

# APPENDIX G

Estimated Emission Reductions

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–Appendix G–

## **Statewide Emission Reductions Anticipated Upon Full Implementation of Healy Model 900 Assist Nozzles Equipped with Enhanced ORVR-Vehicle Recognition Spout Assembly**

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The purpose of this document is to explain the methodology, assumptions, and calculations used to estimate statewide emission reductions anticipated upon full implementation of Healy Model 900 Assist Nozzle with Enhanced ORVR-Recognition (EOR) spout assembly. In order to convey pertinent information in a clear and concise manner, this document is organized into five sections. References to related technical support documents and supporting data are provided at the end of this document.

### **I. DEVELOPMENT EOR SPOUT ASSEMBLY**

In September of 2015, in response to the ORVR Recognition Study [CARB, 2017a], Franklin Fueling Systems (the original equipment manufacturer of the Assist Phase II EVR system) developed a prototype spout assembly called “Enhanced ORVR-Vehicle Recognition” designed for use with the Healy 900 nozzle. The EOR spout assembly is equipped with a more pronounced latch ring and a slightly shorter interlock rod within the vapor bellows, which helps improve the seal between the nozzle spout assembly and vehicle fill pipe during fueling events.

### **II. COLLECTION OF UST PRESSURE DATA AT GDFs EQUIPPED WITH EOR SPOUT ASSEMBLIES**

During the winter of 2016/2017<sup>1</sup>, CARB staff, with the assistance of FFS product engineers and members of the California Air Pollution Control Officers Association (CAPCOA), evaluated the performance of the EOR spout assembly installed at six retail GDFs (EOR Nozzle Study) [CARB, 2018b]. Although each facility varied in location, monthly throughput, and operating characteristics, all six had previously exhibited a severe form of overpressure called “pressure increase while dispensing” or PWD based upon review of underground storage tank pressure data captured by the In-Station Diagnostic (ISD) system years prior. In addition, these six GDFs had a high frequency of ISD overpressure alarms occurring in 2013, 2014 and 2015.

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<sup>1</sup> For the purpose of this appendix, winter is defined as November 1 through February 28, which is the time of year at which the Reid Vapor Pressure (RVP) of gasoline is uncontrolled. This is also commonly referred to as the time frame in which “winter blend gasoline” is distributed

As part of the EOR Study, CARB staff installed a data acquisition system at each GDF, which continuously recorded gauge pressure within the headspace of the underground storage tanks (UST) and continuously captured individual fueling transactions including volume of gasoline dispensed and volume of vapor returned, which is used to determine the site average “vapor to liquid” ratio. The installation of a data acquisition system was necessary because the amount of UST pressure data available from the ISD system is limited to 30 hours. With the data acquisition system, CARB staff was able to collect data for 24 hours a day, seven days a week, for months at a time.

In addition to EOR spout assembly installation, routine maintenance was performed at each facility to ensure proper baseline operating conditions as recommended in the Installation Maintenance and Operational Manual (IOM) associated with the Assist System<sup>2</sup> Executive Order VR-202. Upon installation of the EOR nozzle, CARB staff adjusted the nozzle V/L to a range of 0.95–1.05, ensured that dispenser integrity was achieved, and ensured that fuel-dispensing rates were maintained between 6 and 10 gallons per minute. If any equipment was found out of compliance, repairs were made and the component was re-tested until passing result was achieved.

### **III. COLLECTION OF BASELINE UST PRESSURE DATA AT GDFs EQUIPPED WITH NON-EOR SPOUT ASSEMBLIES**

Throughout the winters<sup>3</sup> of 2013/2014, 2014/2015, and 2015/2016, CARB staff collected UST pressure data at eight GDFs equipped with the non-EOR version of the Healy spout assembly [CARB, 2017c]. Well before the development of the EOR spout assembly, these data were collected at non-EOR equipped GDFs to establish baseline conditions and to determine statewide winter, summer, and annual reactive organic gas (ROG) emission factors associated with overpressure conditions (PWD Emission Study). Collection of UST pressure enables CARB staff to determine the magnitude of pressure driven emissions by calculating fugitive and vent line volume emissions. With the later development of the EOR spout assembly, data collected at GDFs with

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<sup>2</sup> As indicated in the Assist System IOM, the following vapor recovery nozzle items are required on annual basis or upon installation of new equipment:

1. Perform Exhibit 5 and adjust the V/L ratio setting of each EOR nozzle between 0.95 and 1.05. Per Exhibit 2 of Executive Order VR-202, the allowable V/L range of the nozzle is 0.95 to 1.15
2. Perform dispenser vapor line integrity testing according to Section 8 of the IOM for the assist system.
3. Ensure that the gasoline dispensing rate at each nozzle is maintained between 6.0 and 10 gallons per minute per Exhibit 2 of the assist system Executive Order.
4. Conduct TP-201.1E to determine that the pressure vacuum (P/V) vent valve is operating within the appropriate leak rate and cracking pressure ranges.

