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ERC/PUBLIC NOTICE CHECK LIST

PROJECT #s: S-1113860 Facility S-1329

REQST. COMPL.

- | | |
|---------------------|---|
| <u> </u> <u> </u> | ERC TRANSFER OF PREVIOUSLY BANKED CREDITS |
| <u>√</u> <u> </u> | ERC PRELIMINARY PUBLIC NOTICE |
| <u> </u> <u> </u> | ERC FINAL PUBLIC NOTICE |
-

Date Completed November 21, 2011/By Allan Phillips

- √ Newspaper Notice Emailed to Clerical (Check box and tab to generate Notice)
- √ Send email to "OA-PublicNotices" containing the following:
SUBJECT: facility name, facility id#, project #, type of notice (prelim/final)
BODY: project description and why it is being noticed (based on Major Source, Major Modification, Title V Minor Mod, Title V Significant Mod, Initial Title V, Title V renewal, or ATC with COC)

ENCLOSED DOCUMENTS REQUIRE:

- Enter Correct Date, Print All Documents from File and Obtain Directors Signature
- √ Mail **PRELIMINARY** Notice Letter to Applicant with the following attachments:
 - √ Application Evaluation
 - √ Other Public Notice
- √ Email **PRELIMINARY** Public Notice for Publication to Bakersfield Californian
- √ Email **PRELIMINARY** Public Notice package to EPA and CARB
- √ Email **PRELIMINARY** Public Notice package to "webmaster"
- √ Send **PRELIMINARY** Public Notice package to: Kris Rickards

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Cristina Montoya
SAN JOAQUIN VALLEY AIR POLL
CONTROL DIST
1990 E. GETTYSBURG AVE.
FRESNO, CA 93726

COPY OF NOTICE

Notice Type: GPN GOVT PUBLIC NOTICE
Ad Description Pre Hunter Edison Oil Development S-1113860 CM

To the right is a copy of the notice you sent to us for publication in the THE BAKERSFIELD CALIFORNIAN. Please read this notice carefully and call us with any corrections. The Proof of Publication will be filed with the County Clerk, if required, and mailed to you after the last date below. Publication date(s) for this notice is (are):

12/19/2011

CNS 2226371

NOTICE OF PRELIMINARY DECISION FOR THE PROPOSED ISSUANCE OF EMISSION REDUCTION CREDITS

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Emission Reduction Credits to Hunter Edison Oil Development for the installation of vapor control on several tanks previously equipped with PV vents, at the Hershey Lease within Hunter Edison Oil Development's Heavy Oil Central Stationary Source in Kern County. The quantity of ERCs proposed for banking is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256 lb-VOC; 3rd quarter, 2,234 lb-VOC; and 4th quarter, 2,282 lb-VOC.

The analysis of the regulatory basis for this proposed action, Project #S-1113860, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.
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State - Zip	CA - 93726		

Product Information

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Order Information

Attention Name	Cristina Montoya	Billing Reference No.	32
Ad Description	Pre Hunter Edlson Oil Development S-1113860 CM	Sale/Hrg/Bid Date	12/19/2011

Special Instructions Please email copy of notice: cristina.montoya@valleyair.org

Orders Created

Order No.	Newspaper Name	Publishing Dates	Ad	Price	Ad Status
2226371	THE BAKERSFIELD CALIFORNIAN, CA	12/19/2011	Depth : 4.10" Lines : 50	Pricing will be done by DJC	Sent

Order No.	Newspaper	View
2226371	THE BAKERSFIELD CALIFORNIAN	View Ad In PDF

NOTICE OF PRELIMINARY DECISION FOR THE PROPOSED ISSUANCE OF EMISSION REDUCTION CREDITS

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Cristina Montoya

From: glenda_sobrique@dailyjournal.com
Sent: Wednesday, December 14, 2011 8:53 AM
To: Cristina Montoya
Subject: Confirmation of Order 2226371 for Pre Hunter Edison Oil Development S-1113860 CM

Dear Customer:

The order listed below has been received and processed. If you have any questions regarding this order, please contact your ad coordinator or the phone number listed below.

Customer Account Number: 137878

Type of Notice : GPN - GOVT PUBLIC NOTICE

Ad Description : Pre Hunter Edison Oil Development S-1113860 CM

Our Order Number : 2226371

Newspaper : THE BAKERSFIELD CALIFORNIAN

Publication Date(s) : 12/19/2011

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Cristina Montoya

From: Cristina Montoya
Sent: Wednesday, December 14, 2011 1:02 PM
To: Gerardo Rios (SJV_T5_Permits@epamail.epa.gov); Mike Tollstrup (mtollstr@arb.ca.gov)
Subject: Preliminary Public Notice for Hunter Edison Oil Development Facility S-1329 Project S-1113860
Attachments: Public Notice Package.pdf; Newspaper Notice.pdf
Importance: High

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Emission Reduction Credits to Hunter Edison Oil Development for the installation of vapor control on several tanks previously equipped with PV vents, at the Hershey Lease within Hunter Edison Oil Development's Heavy Oil Central Stationary Source in Kern County. The quantity of ERCs proposed for banking is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256 lb-VOC; 3rd quarter, 2,234 lb-VOC; and 4th quarter, 2,282 lb-VOC.

