



Orosz Engineering Group, Inc.

October 27, 2008

OEG Ref 07-30807

Ms. Erin Newman
Excelaron, LLC
1075 Court St., Suite 207
San Luis Obispo, CA 93401

Subject: Traffic Analysis for Huasna Road Proposed Oil Exploration and Production Facility with Southerly Private Easement Access, San Luis Obispo County

Dear Ms. Newman:

Orosz Engineering Group, Inc (OEG) is pleased to provide you with the following letter report for the subject project. The scope of the traffic analysis was reviewed with the County of San Luis Obispo. We spoke with Richard Marshall and Glenn Marshall in the Development Review Department at the County of San Luis Obispo Public Works Department to review the scope of the traffic analysis required for this project. The following report was prepared to address the agreed upon scope of work. This revised report also includes information received from Glenn Marshall¹, Development Services Engineer for the Public Works Department and James Kilmer from Caltrans District 5.²

Project Description

Excelaron, LLC is proposing to operate an oil production facility in the Huasna Area of San Luis Obispo County. The access to the project site is from a private driveway westerly of Huasna Townsite Road approximately 1.4 miles from the intersection of Huasna Road and Huasna Townsite Road. There are four phases of the project with varied trip generation characteristics. The four phases are:

- Phase 1 – Access Road and Bridge Improvements (1-week, 7 days)
- Phase 2 - Surface Preparation and Preparation for Re-entry (2-weeks, 5 days per week)
- Phase 3– Re-entry and Drilling Phase (8-weeks, 7 days per week)
- Phase 4 – Production Phase (24-hours per day, 7 days per week)

Excelaron, LLC has redefined the proposed truck haul route in response to community concerns. As originally proposed, all project related traffic would leave the project site turning northwest to Huasna Townsite Road, Huasna Road and continuing on to State Highway 227 through the City of Arroyo Grande then south to Highway 101. The redefined transportation route will exit the project site southeasterly on Huasna Townsite to a private access easement, to Alamo Creek Road, to Highway 166, and ultimately south on Highway 101. The ultimate destination for all tanker truck traffic is now outside San Luis

¹ E-mail correspondence dated May 28th, 2008 and June 11th, 2008. Please refer to "Existing Traffic Volume" section.

² E-mail correspondence dated September 3, 2008.

Obispo County. With the previously proposed access route, the on-going project would generate large truck traffic at a rate of 16 ADT. However, the project will now include smaller haul trucks during the production phase, slightly increasing the number of large truck trips to 24 ADT.

Project Trip Generation

The project trip generation was based on information provided by Excelaron, LLC using the number and types of trucks, employees, and equipment needs for each phase of the project. This information is provided as an attachment to this report. The refined project description includes a more detailed day-to-day operating schedule than previously available.

In summary, the project would generate traffic on the existing road system over time, but with a varied traffic mix. The amount of traffic by Phase and duration is shown in Table 1. As seen in this table, the project would generate a fairly consistent number of average daily trips (ADT) during each project phase (16-30 ADT). The traffic trips listed in Table 1 are one-way trips. For example, one vehicle making a trip to the project site and returning to the project site would result in a total of two (2) ADT. The ADT estimates are based on the detailed information contained in the attachments to this letter. Each project phase has a different vehicle and frequency in the traffic mix. Each vehicle trip was multiplied by two and then by the number of days per week that that vehicle was expected to operate. Then, the daily or weekly totals were averaged to develop the ADT's shown in Table 1. The values shown in Table 1 are separated into typical smaller vehicles and larger multi-axle large truck trips.