<sup>3</sup> For the purpose of this appendix, winter is defined as November 1 through February 28, which is the time of year when the Reid Vapor Pressure (RVP) of gasoline is uncontrolled. This is also commonly the time during which “winter blend gasoline” is distributed.

non-EOR spout assemblies provide an important baseline/benchmark to compare to the EOR nozzle performance.

Similar to the EOR Nozzle Study, the PWD Emission Study involved installation of a data acquisition system at each GDF, which continuously recorded gauge pressure within the headspace of the underground storage tanks and continuously captured individual fueling transactions including volume of gasoline dispensed and volume of vapor returned, which were used to determine vapor to liquid ratios.

Because four of the eight facilities exhibited PWD throughout the monitoring period [CARB, 2017c], CARB staff was able to develop emission factors, expressed as pounds per thousand gallons dispensed which can be used to estimate statewide emissions if the volume of gasoline dispensed under such conditions is known. As indicated in Table G-1, the average emission factor for PWD GDFs was 1.37 lbs/1000 gallons. For further details on the development of this emission factor, see section III of the PWD Emission Study.

**Table G-1: PWD Emission Factors from Non-EOR Equipped GDFs**

<b>GDF Description</b>	<b>Duration of Data Analysis</b>	<b>PWD Observed</b>	<b>Winter Pressure Driven Emission Factor (lbs/kgal)</b>
Pomona, CA	Winter 2013/2014 Winter 2014/2015	Yes	1.44
Carson, CA	Winter 2013/2014 Winter 2015/2016	Yes	2.25
San Diego, CA	Winter 2014/2015 Winter 2015/2016	Yes	1.38
San Diego, CA	Winter 2014/2015 Winter 2015/2016	Yes	0.39
<b>4 GDF average</b>			<b>1.37</b>

#### **IV. METHODOLOGY**

To quantify emission reductions, CARB staff compared UST pressure data collected at GDFs equipped with non-EOR spout assemblies (baseline data) and GDFs equipped with EOR spout assemblies. For each GDF, for each week for which UST pressure data were available, the percentage of time greater than 1.3 inches water column ("WC) was calculated. As previously stated in Section III, baseline UST pressure data were captured from four non-EOR spout assembly equipped GDFs, which were monitored over the course of two winters (2013/2014 to 2015/2016). UST pressure data from the EOR equipped GDFs were collected at six GDFs during the winter of 2016/2017.

Because UST pressure data were collected at several different GDFs and over different time periods, CARB staff assumed that if the percentage of time greater than 1.3 "WC was greater than 20 percent for the week, then PWD existed during that week. For reference, weekly UST pressure data analysis for each GDF used for this comparison is provided at the end of this document.

In terms of UST pressure data analysis collected at non-EOR equipped GDFs, Table G-2 shows the percentage of weeks that exhibited PWD for each GDF. As indicated in the table below, 64.5 percent of the weekly data exhibited PWD.

In terms of UST pressure data analysis for the EOR equipped GDFs, Table G-3 shows the percentage of weeks that each facility exhibited PWD. For each week for which UST pressure data were available, CARB staff used the same criteria discussed above to determine the presence of PWD. As indicated in the table below, 28.9 percent of the weekly data exhibited PWD.

Upon comparison of the two data sets, PWD was reduced by 55.2 percent due to the installation of the EOR nozzle. In addition to lowering UST pressure, the installation of the EOR spout to the Healy nozzle lowered the average site V/L and improved the ORVR identification rate at the six EOR GDFs by approximately 14 percent [CARB, 2018b]. The reduction in the site V/L and improved ORVR identification rate indicate less air ingestion at the nozzle/fill pipe interface during vehicle refueling. This tighter seal reduces excess air ingestion, which in turn causes less vapor growth in the UST and results in less overall emissions.