*Cristina Montoya
Senior Office Assistant
San Joaquin Valley APCD
1990 E. Gettysburg Ave
Fresno, CA 93726
Phone: 559-230-6002
Fax: 559-230-6061
cristina.montoya@valleyair.org*


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Cristina Montoya

From: Postmaster
Sent: Wednesday, December 14, 2011 1:02 PM
To: Cristina Montoya
Subject: Delivery Status Notification (Relay)
Attachments: ATT14174.txt; Preliminary Public Notice for Hunter Edison Oil Development Facility S-1329 Project S-1113860

This is an automatically generated Delivery Status Notification.

Your message has been successfully relayed to the following recipients, but the requested delivery status notifications may not be generated by the destination.

mtollstr@arb.ca.gov

Cristina Montoya

From: Mail Delivery System <MAILER-DAEMON@mseive01.rtp.epa.gov>
Sent: Wednesday, December 14, 2011 1:02 PM
To: Cristina Montoya
Subject: Successful Mail Delivery Report
Attachments: Delivery report; Message Headers

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The mail system

<SVJ_T5_Permits@epamail.epa.gov>: delivery via 127.0.0.1[127.0.0.1]:10025: 250
OK, sent 4EE90ED7_20539_26937_2 424034457D

Cristina Montoya

From: Cristina Montoya
Sent: Wednesday, December 14, 2011 1:15 PM
To: WebMaster
Subject: valleyair.org update: Preliminary Public Notice for Hunter Edison Oil Development Facility S-1329 Project S-1113860

December 14, 2011 (Facility S-1329 Project S-1113860) NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Emission Reduction Credits to Hunter Edison Oil Development for the installation of vapor control on several tanks previously equipped with PV vents, at the Hershey Lease within Hunter Edison Oil Development's Heavy Oil Central Stationary Source in Kern County. The quantity of ERCs proposed for banking is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256 lb-VOC; 3rd quarter, 2,234 lb-VOC; and 4th quarter, 2,282 lb-VOC.

[Newspaper Notice](#)

[Public Notice Package](#)



DEC 14 2011

Seth Hunter
Hunter Edison Oil Development
15545 Hermosa Road
Bakersfield, CA 93307

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: S-1113860

Dear Mr. Hunter:

Enclosed for your review and comment is the District's analysis of Hunter Edison Oil Development's application for Emission Reduction Credits (ERCs) resulting from the installation of vapor control on several tanks previously equipped with PV vents, at the Hershey Lease within Hunter Edison Oil Development's Heavy Oil Central Stationary Source in Kern County. The quantity of ERCs proposed for banking is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256 lb-VOC; 3rd quarter, 2,234 lb-VOC; and 4th quarter, 2,282 lb-VOC.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Kris Rickards of Permit Services at (661)392-5611.

Sincerely,

David Warner
Director of Permit Services

DW: KTR/cm

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585



DEC 14 2011

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: S-1113860

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Hunter Edison Oil Development's application for Emission Reduction Credits (ERCs) resulting from the installation of vapor control on several tanks previously equipped with PV vents, at the Hershey Lease within Hunter Edison Oil Development's Heavy Oil Central Stationary Source in Kern County. The quantity of ERCs proposed for banking is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256 lb-VOC; 3rd quarter, 2,234 lb-VOC; and 4th quarter, 2,282 lb-VOC.

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David Warner
Director of Permit Services

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Tel: 661-392-5500 FAX: 661-392-5585



DEC 14 2011

Gerardo C. Rios (AIR 3)
Chief, Permits Office
Air Division
U.S. E.P.A. - Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: S-1113860

Dear Mr. Rios:

Enclosed for your review and comment is the District's analysis of Hunter Edison Oil Development's application for Emission Reduction Credits (ERCs) resulting from the installation of vapor control on several tanks previously equipped with PV vents, at the Hershey Lease within Hunter Edison Oil Development's Heavy Oil Central Stationary Source in Kern County. The quantity of ERCs proposed for banking is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256 lb-VOC; 3rd quarter, 2,234 lb-VOC; and 4th quarter, 2,282 lb-VOC.

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Sincerely,

David Warner
Director of Permit Services

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**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
EMISSION REDUCTION CREDITS**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Emission Reduction Credits to Hunter Edison Oil Development for the installation of vapor control on several tanks previously equipped with PV vents, at the Hershey Lease within Hunter Edison Oil Development's Heavy Oil Central Stationary Source in Kern County. The quantity of ERCs proposed for banking is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256 lb-VOC; 3rd quarter, 2,234 lb-VOC; and 4th quarter, 2,282 lb-VOC.