Table 1
Average Daily Trip Generation by Vehicle Type and Phase of Project

Vehicle Type	Road and Bridge Improvements (One Week)	Surface Preparation and Re-Entry (Two Weeks)	Production Testing (Two Months)	Production (On-going)
Small Trucks/cars	4 ADT	12 ADT	13 ADT	6 ADT
Larger Trucks	21 ADT	4 ADT	6 ADT	24 ADT
Total ADT	25 ADT	16 ADT	19 ADT	30 ADT

Existing Traffic Volume

In the vicinity of the project, three primary roadways exist – Alamo Creek Road, a private ranch easement to Huasna Townsite Road and Huasna Townsite Road. The basic road section for Alamo Creek Road is two travel lanes with graded dirt shoulders. Roadways of this type can carry 7-10,000 ADT at capacity. The posted speed limit is 35 MPH. The southern end of Alamo Creek Road intersects Highway 166. Between Huasna Townsite Road and Alamo Creek Road, there is a gravel-dirt access road that connects the two through Porter Ranch. The project proposes an easement for the roadway and to stabilize the existing access road to reduce dust and to improve the all-weather access.

Huasna Townsite Road is located approximately 10 miles from Lopez Drive. This road segment is fairly straight with two paved travel lanes (one in each direction) with little or no shoulders. Huasna Townsite Road provides direct access to a number of ranches and home sites. This roadway is considered a local road. Roadways of this type of roadway have capacities ranging from 1,000-5,000 ADT. The Huasna Townsite Road capacity is approximately 3,000 ADT.

Currently, the traffic volumes on Huasna Townsite Road are estimated to be approximately 100-150 ADT based on the number of ranches and home sites located along the road segment. Similarly, Huasna Townsite Road operates at *LOS A* – very good levels of service with no measureable delays.

The traffic volumes along Alamo Creek Road are slightly higher with 180 ADT based on actual counts taken on October 15, 2008. At this volume of traffic, Alamo Creek Road operates at *LOS A* – very good level of service with no measureable delays.

The section of Highway 166 near Alamo Creek Road is constructed with two 12' travel lanes and 2-3 foot wide shoulders. The Alamo Creek Road intersection has a STOP control on the side street only. The most recently published data by Caltrans indicates that this segment of the highway carries 2,450 vehicles per day with 320 vehicles during the peak hour. The resultant level of service is *LOS A*. This section of Highway 166 carries a high (26.5%) amount of truck traffic.

The addition of the project related traffic, ranging between 16 and 30 ADT depending on the phase of development, would not significantly change the existing operation of Huasna Townsite Road, Alamo Creek Road or Highway 166.

Existing Conditions Analysis

A field review of the operation of Huasna Townsite Road, Alamo Creek Road and Highway 166 was conducted by OEG. The County Public Works Department has conducted a Roadway Safety Analysis for the roadways along the path of travel for project trips. The Public Works Department analysis concluded that the roadways do not currently exhibit any areas of concern based on the crash data and crash rates on file with their department.

The project is expected to add between 16 and 30 vehicles per day, depending on the phase of development, to the section of Highway 166 to the west of Alamo Creek Road. During the peak hours, the number of project trips would be at most one or two vehicles.

Highway 166 - Intersection Sight Distance

At the Highway 166 intersection, the corner sight distance that exists is greater than the 7.5 seconds of visibility required. The stopping sight distance available for westbound traffic was measured to be 745 feet. For eastbound traffic, the stopping sight distance available is over 1,000 feet. The 85th percentile speed observed at this intersection was 62.3 or 65 MPH for analysis purposes. The minimum stopping sight distance for 65 MPH is 660 feet and the corner sight distance is 715 feet. Therefore, the Alamo Creek Road intersection has adequate stopping and corner sight distance.

Highway 166 – Crash History and Analysis

Due to concerns expressed by Caltrans for the Highway 166 corridor, a crash analysis was conducted for the area near the intersection of Alamo Creek Road and Highway 166. Based on data provided by Caltrans for the time period between January 1, 2004 and December 31, 2007³, a total of five crashes have occurred in the vicinity of the intersection. Three of the crashes occurred in 2004 and two in 2007. Three of these crashes occurred on weekends. All of the crashes occurred during daylight hours and

³ Refer to attachments for crash history data.

involved motorcycle/passenger cars/pick-up truck type vehicles. Four of the five crashes involved westbound traffic. Four of the five crashes involved a single vehicle. One crash that was a rear-end type crash involved two vehicles (both vehicles were traveling westbound) approaching the intersection to make a right turn. One of the crashes resulted in a fatality; all of the other crashes were property damage only. The fatality crash was not related to the intersection. None of the crashes involved impaired drivers or large trucks.