**Table G-2**  
**Percentage of Weeks Exhibiting PWD at Four Non-EOR Equipped GDFs**  
 [CARB, 2017c]

<b>GDF Description</b>	<b>Duration of Data Analysis</b>	<b>% of Weeks Exhibiting PWD</b>	<b>Avg % of Time &gt; 1.3"WC for all Weeks</b>
San Diego, CA	Winter 2014/2015 Winter 2015/2016	35.5%	18.7%
San Diego, CA	Winter 2014/2015 Winter 2015/2016	71.0%	40.9%
Carson, CA	Winter 2013/2014 Winter 2015/2016	100.0%	75.6%
Pomona, CA	Winter 2013/2014 Winter 2014/2015	51.6%	35.4%
<b>Average</b>		<b>64.5%</b>	<b>42.6%</b>

**Table G-3  
Percentage of Weeks Exhibiting PWD at Six EOR Equipped GDFs  
[CARB, 2018b]**

<b>GDF Description</b>	<b>Duration of Data Analysis</b>	<b>% of Weeks Exhibiting PWD</b>	<b>Avg % of Time &gt; 1.3"WC for all Weeks</b>
Campbell, CA	Winter 2016/2017	50.0%	33.0%
Gilroy, CA	Winter 2016/2017	31.3%	18.4%
La Habra, CA	Winter 2016/2017	78.6%	34.7%
La Canada-Flintridge, CA	Winter 2016/2017	7.1%	5.1%
Victorville, CA	Winter 2016/2017	0.0%	7.6%
Midway, CA	Winter 2016/2017	6.3%	4.1%
<b>Average</b>		<b>28.9%</b>	<b>17.2%</b>

**V. DEVELOPMENT OF EQUATIONS AND ASSUMPTIONS TO QUANTIFY EMISSIONS**

Once the emission factor was developed for the PWD GDFs and UST pressure data comparison was completed for each data set to determine percent change (55.2 percent reduction with EOR), CARB staff used the formulas shown in Equation 1 and Equation 2 to calculate the statewide winter emission reduction associated with the installation of EOR nozzles.

**Equation 1:**

**Wintertime Emission Calculation for GDFs Equipped with Non-EOR Version of Healy Model 900 Nozzle**

$$\frac{(\text{Winter EF Non-EOR}) * (\text{Winter Gasoline Consumption}) * (\% \text{ Assist GDFs}) * (\% \text{ PWD})}{(\# \text{ of Winter Days} * 2000 \text{ lbs/ton})}$$

*Where:*

Winter EF Non-EOR = Average winter pressure driven emission factor (EF), pounds (lbs) per 1,000 gallons for the four PWD GDFs that were equipped with non-EOR version of the Healy 900 nozzle [CARB, 2017c].

Winter Gasoline Consumption (x 1,000 gallons) = Winter gasoline throughput according to the California Retail Fuel Outlet Annual Report [CEC, 2017a and 2018]. Because the CEC does not report gasoline throughput by month, CARB staff assumed that the monthly throughput remained constant throughout the year.

% Assist GDFs = Percentage of GDFs equipped with the Healy Assist Phase II VRS in California [Appendix I of ISOR].

% PWD = Percentage of GDFs equipped with the Healy Assist Phase VRS in California that exhibited PWD during the ORVR Recognition Study [CARB, 2017d].

# of Winter Days = Total number of days in the winter period (120).

2000 lbs/ton = Conversion factor from pounds to tons.

**Equation 2:**

**Wintertime Emission Calculation for GDFs Equipped with EOR Version of Healy Model 900 Nozzle**

(Winter EF Non-EOR - Winter EF Non-EOR \* % Reduction) \* (Winter Gasoline Consumption) \* (% Assist GDFs) \* (% PWD)

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(# of Winter Days \* 2000 lbs/ton)

*Where:*

Winter EF Non-EOR = Average winter pressure driven emission factor (EF), pounds (lbs) per 1,000 gallons for the four PWD GDFs that were equipped with non-EOR Healy 900 nozzles [CARB, 2017b].

% Reduction = Percent reduction in weeks exhibiting PWD when comparing data from GDFs equipped with original Healy 900 nozzle [CARB, 2017c] to GDFs equipped with Healy 900 nozzle including the EOR spout assembly [CARB, 2018b].

Winter Gasoline Consumption (x 1000 gallons) = Winter gasoline throughput according to the California Retail Fuel Outlet Annual Report [CEC, 2017a and 2018]. Because the CEC does not report gasoline throughput by month, CARB staff assumed that the monthly throughput remained constant throughout the year.