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San Joaquin Valley Air Pollution Control District
ERC Application Review
Installation of Vapor Recovery on Fixed Roof Tanks

Facility Name: Hunter Edison Oil Development
Mailing Address: 15545 Hermosa Road
Bakersfield, CA 93307

Date: November 18, 2011
Engineer: Kris Rickards
Lead Engineer: Allan Phillips

Contact Person: Seth Hunter Nick Diercks (Consultant)
Telephone: 661-363-7240 661-377-0073 x13

Project #: S-1113860
Submitted: August 22, 2011
Deemed Complete: September 19, 2011

I. Summary

Hunter Edison Oil Development (hereafter referred to as Hunter) submitted an application to bank emission reduction credits (ERCs) for the decrease in VOC emissions resulting from the installation of a vapor recovery and control system on crude oil tanks listed on permits S-1329-6, '-7, '-8, '-10, '-11, '-12, and '-31. Installation of the control system was authorized under ATCs S-1329-6-2, '-7-2, '-8-2, '-10-2, '-11-2, '-12-2, and '-31-2. These ATCs were implemented March 28, 2011.

An application for ERC's was filed on August 22, 2011, i.e. within 180 days following the start-up of the vapor control system pursuant to Rule 2301, "Emission Reduction Credit Banking", Section 4.2.3.

The following reductions have been found to qualify for an emission reduction banking certificate (see calculations that follow).

Bankable Emissions Reductions Credits (lb/Quarter)					
	NO _x	SO _x	PM10	CO	VOC
1st Quarter	0	0	0	0	2,186
2nd Quarter	0	0	0	0	2,256
3rd Quarter	0	0	0	0	2,234
4th Quarter	0	0	0	0	2,282

II. Applicable Rules

- Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2301 Emission Reduction Credit Banking (12/17/92)
Rule 4623 Storage of Organic Liquids (5/19/05)

III. Location of Reduction

The tanks are located on the Hershey Lease within Hunter's Heavy Oil Central Stationary Source in the SE ¼ of Section 14, Township 30S, Range 29E. Oil production from multiple leases are sent to tanks at this battery (see Appendix B for lease names and throughputs)

IV. Method of Generating Reductions

Actual Emissions Reductions (AER) were generated by the voluntary addition of vapor control to four storage tanks. The installation was authorized by the ATCs listed below, which were issued on December 8, 2010. Installation of the ATCs was verified by the District on March 28, 2011.

The following are the implemented ATCs to validate the reduction (see Appendix E):

- S-1329-6-2: MODIFICATION OF 1,600 BBL (67,200 GALLON) FIXED ROOF "HOT" WASH TANK - HERSHEY LEASE: INSTALL VAPOR CONTROL SYSTEM WITH COMPRESSOR, SEPARATOR AND SCRUBBER SHARED WITH S-1329-6, '-7, '-8, '-10, '-11, '12 AND '-31 .
- S-1329-7-2: MODIFICATION OF 1,600 BBL (67,200 GALLON) FIXED ROOF WASH TANK - HERSHEY LEASE: CONNECT TO VAPOR CONTROL SYSTEM LISTED ON S-1329-6
- S-1329-8-2: MODIFICATION OF 1,600 BBL (67,200 GALLON) FIXED ROOF SHIPPING TANK #3983 - HERSHEY LEASE: CONNECT TO VAPOR CONTROL SYSTEM LISTED ON S-1329-6
- S-1329-10-2: MODIFICATION OF 1,600 BBL (67,200 GALLON) FIXED ROOF SHIPPING TANK #7620 - HERSHEY LEASE: CONNECT TO VAPOR CONTROL SYSTEM LISTED ON S-1329-6
- S-1329-11-2: MODIFICATION OF 1,600 BBL (67,200 GALLON) FIXED ROOF SHIPPING TANK #3981 - HERSHEY LEASE: CONNECT TO VAPOR CONTROL SYSTEM LISTED ON S-1329-6
- S-1329-12-2: MODIFICATION OF 1,600 BBL (67,200 GALLON) FIXED ROOF SHIPPING TANK #3982 - HERSHEY LEASE: CONNECT TO VAPOR CONTROL SYSTEM LISTED ON S-1329-6
- S-1329-31-2: MODIFICATION OF 2,400 BBL (100,800 GALLON) FIXED ROOF CRUDE OIL STORAGE TANK WITH PV VALVE - HERSHEY LEASE: INSTALL VAPOR CONTROL SHARED LISTED ON PERMIT S-1329-6

As required by Rules 2201 and 2301, creditable emission reductions are to be based upon the storage tanks' operating history over the appropriate baseline period, and the use of acceptable emission factors

