated from Rio Vista, California.

Night lighting will be required and available only during the drilling phase. However, to the greatest extent possible night lighting will be directed inward and down to minimize off site impacts without compromising safety.

No hazardous materials will not be used or stored on the location with the exception of diesel fuel. However, the proposed project will not result in the production of hazardous waste as defined and regulated by Titles 22 and 23 of the California Code of Regulations. Rather, the project will generate non-hazardous designated waste, including drilling muds and oily wastes, able to be disposed of in a permitted Class II disposal facility. In the unlikely event an anticipated waste were to later be deemed a hazardous Class I waste by the state, such waste would be treated, stored and disposed of at an offsite facility permitted to accept Class I waste.

Any hazardous materials (very unlikely) and non-hazardous waste will be transported by a licensed transportation company. The commercial transportation, identification, and designation of appropriate shipping routes for these materials will be in conformance with the adopted Solano County and Incorporated Cities Hazardous Waste Management Plan (HWMP). California regulates the transportation of hazardous waste originating or passing through the State, by statute, in the California Health and Safety Code and Title 22 and 13 of the California Code of Regulations (CCR). The California Highway Patrol (CHP) and Caltrans have primary responsibility for enforcing these regulations and responding to hazardous materials transportation emergencies. The CHP enforces materials and hazardous waste labeling and packing regulations that prevent leakage and spills of material in transit and provide detailed information to cleanup crews in the event of an incident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP. The CHP conducts regular inspections of licensed transporters to ensure regulatory compliance. Transportation of hazardous waste is also regulated under the Hazardous Materials Regulations Section 49 of the Code of Federal Regulations (CFR). The Environmental Protection Agency (EPA) has exempted the transportation of produced water, drilling fluids, drill cuttings and rig wash as the EPA believes these "special wastes" are lower in toxicity than other wastes being regulated as hazardous waste under Resource Conservation and Recovery Act (*Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations*, EPA, October 2002).

Above ground portable tanks will be used for mixing and storing drilling fluids. All fluids will be disposed of in accordance with the requirements of the Regional Water Quality Control Board (RWQCB). The solids that accumulate in the above ground tanks will be transported offsite for disposal.

Surface casing would be set, cemented, and blowout prevention equipment installed at the wellhead and tested. The amount of surface casing used depends upon factors such as expected well pressures, the depth of fresh water, and the competence of the strata in which the well casing will be cemented. Blowout prevention equipment is bolted to the surface casing and will be tested per California Department of Conservation, Geologic Energy Management Divisions

(CalGem) requirements All successive drilling occurs through the blowout prevention equipment, which can be operated to control well pressures at any time. Blowout prevention equipment will be regulated by the CalGEM. CalGEM engineers will be notified for required tests and other operations (blowout prevention, surface casing integrity).

Well casing is designed to protect underground and surface waters suitable for irrigation or domestic purposes. CalGEM's well construction standards have the fundamental purpose to ensure zonal isolation. Zonal isolation means that natural gas coming up a well from the productive, underground geologic zone will not escape the well and migrate into other geologic zones, including zones that might contain fresh water. Zonal isolation also means that the fluids that are put down a well for any purpose will stay in that zone and not migrate to another zone. To achieve zonal isolation, CalGEM regulations require that a cement barrier be placed between the well and surrounding geologic strata or stratum. The cement bonds to the surrounding rock and well casing and forms a barrier against fluid migration. Cement barriers must meet certain standards for strength and integrity. If these cement barriers do not meet the standards, CalGEM requires the operator to remediate the cement barrier. Metal casings, which can be several layers depending on the depth of a well, also separate the fluids going up and down a well bore from the surrounding geology. If the integrity of a well is compromised by ground movement or other mechanisms, the well operator must remediate the well to ensure zonal isolation. Well casing standards are prescribed in Title 14 CCR, Division 2, Chapter 4, Subchapter 1, Article 3, Sections 1722.2 – 1722.4. Sufficient weighted drilling fluid would be used to prevent any uncontrolled flow from each well and additional quantities of drilling fluid would be available at each site (Title 14, CCR Section 1722.6).

Drilling will continue for the well until target depth is reached. Once target depth is reached, the proposed well will be fully tested and evaluated. The proposed well will be tested with a flow line running to a portable test separator. Any produced gas will be flared and liquids will be stored in a portable tank for transportation to an off-site facility. Equipment, personnel and supply deliveries will continue through the course of the drilling program. Approximately 10 to 15 personnel will be on site at any given time during drilling operations and drilling activities will operate 24 hours per day.

Should the proposed well be found to have insufficient commercial natural gas potential it would be plugged and abandoned per CalGEM regulations and specifications, in accordance with Title 14 CCR, Division 2, Chapter 4, Subchapter 1, Article 3, Sections 1723 – 1723.8 and the proposed well site restored for agricultural activities.

After the well is drilled and the well is either completed or abandoned, the drilling rig and related equipment will be removed from the proposed well site. The above activities would be completed for each of the exploratory natural gas well.