% Assist GDFs = Percentage of GDFs equipped with the Healy Assist Phase II VRS in California [Appendix I of ISOR].



% PWD = Percentage of GDFs equipped with the Healy Assist Phase VRS in California that exhibited PWD during the Extent of Overpressure Study [CARB, 2017d].

# of Winter Days = Total number of days in the winter period (120).

2000 lbs/ton = Conversion factor from pounds to tons.

Note: Equations 1 and 2 assume that the percent of weeks exhibiting PWD is proportional to the PWD emissions. Data analysis from the PWD Emission Study does not fully support this assumption because PWD emissions can vary by week [CARB, 2017c]. However, based on the data available, this is the most accurate estimation technique available since PWD emissions could not be calculated at EOR equipped GDFs because they were not equipped with PV-Zero pressure vacuum vent valves that allow the determination of vent volume emissions.

Table G-4 on the next page provides the assumptions and the results of calculations listed in Equation 1 and Equation 2 used to quantify wintertime emissions at GDFs equipped with non-EOR and EOR spout assemblies. An estimated 5.17 tons per day occur during the winter at non-EOR equipped GDFs that exhibit PWD. An estimated 2.32 tons per day occur during the winter at EOR equipped GDFs.

Table G-5 shows the estimated winter and annual statewide emission reduction due to the implementation of EOR nozzles. In the calculation of the annual statewide emission reduction, CARB staff assumed that summer emissions do not change with the installation of EOR nozzles. Wintertime tons per day (2.32 TPD) is determined by subtracting the results of Equation 2 (2.85) from the results of Equation 1 (5.17 TPD). Year-round emissions are calculated by weighting the summertime and wintertime emission reductions.

Based on the assumptions and calculations presented in this appendix, the estimated statewide ROG emission reduction with full implementation of EOR is approximately 2.85 TPD during the winter and 0.94 TPD annually, which is about 342 tons (684,000 pounds) ROG reduced per year.

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**Table G-4  
Assumptions Used to Estimate Statewide Emissions**

<b>Description</b>	<b>GDFs Equipped with Non-EOR Spout Assemblies (Equation 1)</b>	<b>GDFs Equipped with EOR Spout Assemblies (Equation 2)</b>
Percentage of Weeks GDF Exhibited PWD	64.5%	28.9%
Effectiveness of EOR Nozzle in Reducing PWD (percent reduction)	N/A	55.2%
Wintertime Emission Factor (lbs/kgal)	1.37	0.61
Annual Gasoline Consumption (x 1,000 gallons) in 2016 <sup>4</sup>	15,491,000	15,491,000
Winter time Gasoline Consumption (x 1,000 gallons) in 2016 [=annual consumption*(120/360)]	5,092,932	5,092,932
Percentage of Statewide GDF Population Equipped with Assist Phase II EVR System	52%	52%
Percentage of Statewide Assist Phase II EVR GDF Population Exhibiting PWD	34.2%	34.2%
Wintertime Emissions in Tons Per Day (TPD)	5.17	2.32

**Table G-5  
Estimated Statewide Emission Reduction with Full Implementation of EOR Spout Assemblies**

<b>Description</b>	<b>Tons per Day (TPD)</b>
Estimated Statewide Emission Reduction During Winter (November through February) with Full Implementation of EOR	2.85
Estimated Statewide Emission Reductions Year Round with Full Implementation of EOR	0.94

## VI. REFERENCES

- CARB. 2017a. Healy Model 900 Assist Vapor Recovery Nozzle ORVR Vehicle Recognition Study, Report Number VROP-A3. Overpressure Study Technical Support Document prepared by staff of the Vapor Recovery and Fuel Transfer Branch, Monitoring and Laboratory Division (MLD), California Air Resources Board (CARB). November 29, 2017. (ORVR Recognition Study.) Available at: <https://www.arb.ca.gov/vapor/op/studies/assist/vropa3.pdf>
- CARB. 2017c. Estimate of Pressure Driven Emissions Occurring at GDF Equipped with the Assist Phase II Enhanced Vapor Recovery System, Report Number VR-OP-A6. Overpressure Study Technical Support Document prepared by staff of the Vapor Recovery and Fuel Transfer Branch, MLD, CARB. December 6, 2017. (PWD Emission Study.) Available at: <https://www.arb.ca.gov/vapor/op/studies/assist/vropa6.pdf>
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- CEC. 2017a. 2016 California Annual Retail Fuel Outlet Report Results (CEC-A15). Microsoft Excel file dated October 10, 2017, downloaded from California Energy Commission (CEC) website accessed on April 24, 2018: [http://www.energy.ca.gov/almanac/transportation\\_data/gasoline/piira\\_retail\\_survey.html](http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html)
- CEC. 2018. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results for 2016. California Energy Commission (CEC) website accessed on April 24, 2018: [http://www.energy.ca.gov/almanac/transportation\\_data/gasoline/piira\\_retail\\_survey.html](http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html)