V. Calculations

A. Assumptions

- Vapor pressure of crude oil by HOST method is 0.26 psi (laboratory results - Appendix A).
- Historical oil throughputs of the tanks are from DOGGR records (Appendix B).
- Baseline period was based on historical oil throughput using consecutive 8 quarters within the last 5 years of operation (Q1-2009 to Q4-2010, Appendix C)
- Historical crude oil tank emissions are based on the results from the District's spreadsheet for Tank Emissions - Fixed Roof Crude Oil less than 26° API located in Appendix C. The spreadsheet for tanks was developed using the equations for fixed-roof tanks from EPA AP-42, Chapter 7.1.
- Tanks S-1329-6, '-7, and '-31 were operated as constant level wash tanks. Emissions from these tanks had "standing loss" emissions only. Oil separated from the wash tanks were processed in tanks S-1329-8, '-10, '-11, and '-12. Production was assumed to be split evenly between wash tanks.
- Fugitive emissions from the tanks served by vapor recovery are estimated based on component counts provided by Hunter in Project S-1104565 and the emission factors from "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities" Table IV-2c - Oil and Gas Production Screening Value Ranges Emission Factors. The fugitive component counts and emissions calculations are included as Appendix D.

B. Baseline Period Determination

Per Section 3.9 of Rule 2201, Baseline Period is defined as:

1. The two consecutive years of operation immediately prior to the submission date of the complete application; or
2. At least two consecutive years within the five years immediately prior to the submission date of the complete application if determined by the APCO as more representative of *normal source operation (NSO)*; or
3. A shorter period of at least one year if the emissions unit has not been in operation for two years and this represents the full operational history of the emissions unit, including any replacement units; or
4. Zero years if an emissions unit has been in operation for less than one year (only for use when calculating Actual Emissions Reductions (AER)).

Rule 2301 titled "Emissions Reduction Credit Banking" defines Baseline Period as "the same period as defined in Rule 2201".

The application requesting ERCs for vapor recovery installed on these tanks was received in 2011. The applicant has requested to use the two consecutive years of operation immediately prior to the submission of the application (vapor control was started up during the 1st quarter of 2011). Therefore the baseline period is the two-year period from January 2009 through December 2010 (1st calendar quarter 2009 through the 4th calendar quarter 2010).

Average quarterly throughputs (bbl/qtr) for the baseline period are shown below (see Appendix C for detailed throughput):

	1 st Quarter Average	2 nd Quarter Average	3 rd Quarter Average	4 th Quarter Average
S-1329-6	23,050	23,892	23,479	24,171
S-1329-7	23,050	23,892	23,479	24,171
S-1329-8	5,071	5,256	5,166	5,318
S-1329-10	6,223	6,451	6,340	6,526
S-1329-11	6,454	6,690	6,574	6,768
S-1329-12	5,302	5,495	5,400	5,559
S-1329-31	23,050	23,892	23,479	24,171

C. Historical Actual Emissions (HAE)

The historical emissions were calculated using the District's spreadsheet for Tank Emissions - Fixed Roof Crude Oil less than 26° API as shown in Appendix C and summarized below:

Quarterly Historical Actual Emissions** (lb-VOC/qtr)				
	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
S-1329-6	52	53	53	53
S-1329-7	52	53	53	53
S-1329-8	561	578	573	584
S-1329-10	651	671	664	679
S-1329-11	669	690	682	698
S-1329-12	579	596	591	603
S-1329-31	52	53	53	53
Total	2,616	2,694	2,669	2,723

** The quarterly historical emissions were based on calculated annual emissions and adjusted using quarterly historical throughputs (see detailed throughput in Appendix C).

E. Adjustments to HAE

1. Rule 2201 - New and Modified Stationary Source Review Rule

Pursuant to Section 3.22, Historical Actual Emissions must be discounted for any emissions reduction which is:

- Required or encumbered by any laws, rules, regulations, agreements, orders, or
 - Attributed to a control measure noticed for workshop, or proposed or contained in a State Implementation Plan, or
 - Proposed in the District Air Quality Plan for attaining the annual reductions required by the California Clean Air Act.
 - Any Actual Emissions in excess of those required or encumbered by any laws, rules, regulations, orders, or permits. For units covered by a Specific Limiting Condition (SLC), the total overall HAE for all units covered by the SLC must be discounted for any emissions in excess of that allowed by the SLC.
- a. There are no agreements or orders regarding the operation or emissions reductions associated with these tanks. Discounts for any rules will be discussed under the applicable rules listed below. Therefore, no adjustments will be made to the HAE under this section.
 - b. There are no reductions from these tanks that are attributed to a control measure noticed for workshop, or proposed or contained in a State Implementation Plan. Therefore, no adjustment to the HAE will be made in this section.
 - c. There are no reductions for tanks proposed in the District Air Quality Plan for attaining the annual reductions required by the California Clean Air Act. Therefore, no adjustments will be made to the HAE under this section.
 - c. There are no SLCs related to the operation of these tanks. The emissions were taken from the actual throughput records. Any adjustments to be made for any Rules will be addressed under the applicable Rules listed below. Therefore, no adjustments will be made to the HAE under this section.