### ***Production Phase***

If economic quantities of natural gas are discovered, the well will be completed and production facilities will be installed. Production facilities include a gas meter, a heater/separator, dehydrator, production water and condensate storage tanks. Lantos estimates that approximately 10 days will be required to install the necessary production equipment and pipeline. Equipment used during the installation of production equipment and pipeline is listed in Table 4 and equipment used during the production phase is listed in Table 4.

**Table 4**  
**Equipment Used During Installation of Production Equipment and Pipeline Phase**

<b>On-Site Equipment</b>	<b>Number</b>	<b>Horsepower</b>	<b>Days of Operation</b>	<b>Total Hours/Day</b>
Backhoe/Trencher	1	50 HP	8	12
Welding Equipment	1	NA	8	12
Side-Boom Crane	1	300 HP	8	12
<b>Mobile Sources</b>	<b>Number</b>	<b>Round Trip Distance (Miles)</b>	<b>Duration (days)</b>	<b>Total Miles Driven</b>
Passenger Car/Pickup Trucks (Light Duty)	5	100	8	4,000
Heavy Duty Trucks	2	100 miles/day	8	800

\*Round Trip Distance is calculated from Rio Vista, California.

A six (6)-inch natural gas pipeline collection system would also be installed during this phase of the project. Survey crews will be employed to set centerline stakes for the pipeline trenches and to delineate work areas prior to commencing pipeline installation activities.

Clearing of grassland habitat will be required along the proposed pipeline alignment. No disturbance or removal of any other vegetative community types will occur.

#### **Open-Cut Trench Methods (Trenching)**

Trenching requires the use of a trencher or backhoe to establish an open trench of approximately four (4) to six (6) feet deep and approximately two (2) feet wide. The pipeline work area will measure 10 feet wide by 200 feet in length (approximately 2,000 square feet, or 0.05 acres). Pipe will be placed beside the trench by the stringing crew. Pipe joints will be bonded together, and all joint connections will be inspected and tested prior to laying the pipe into the trench. The pipeline will then be lowered into the trench by a small side-boom crane. The pipe will then be covered



with soils that were excavated during the trenching operation and the ground compacted above the pipe.

Construction conditions may require pipe bends for which field bending would not be practical. In this case, pipe joints will be welded together and all joint connections will be inspected prior to laying the pipe into the trench. The pipeline will then be lowered into the trench by a small side-boom crane. The pipe will then be covered with soils that were excavated during the trenching operation and the ground compacted above the pipe.

At the time of backfilling, a colored warning tape will be buried approximately 18 inches above the pipeline to indicate the presence of a buried pipeline to future third party excavators. In roadways, the backfilled soil will be compacted using a roller or hydraulic compactor prior to placement of gravel or pavement. The surface of the road or area adjacent to the road will be returned to its condition prior to installation of this section of the proposed pipeline. After the pipeline is buried, the construction corridor will be re-contoured to approximately the same grade or slope that existed prior to pipeline installation. It should be noted that an exception to mechanical excavation would be hand digging to locate buried utilities, such as other pipelines, cables, and waterlines. Water trucks will be used for dust control along the ROW as required.

Lantos estimates that the proposed pipeline would be completed within eight (8) days at the same time as the production equipment is being installed. Pipeline installation activities will operate 12 hours per day. Production activities will operate 24 hours per day.

Natural gas will be metered for customer sales at the proposed well site. The proposed well site will be inspected on a daily basis. By-products from natural gas production including production water will be stored temporarily on site. By-products will be periodically transported from the proposed well site by truck for off-site disposal and/or recycling at an applicable facility. During the producing life of a well, a workover service rig (a small mobile drilling rig) may be occasionally required to improve production.

At the conclusion of the well(s) economic life (production), the well will be abandoned and plugged in accordance with CCR Sections 1723 – 1723.8. In this case, a Notice of Intention to abandon the well(s) will be submitted to CalGEM for review and approval. During a typical well abandonment, recoverable production equipment and wellhead will be salvaged from the well and the hole will be plugged with cement. The casing will be cut off six (6) feet below ground surface, capped with a welded plate and the cellar backfilled. Once the well is abandoned, any sand and/or gravel used to build up the proposed well site and proposed access road will then be removed. Contours will be re-established to near grade conditions present at the time of project initiation. After all equipment is removed, the proposed well site and proposed access road will be restored back to wetland and upland habitat.

The entirety of the proposed pipeline would be installed on private lands to avoid impacts to habitat including wetlands.

Total numbers of trips for vehicles and heavy trucks for the entire project is listed in Table 5.

**Table 5**  
**Truck and Vehicle Trips**  
**(1st well)**

	Trucks	Auto/Pickups
Site preparation (well site and road construction)	3	5
Drilling	3	10
Completion and Testing	1	5
Installation of production equipment and construction of pipeline	2	5
<b>Total</b>	<b>9</b>	<b>25</b>