## VII. WEEKLY UST PRESSURE DATA ANALYSIS CONDUCTED ON 10 GDFs

The following ten tables (Tables G-6 through G-15) provide results of UST pressure data analyses for each of the four non-EOR equipped GDFs and six EOR equipped GDFs.

**Table G-6: Weekly UST Pressure Data Analysis for Non-EOR Equipped GDF in San Diego (Site A)**

Site Name	Week Begin	% of Time Above 1.3"WC	PWD Status
San Diego, CA	11/4/2014	0.0%	No
San Diego, CA	11/9/2014	15.0%	No
San Diego, CA	11/16/2014	15.2%	No
San Diego, CA	11/23/2014	17.1%	No
San Diego, CA	11/30/2014	10.4%	No
San Diego, CA	12/7/2014	34.0%	Yes
San Diego, CA	12/14/2014	55.8%	Yes
San Diego, CA	12/21/2014	67.8%	Yes
San Diego, CA	12/28/2014	38.4%	Yes
San Diego, CA	1/4/2015	41.9%	Yes
San Diego, CA	1/11/2015	72.8%	Yes
San Diego, CA	1/18/2015	23.6%	Yes
San Diego, CA	1/25/2015	39.0%	Yes
San Diego, CA	2/1/2015	0.0%	No
San Diego, CA	2/15/2015	3.1%	No
San Diego, CA	2/22/2015	43.0%	Yes
San Diego, CA	11/1/2015	0.0%	No
San Diego, CA	11/8/2015	0.0%	No
San Diego, CA	11/15/2015	0.0%	No
San Diego, CA	11/29/2015	0.0%	No
San Diego, CA	12/6/2015	0.0%	No
San Diego, CA	12/13/2015	28.1%	Yes
San Diego, CA	12/20/2015	47.9%	Yes
San Diego, CA	12/27/2015	16.8%	No
San Diego, CA	1/3/2016	8.1%	No
San Diego, CA	1/10/2016	0.0%	No
San Diego, CA	1/17/2016	0.0%	No
San Diego, CA	1/24/2016	0.0%	No
San Diego, CA	1/31/2016	0.1%	No
San Diego, CA	2/14/2016	0.0%	No
San Diego, CA	2/21/2016	0.0%	No
Average % of Time > 1.3 "WC		18.7%	
% of Weeks Exhibiting PWD		35.5%	

**Table G-7: Weekly UST Pressure Data Analysis for  
Non-EOR Equipped GDF in San Diego (Site B)**

<b>Site Name</b>	<b>Week Begin</b>	<b>% of Time Above 1.3"WC</b>	<b>PWD Status</b>
San Diego, CA	11/2/2014	6.3%	No
San Diego, CA	11/9/2014	53.1%	Yes
San Diego, CA	11/16/2014	60.4%	Yes
San Diego, CA	11/23/2014	27.4%	Yes
San Diego, CA	11/30/2014	23.6%	Yes
San Diego, CA	12/7/2014	70.3%	Yes
San Diego, CA	12/14/2014	46.0%	Yes
San Diego, CA	12/21/2014	17.3%	No
San Diego, CA	12/28/2014	23.6%	Yes
San Diego, CA	1/4/2015	79.4%	Yes
San Diego, CA	1/11/2015	92.1%	Yes
San Diego, CA	1/18/2015	14.9%	No
San Diego, CA	1/25/2015	42.1%	Yes
San Diego, CA	2/1/2015	25.1%	Yes
San Diego, CA	2/8/2015	0.0%	No
San Diego, CA	2/15/2015	13.8%	No
San Diego, CA	2/22/2015	30.8%	Yes
San Diego, CA	11/22/2015	68.7%	Yes
San Diego, CA	11/29/2015	56.8%	Yes
San Diego, CA	12/6/2015	64.8%	Yes
San Diego, CA	12/13/2015	78.8%	Yes
San Diego, CA	12/20/2015	87.3%	Yes
San Diego, CA	12/27/2015	94.1%	Yes
San Diego, CA	1/3/2016	18.8%	No
San Diego, CA	1/10/2016	35.6%	Yes
San Diego, CA	1/17/2016	33.4%	Yes
San Diego, CA	1/24/2016	66.6%	Yes
San Diego, CA	1/31/2016	33.7%	Yes
San Diego, CA	2/7/2016	3.5%	No
San Diego, CA	2/14/2016	0.0%	No
San Diego, CA	2/21/2016	0.0%	No
Average % of Time > 1.3 "WC		40.9%	
% of Weeks Exhibiting PWD		71.0%	