The tanks have undergone permitting under Rule 2201 and the permits comply with all NSR requirements. No adjustments to the HAE are required under Rule 2201.

2. Rule 4623 – Storage of Organic Liquids

The purpose of this rule is to limit volatile organic compound (VOC) emissions from the storage of organic liquids.

Section 4.4 exempts tanks storing organic liquid with a TVP less than 0.5 psia from all provisions of Rule 4623 except recordkeeping and testing.

These tanks exclusively stored organic liquid below a TVP of 0.5 psia (vapor recovery was not required), in compliance with this rule; therefore, no adjustment is necessary for Rule 4623.

6. Actual Emissions Reductions (AER)

Since no adjustments have been made to the HAE, the AER is calculated pursuant to Section 3.2 of Rule 2201 where the AER shall be real, surplus, permanent, quantifiable and enforceable. The AER is calculated per subsection 4.12 as follows:

$$\text{AER} = \text{HAE} - \text{PE2}$$

Where: HAE = Historic Actual Emissions
PE2 = Post-Project Potential to Emit

VOC emissions have been reduced by the addition of vapor control shared by the tanks. The post-project potential to emit (PE2) is calculated based on component counts and the emission factors from "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities" Table IV-2c - Oil and Gas Production Screening Value Ranges Emission Factors as shown in Appendix D and summarized in the table below.

Post-Project Potential to Emit (lb-VOC/qtr)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul-Sep)	Q4 (Oct-Dec)
S-1329-6*	85	85	85	85
S-1329-7	42	42	42	42
S-1329-8	12	12	12	12
S-1329-10	12	12	12	12
S-1329-11	12	12	12	12
S-1329-12	12	12	12	12
S-1329-31	12	12	12	12
Total PE2	187	187	187	187

*Tank emissions include fugitive components from the vapor recovery systems compressor, scrubber, and separator (see Appendix D)

The AER is calculated below using the equation: $\text{AER} = \text{HAE} - \text{PE2}$

Actual Emission Reduction (lb-VOC/qtr)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul-Sep)	Q4 (Oct-Dec)
HAE	2,616	2,694	2,669	2,723
PE2	187	187	187	187
AER	2,429	2,507	2,482	2,536

7. Air Quality Improvement Deduction (AQID)

Pursuant to Rule 2201 Section 3.6, the AQID is a 10% discount factor applied to AER before the AER is eligible for banking.

The AER is adjusted for the AQID in the following table.

Air Quality Improvement Deduction (lb-VOC/qtr)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul –Sep)	Q4 (Oct-Dec)
AER	2,429	2,507	2,482	2,536
AQID	243	251	248	254

8. Increase in Permitted Emissions (IPE)

All tanks equipped with PV vents at the Hershey Lease have been equipped with vapor control. Therefore, there is no increase in emissions associated with this project, and no adjustment to the HAE for IPE purposes is necessary.

9. Bankable Emissions Reduction Credits

To obtain the bankable emissions, the AQID is subtracted from the AER as shown below:

Air Quality Improvement Deduction (lb-VOC/qtr)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul –Sep)	Q4 (Oct-Dec)
AER	2,429	2,507	2,482	2,536
AQID	243	251	248	254
Bankable Reductions	2,186	2,256	2,234	2,282

VI. Compliance

Rule 2201 - New and Modified Stationary Source Review Rule

To comply with the definition of AER (Section 3.2.1), the reductions must be real, enforceable, quantifiable, permanent, and surplus.

A. Real

The emissions reductions were generated by the installation of a vapor control system on tanks previously equipped with a PV vent only. The emissions reductions were calculated from actual historic data and recognized emission factors. Authorities to Construct for these units have been implemented and inspected by the District. Therefore, the emission reductions are real.

B. Enforceable

Operation of the installed vapor control equipment is enforceable through the associated permit and subject to annual inspections. Therefore, the reductions are enforceable.

C. Quantifiable

The reductions are quantifiable since they were calculated from historic production records, established and accepted emission factors, permitted limits, and methods according to District Rule 2201. Therefore, the reductions are quantifiable and have been quantified.

D. Permanent

The implemented ATCs have emission limits and conditions requiring the tanks to operate with a vapor control system. Therefore, the reductions are considered permanent.

E. Surplus

To be considered surplus, AER shall be in excess, at the time the application for an Emission Reduction Credit is deemed complete, of any emissions reduction which:

- Is required or encumbered by any laws, rules, regulations, agreements, orders, or
- Is attributed to a control measure noticed for workshop, or proposed or contained in a State Implementation Plan, or
- Is proposed in the adopted air quality plan pursuant to the California Clean Air Act.

As discussed in Section V.F.1 above, there are no rules, regulations, plans, etc., that would serve to reduce the HAE. Therefore the reductions are surplus.