Highway 166 – Weaving Analysis

Caltrans requested that a weaving analysis be prepared for the truck traffic generated by the proposed project. Based on the minimal number of trucks per day and negligible number of vehicles traveling during the peak hour, the weaving or merging analysis is not meaningful due to the small numbers of vehicles. The amount of westbound traffic during the peak hour is approximately 200 vehicles while the number of project trips projected to turn right during that hour is at most one vehicle (most likely a passenger car or light truck). The weaving analysis for traffic volumes at this level cannot be estimated. Caltrans does estimate the weaving distance to be approximately one foot per weaving vehicle per hour. In this case the total weaving distance would be 201 feet. The project traffic will not significantly impact the operation of traffic along Highway 166.

Recommendations

Based on our review of the existing conditions, the following recommendations for improvements should be considered along Huasna Townsite Road and Alamo Creek Road to improve the operation of the two roadways.

- At the end of Huasna Townsite Road, continue the asphalt paving to the curve that heads toward the bridge.
- Install curve warning signs approximately 150 feet in advance of that curve based on a speed of 25 MPH and the good approach visibility. (Subject to the discretion of the Roads Commissioner⁴)
- Add object markers to the four corners of the bridge near the southern end of Huasna Townsite Road. (Subject to the discretion of the Roads Commissioner⁵)

⁴ Should the Roads Commissioner and ultimately the County Board of Supervisors not approve the installation of the recommended signs, the project impacts would not change. The sign installation was only a recommendation, not a requirement for mitigation of project impacts.

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For the Highway 166 intersection with Alamo Creek Road, the following recommendations for improvements should be considered:

- Based on the direction of travel of project traffic (to the west of the intersection) and the crash history (primarily westbound traffic mis-judging the curve east of the intersection), widening the shoulder for a distance of 700 feet on both sides of the highway to the west of the intersection would bring the section of highway near the intersection, that project traffic would utilize, to a standard section. The wider paved shoulder will provide additional pavement width to allow motorists additional room to maneuver through this area. To the west of the intersection, there is a pull-off area for westbound traffic. The wider shoulder would provide additional space for vehicles to weave and merge into the flow of westbound traffic on Highway 166.

The crash history does not indicate a pattern that left turn channelization should be considered to remedy to cause of the crashes. The crash pattern indicates that passenger vehicles travel too fast around the curve of the roadway or do not allow adequate space between vehicles (rear-end type crash). The majority of the crashes involved only one vehicle that hit the guardrail, dike, adjacent tree or sign post.

- Install advance guide signs (Type G-8) for eastbound and westbound indicating the name of the cross street "Alamo Creek Road". Other cross streets in the area have advance intersection ahead warning signs. These proposed signs will assist in increasing the visibility of the intersection. These signs would need to be reviewed and approved by Caltrans. Should Caltrans not approve the installation of the recommended signs, the project impacts would not change. The sign installation was only a recommendation for existing conditions, not a requirement for mitigation of specific project impacts.

Summary

The proposed project would be expected to add 16-25 ADT to the existing traffic volumes along Huasna Townsite Road and Alamo Creek Road during the first month of operation. In the subsequent 2-3 months, the project would be expected to add 19 ADT. If the exploration phase of the project provides successful results, the project would be expected to have an on-going traffic volume count of about 30 ADT. This traffic volume is roughly equivalent to three single family ranch estate residences.

Based on the forecast traffic volumes for the project, the project would not be expected to significantly impact the operation of Huasna Townsite Road and Alamo Creek Road. Some minor enhancements to the existing signage along Huasna Townsite Road are recommended, along with minor road widening along Highway 166 to improve the merging of project traffic.

Due to the small number of large trucks anticipated with the project, both in the near term and long term, the impacts of the proposed project can be mitigated with the incorporation of the noted recommendations.