**Table G-8: Weekly UST Pressure Data Analysis for  
Non-EOR Equipped GDF in Carson CA**

<b>Site Name</b>	<b>Week Begin</b>	<b>% of Time Above 1.3"WC</b>	<b>PWD Status</b>
Carson, CA	11/10/2013	21.9%	Yes
Carson, CA	11/17/2013	23.8%	Yes
Carson, CA	11/24/2013	56.7%	Yes
Carson, CA	12/1/2013	96.2%	Yes
Carson, CA	12/8/2013	70.2%	Yes
Carson, CA	12/15/2013	85.3%	Yes
Carson, CA	12/22/2013	92.7%	Yes
Carson, CA	12/29/2013	82.3%	Yes
Carson, CA	1/5/2014	89.5%	Yes
Carson, CA	1/12/2014	89.9%	Yes
Carson, CA	1/19/2014	99.2%	Yes
Carson, CA	1/26/2014	84.0%	Yes
Carson, CA	2/2/2014	94.4%	Yes
Carson, CA	2/9/2014	98.3%	Yes
Carson, CA	2/16/2014	93.1%	Yes
Carson, CA	2/23/2014	92.9%	Yes
Carson, CA	11/1/2015	37.5%	Yes
Carson, CA	11/15/2015	88.9%	Yes
Carson, CA	11/22/2015	89.9%	Yes
Carson, CA	11/29/2015	88.4%	Yes
Carson, CA	12/6/2015	87.3%	Yes
Carson, CA	12/13/2015	73.4%	Yes
Carson, CA	12/20/2015	60.2%	Yes
Carson, CA	12/27/2015	73.2%	Yes
Carson, CA	1/3/2016	45.0%	Yes
Carson, CA	1/10/2016	37.5%	Yes
Carson, CA	1/17/2016	59.2%	Yes
Carson, CA	1/24/2016	81.0%	Yes
Carson, CA	1/31/2016	56.3%	Yes
Carson, CA	2/7/2016	87.5%	Yes
Carson, CA	2/14/2016	93.6%	Yes
Carson, CA	2/21/2016	88.9%	Yes
Average % of Time > 1.3 "WC		75.6%	
% of Weeks Exhibiting PWD		100.0%	

**Table G-9: Weekly UST Pressure Data Analysis for  
Non-EOR Equipped GDF in Pomona, CA**

<b>Site Name</b>	<b>Week Begin</b>	<b>% of Time Above 1.3"WC</b>	<b>PWD Status</b>
Pomona, CA	11/10/2013	43.5%	Yes
Pomona, CA	11/17/2013	0.0%	No
Pomona, CA	11/24/2013	50.6%	Yes
Pomona, CA	12/1/2013	19.9%	No
Pomona, CA	12/8/2013	62.8%	Yes
Pomona, CA	12/15/2013	98.9%	Yes
Pomona, CA	12/22/2013	95.1%	Yes
Pomona, CA	12/29/2013	77.2%	Yes
Pomona, CA	1/5/2014	74.7%	Yes
Pomona, CA	1/12/2014	94.8%	Yes
Pomona, CA	1/19/2014	40.6%	Yes
Pomona, CA	1/26/2014	72.9%	Yes
Pomona, CA	2/2/2014	78.0%	Yes
Pomona, CA	2/9/2014	13.0%	No
Pomona, CA	2/16/2014	24.8%	Yes
Pomona, CA	2/23/2014	7.7%	No
Pomona, CA	11/2/2014	24.9%	Yes
Pomona, CA	11/9/2014	7.0%	No
Pomona, CA	11/16/2014	17.0%	No
Pomona, CA	11/23/2014	4.2%	No
Pomona, CA	11/30/2014	0.0%	No
Pomona, CA	12/7/2014	41.1%	Yes
Pomona, CA	12/14/2014	49.0%	Yes
Pomona, CA	12/21/2014	44.1%	Yes
Pomona, CA	12/28/2014	37.7%	Yes
Pomona, CA	1/4/2015	18.3%	No
Pomona, CA	1/11/2015	16.4%	No
Pomona, CA	1/18/2015	12.5%	No
Pomona, CA	1/25/2015	14.9%	No
Pomona, CA	2/1/2015	16.9%	No
Pomona, CA	2/8/2015	5.3%	No
Pomona, CA	2/15/2015	6.0%	No
Pomona, CA	2/22/2015	0.0%	No
Average % of Time > 1.3 "WC		35.4%	
% of Weeks Exhibiting PWD		51.6%	