F. Not used for the Approval of an Authority to Construct or as Offsets

The emission reduction credits generated by the installation of a vapor recovery system have not been used for the approval of any Authority to Construct or as offsets or mitigation. The ATCs have been implemented, inspected and converted to Permits to Operate (PTO).

Rule 2301 – Emission Reduction Banking

Section 5.5 states that ERC certificate applications shall be submitted within 180 days after the emission reduction occurs. The installation was authorized by ATCs S-5395-2-3, -3-3, -4-1 and -5-3, which were issued on December 8, 2010. Installation of the ATCs was verified by the District on March 28, 2011. The application for ERCs was received on August 22, 2011 within the 180 day timeframe allowed. Therefore, the application was submitted in a timely fashion.

Copies of the PTOs for these units are included in Appendix E.

VII. Recommendation

Issue an ERC Certificate in the amounts posted in the table below and on the Draft ERC Certificate in Appendix F.

Bankable Emissions Reductions Credits (lb/Quarter)					
	NO_x	SO_x	PM10	CO	VOC
1st Quarter	0	0	0	0	2,186
2nd Quarter	0	0	0	0	2,256
3rd Quarter	0	0	0	0	2,234
4th Quarter	0	0	0	0	2,282

List of Appendices

- A: Crude Oil Vapor Pressure Analysis
- B: 2009 and 2010 Oil Throughput (DOGGR Records)
- C: Historical Actual Emissions Calculations
- D: Post Project Potential to Emit Calculations
- E: Permits to Operate
- F: Draft Emission Reduction Credit Certificate

Appendix A

Crude Oil Vapor Pressure Analysis

**ZALCO LABORATORIES, INC.**

Analytical and Consulting Services

4309 Armour Avenue
Bakersfield, California 93308(661) 396-0539
FAX (661) 396-3069

CLIENT: Vaquero Energy Inc
Lab Order: 0907365
Project:
Client Sample ID: Hershey Wash Tank
Report Comment: Tank Temp 90

Report Date: 8/19/2009
Lab ID: 0907365-001A
Collection Date: 7/15/2009 8:00:00 AM
Matrix: PETROLEUM

Analyses	Method	Result	Units	Date Analyzed	Qual.
API GRAVITY BY ASTM D287 (HYDROMETER)					
API Gravity @ 60 F, Hydrometer	D287	16.1	60F	8/10/2009	
HOST - VAPOR PRESS. OF ROCS BY GC (LBNL)					
HOST Vapor Pres. of ROCs	HOST/LBNL	0.26	Psi	8/8/2009	
Tank Temp.	HOST/LBNL	90	F	8/8/2009	
Test Temp.	HOST/LBNL	91.0	F	8/8/2009	
Test Barometric Pres.	HOST/LBNL	29.52	In. of Hg	8/6/2009	
Test Atmospheric Pres.	HOST/LBNL	14.51	Psla	8/8/2009	

Qualifiers / Abbreviations:
 ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 H - Hold Time Exceeded

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 DLR: Detection Limit for Reporting
 NSS - Non-Sufficient Sample Amount

Appendix B

2009 and 2010 Oil Throughput (DOGGR Records)

Number of Well
Types:

24 Well Types Having
Production:

13 Well Types Having
Injection:

11

Field: Edison

Lease: Annie M. Dougherty

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	285	1,674	0	296
07/2011	275	1,202	0	279
06/2011	248	1,172	0	261
05/2011	203	947	0	223
04/2011	221	924	0	244
03/2011	289	1,182	0	279
02/2011	225	1,192	0	252
01/2011	230	1,353	0	279
Total 2011	1,976	9,646	0	2,113
12/2010	239	1,321	0	279
11/2010	242	1,230	0	270
10/2010	256	1,194	0	279
09/2010	273	1,141	0	270
08/2010	244	1,209	0	279
07/2010	265	1,191	0	279
06/2010	273	1,126	0	270
05/2010	280	1,192	0	279
04/2010	233	1,115	0	270
03/2010	305	1,213	0	279
02/2010	271	1,240	0	252
01/2010	280	1,243	0	279
Total 2010	3,161	14,415	0	3,285
12/2009	267	1,347	0	279
11/2009	266	1,298	0	270
10/2009	275	1,300	0	273
09/2009	267	1,426	0	270
08/2009	262	1,589	0	278
07/2009	255	1,502	0	276
06/2009	258	1,487	0	270
05/2009	261	1,580	0	279
04/2009	255	1,594	0	270
03/2009	283	1,548	0	278
02/2009	232	1,238	0	252
01/2009	187	855	0	144
Total 2009	3,068	16,764	0	3,139
12/2008	176	1,197	0	242
11/2008	264	1,439	0	270
10/2008	296	1,494	0	279
09/2008	320	2,398	0	270
08/2008	333	2,221	0	279
07/2008	299	2,478	0	275
06/2008	239	1,866	0	251
05/2008	243	1,934	0	279
04/2008	248	1,784	0	270
03/2008	287	1,971	0	279
02/2008	271	1,585	0	256
01/2008	269	1,877	0	278
Total 2008	3,245	22,244	0	3,228
12/2007	319	1,789	0	279
11/2007	264	1,766	0	270