**Table G-10: Weekly UST Pressure Data Analysis for  
EOR Equipped GDF in Campbell**

<b>Campbell</b>		<b>EOR Installed - 2/25/2016</b>	
<b>Site Name</b>	<b>Week Begin</b>	<b>% of Time UST Pressure &gt; 1.3" WC</b>	<b>PWD Status</b>
Campbell, CA	11/6/2016	27.0%	Yes
Campbell, CA	11/13/2016	80.0%	Yes
Campbell, CA	11/20/2016	68.9%	Yes
Campbell, CA	11/27/2016	65.7%	Yes
Campbell, CA	12/4/2016	46.3%	Yes
Campbell, CA	12/11/2016	76.5%	Yes
Campbell, CA	12/18/2016	79.7%	Yes
Campbell, CA	12/25/2016	71.6%	Yes
Campbell, CA	1/1/2017	4.0%	No
Campbell, CA	1/8/2017	3.7%	No
Campbell, CA	1/15/2017	3.7%	No
Campbell, CA	1/22/2017	0.1%	No
Campbell, CA	1/29/2017	0.0%	No
Campbell, CA	2/5/2017	0.0%	No
Campbell, CA	2/12/2017	0.0%	No
Campbell, CA	2/19/2017	0.0%	No
% of weeks exhibiting PWD		50.0%	
Average % of Time > 1.3 "WC		32.9%	



**Table G-11: Weekly UST Pressure Data Analysis for  
EOR Equipped GDF in Gilroy**

<b>Gilroy</b>		<b>EOR Installed - 2/25/2016</b>	
<b>Site Name</b>	<b>Week Begin</b>	<b>% of Time UST Pressure &gt; 1.3" WC</b>	<b>PWD Status</b>
Gilroy, CA	11/6/2016	41.7%	Yes
Gilroy, CA	11/13/2016	57.9%	Yes
Gilroy, CA	11/20/2016	38.9%	Yes
Gilroy, CA	11/27/2016	13.8%	No
Gilroy, CA	12/4/2016	35.1%	Yes
Gilroy, CA	12/11/2016	31.3%	Yes
Gilroy, CA	12/18/2016	12.1%	No
Gilroy, CA	12/25/2016	19.9%	No
Gilroy, CA	1/1/2017	7.2%	No
Gilroy, CA	1/8/2017	11.5%	No
Gilroy, CA	1/15/2017	7.5%	No
Gilroy, CA	1/22/2017	0.0%	No
Gilroy, CA	1/29/2017	16.5%	No
Gilroy, CA	2/5/2017	0.6%	No
Gilroy, CA	2/12/2017	0.6%	No
Gilroy, CA	2/19/2017	0.0%	No
% of weeks exhibiting PWD		31.3%	
Average % of Time > 1.3 "WC		18.4%	

**Table G-12: Weekly UST Pressure Data Analysis for  
EOR Equipped GDF in La Habra**

La Habra		EOR Installed - 11/15/2016	
Site Name	Week Begin	% of Time UST Pressure > 1.3" WC	PWD Status
La Habra, CA	11/6/2016	N.A.	N.A.
La Habra, CA	11/13/2016	N.A.	N.A.
La Habra, CA	11/20/2016	85.4%	Yes
La Habra, CA	11/27/2016	58.8%	Yes
La Habra, CA	12/4/2016	51.4%	Yes
La Habra, CA	12/11/2016	60.3%	Yes
La Habra, CA	12/18/2016	36.1%	Yes
La Habra, CA	12/25/2016	28.1%	Yes
La Habra, CA	1/1/2017	27.0%	Yes
La Habra, CA	1/8/2017	45.5%	Yes
La Habra, CA	1/15/2017	21.4%	Yes
La Habra, CA	1/22/2017	0.2%	No
La Habra, CA	1/29/2017	0.0%	No
La Habra, CA	2/5/2017	35.3%	Yes
La Habra, CA	2/12/2017	36.9%	Yes
La Habra, CA	2/19/2017	0.0%	No
% of weeks exhibiting PWD		78.6%	
Average % of Time > 1.3 "WC		34.7%	

**Table G-13: Weekly UST Pressure Data Analysis for  
EOR Equipped GDF in La Canada**

La Canada		EOR Installed - 11/16/2016	
Site Name	Week Begin	% of Time UST Pressure > 1.3" WC	PWD Status
La Canada, CA	11/6/2016	N.A.	N.A.
La Canada, CA	11/13/2016	N.A.	N.A.
La Canada, CA	11/20/2016	0.0%	No
La Canada, CA	11/27/2016	0.2%	No
La Canada, CA	12/4/2016	0.5%	No
La Canada, CA	12/11/2016	38.9%	Yes
La Canada, CA	12/18/2016	19.1%	No
La Canada, CA	12/25/2016	0.1%	No
La Canada, CA	1/1/2017	0.2%	No
La Canada, CA	1/8/2017	6.4%	No
La Canada, CA	1/15/2017	0.0%	No
La Canada, CA	1/22/2017	0.0%	No
La Canada, CA	1/29/2017	0.4%	No
La Canada, CA	2/5/2017	6.2%	No
La Canada, CA	2/12/2017	0.0%	No
La Canada, CA	2/19/2017	0.0%	No
% of weeks exhibiting PWD		7.1%	
Average % of Time > 1.3 "WC		5.1%	

**Table G-14: Weekly UST Pressure Data Analysis for  
EOR Equipped GDF in Victorville**

Victorville		EOR Installed - 12/13/2016	
Site Name	Week Begin	% of Time UST Pressure > 1.3" WC	PWD Status
Victorville, CA	11/6/2016	N.A.	N.A.
Victorville, CA	11/13/2016	N.A.	N.A.
Victorville, CA	11/20/2016	N.A.	N.A.
Victorville, CA	11/27/2016	N.A.	N.A.
Victorville, CA	12/4/2016	N.A.	N.A.
Victorville, CA	12/11/2016	N.A.	N.A.
Victorville, CA	12/18/2016	12.1%	No
Victorville, CA	12/25/2016	19.9%	No
Victorville, CA	1/1/2017	7.2%	No
Victorville, CA	1/8/2017	11.5%	No
Victorville, CA	1/15/2017	7.5%	No
Victorville, CA	1/22/2017	0.0%	No
Victorville, CA	1/29/2017	16.5%	No
Victorville, CA	2/5/2017	0.6%	No
Victorville, CA	2/12/2017	0.6%	No
Victorville, CA	2/19/2017	0.0%	No
% of weeks exhibiting PWD		0.0%	
Average % of Time > 1.3 "WC		7.6%	

**Table G-15: Weekly UST Pressure Data Analysis for  
EOR Equipped GDF in Midway**

Midway		EOR Installed - 1/25/2016	
Site Name	Week Begin	% of Time UST Pressure > 1.3" WC	PWD Status
Midway, CA	11/6/2016	0.0%	No
Midway, CA	11/13/2016	0.0%	No
Midway, CA	11/20/2016	0.0%	No
Midway, CA	11/27/2016	0.0%	No
Midway, CA	12/4/2016	0.0%	No
Midway, CA	12/11/2016	0.0%	No
Midway, CA	12/18/2016	0.0%	No
Midway, CA	12/25/2016	0.0%	No
Midway, CA	1/1/2017	0.0%	No
Midway, CA	1/8/2017	0.0%	No
Midway, CA	1/15/2017	0.0%	No
Midway, CA	1/22/2017	18.9%	No
Midway, CA	1/29/2017	16.8%	No
Midway, CA	2/5/2017	28.2%	Yes
Midway, CA	2/12/2017	2.1%	No
Midway, CA	2/19/2017	0.0%	No
% of weeks exhibiting PWD		6.3%	
Average % of Time > 1.3 "WC		4.1%	