Number of Well Types: 3 Well Types Having Production: 2 Well Types Having Injection: 0

Field: Edison

Lease: Cauley-Aera

▼Date▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	10	260	0	7
07/2011	32	793	0	21
06/2011	58	1,163	0	60
05/2011	61	963	0	59
04/2011	29	559	0	46
03/2011	237	1,091	0	62
02/2011	3	125	0	11
01/2011	7	10	0	31
Total 2011	437	4,964	0	297
12/2010	10	62	0	7
11/2010	42	1,194	0	38
10/2010	0	28	0	31
09/2010	1	26	0	30
08/2010	0	10	0	11
07/2010	1	25	0	6
06/2010	1	26	0	30
05/2010	53	667	0	62
04/2010	142	612	0	60
03/2010	109	599	0	39
02/2010	78	589	0	28
01/2010	65	590	0	31
Total 2010	502	4,428	0	373
12/2009	66	640	0	31
11/2009	69	616	0	30
10/2009	77	633	0	31
09/2009	70	959	0	30
08/2009	74	977	0	31
07/2009	84	932	0	31
06/2009	71	913	0	30
05/2009	81	970	0	31
04/2009	106	959	0	30
03/2009	93	1,356	0	31
02/2009	57	886	0	23
01/2009	53	838	0	18
Total 2009	901	10,679	0	347
12/2008	141	1,193	0	56
11/2008	66	598	0	19
10/2008	115	1,302	0	31
09/2008	116	1,310	0	30
08/2008	112	1,213	0	31
07/2008	99	784	0	12
06/2008	160	662	0	33
05/2008	239	991	0	56
04/2008	273	956	0	60
03/2008	322	1,101	0	59
02/2008	299	987	0	48
01/2008	280	1,243	0	62
Total 2008	2,222	12,340	0	497
12/2007	335	1,682	0	62
11/2007	300	1,602	0	52
10/2007	419	2,753	0	60

Number of Well
Types:19 Well Types Having
Production:10 Well Types Having
Injection:

8

Field: Edison

Lease: Citizens

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	803	7,618	0	278
07/2011	775	7,384	0	276
06/2011	678	4,957	0	246
05/2011	626	3,792	0	229
04/2011	813	3,846	0	236
03/2011	936	4,013	0	248
02/2011	555	3,493	0	224
01/2011	611	3,954	0	248
Total 2011	5,797	39,057	0	1,985
12/2010	696	4,073	0	248
11/2010	803	3,794	0	240
10/2010	958	4,087	0	248
09/2010	934	3,904	0	240
08/2010	1,159	4,133	0	248
07/2010	1,094	3,645	0	248
06/2010	1,591	3,949	0	234
05/2010	1,730	4,170	0	248
04/2010	1,513	5,611	0	234
03/2010	1,659	6,115	0	234
02/2010	1,523	8,387	0	211
01/2010	618	5,147	0	200
Total 2010	14,278	57,015	0	2,833
12/2009	715	7,000	0	248
11/2009	887	2,191	0	206
10/2009	623	2,990	0	217
09/2009	569	2,516	0	210
08/2009	575	2,624	0	217
07/2009	435	1,999	0	210
06/2009	491	2,277	0	210
05/2009	404	2,941	0	217
04/2009	475	3,018	0	210
03/2009	433	2,538	0	192
02/2009	434	2,283	0	196
01/2009	319	1,541	0	112
Total 2009	6,360	33,918	0	2,445
12/2008	325	2,129	0	184
11/2008	475	2,633	0	210
10/2008	568	2,747	0	217
09/2008	466	3,934	0	210
08/2008	486	3,645	0	217
07/2008	461	4,157	0	217
06/2008	407	3,866	0	208
05/2008	426	4,298	0	217
04/2008	490	4,158	0	210
03/2008	542	4,835	0	217
02/2008	546	4,203	0	189
01/2008	706	4,103	0	214
Total 2008	5,898	44,708	0	2,510
12/2007	808	4,221	0	195
11/2007	648	4,382	0	199

Number of Well Types: 17 Well Types Having Production: 9 Well Types Having Injection: 8

Field: Edison

Lease: Clare

▼Date▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	134	1,346	0	62
07/2011	198	1,827	0	62
06/2011	128	628	0	31
05/2011	252	1,011	0	61
04/2011	290	1,008	0	60
03/2011	337	1,219	0	62
02/2011	149	3,634	0	56
01/2011	164	4,115	0	62
Total 2011	1,652	14,788	0	456
12/2010	178	4,012	0	62
11/2010	205	3,735	0	60
10/2010	208	3,838	0	62
09/2010	203	3,664	0	60
08/2010	251	3,878	0	62
07/2010	61	3,146	0	37
06/2010	272	778	0	57
05/2010	342	854	0	62
04/2010	301	1,142	0	60
03/2010	413	1,126	0	62
02/2010	1,092	973	0	56
01/2010	1,031	871	0	58
Total 2010	4,557	28,017	0	698
12/2009	898	1,800	0	62
11/2009	1,267	3,356	0	60
10/2009	391	2,198	0	43
09/2009	538	1,039	0	56
08/2009	607	1,178	0	62
07/2009	469	947	0	62
06/2009	452	799	0	60
05/2009	391	696	0	62
04/2009	482	486	0	60
03/2009	551	576	0	62
02/2009	573	474	0	56
01/2009	395	274	0	32
Total 2009	7,014	13,823	0	677
12/2008	343	364	0	57
11/2008	230	408	0	46
10/2008	117	281	0	31
09/2008	108	295	0	30
08/2008	112	273	0	31
07/2008	107	312	0	31
06/2008	95	290	0	30
05/2008	99	322	0	31
04/2008	111	307	0	30
03/2008	123	357	0	31
02/2008	118	323	0	29
01/2008	165	380	0	31
Total 2008	1,728	3,912	0	408
12/2007	211	426	0	31
11/2007	163	421	0	30
10/2007	211	461	0	31

Number of Well Types: 3 Well Types Having Production: 3 Well Types Having Injection: 0

Field: Edison

Lease: Clinton Land Co.

▼Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	47	681	0	31
07/2011	45	700	0	31
06/2011	43	674	0	30
05/2011	53	631	0	31
04/2011	31	440	0	22
03/2011	30	636	0	31
02/2011	20	362	0	19
01/2011	34	583	0	31
Total 2011	303	4,707	0	226
12/2010	36	578	0	31
11/2010	40	597	0	30
10/2010	38	586	0	31
09/2010	45	553	0	30
08/2010	40	585	0	31
07/2010	42	575	0	31
06/2010	42	550	0	30
05/2010	42	565	0	31
04/2010	37	533	0	30
03/2010	8	78	0	11
02/2010	0	0	0	0
01/2010	2	21	0	3
Total 2010	372	5,221	0	289
12/2009	20	236	0	31
11/2009	20	229	0	30
10/2009	19	236	0	31
09/2009	18	224	0	30
08/2009	18	228	0	31
07/2009	17	218	0	31
06/2009	52	473	0	30
05/2009	105	1,288	0	55
04/2009	110	1,443	0	57
03/2009	118	1,507	0	62
02/2009	117	1,190	0	55
01/2009	68	441	0	17
Total 2009	682	7,713	0	460
12/2008	87	1,207	0	54
11/2008	117	1,424	0	59
10/2008	97	1,803	0	62
09/2008	104	1,951	0	60
08/2008	81	1,688	0	62
07/2008	109	1,912	0	62
06/2008	97	1,855	0	60
05/2008	60	1,027	0	42
04/2008	99	1,796	0	60
03/2008	124	1,912	0	62
02/2008	169	2,207	0	58
01/2008	166	2,498	0	62
Total 2008	1,310	21,280	0	703
12/2007	72	947	0	44
11/2007	87	1,411	0	58
10/2007	168	1,943	0	62

Number of Well
Types:119 Well Types Having
Production:64 Well Types Having
Injection:

53

Field: Edison

Lease: Corp. Fee

▼Date▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	6,385	38,620	0	1,551
07/2011	5,202	39,585	0	1,536
06/2011	4,487	34,606	0	1,467
05/2011	3,701	29,441	0	1,374
04/2011	4,541	23,778	0	1,330
03/2011	4,688	23,908	0	1,392
02/2011	3,738	20,057	0	1,281
01/2011	3,668	23,769	0	1,386
Total 2011	36,410	233,764	0	11,317
12/2010	3,727	25,042	0	1,374
11/2010	3,251	26,637	0	1,336
10/2010	3,580	27,940	0	1,387
09/2010	3,513	27,774	0	1,285
08/2010	3,789	24,573	0	1,336
07/2010	3,827	24,964	0	1,393
06/2010	3,633	23,434	0	1,310
05/2010	4,108	24,347	0	1,369
04/2010	2,881	23,299	0	1,319
03/2010	2,821	23,144	0	1,352
02/2010	3,424	24,998	0	1,238
01/2010	3,418	24,645	0	1,395
Total 2010	41,972	300,797	0	16,094
12/2009	3,701	23,900	0	1,353
11/2009	3,921	24,322	0	1,327
10/2009	3,999	26,252	0	1,383
09/2009	4,039	29,766	0	1,341
08/2009	4,034	30,465	0	1,377
07/2009	4,094	29,361	0	1,395
06/2009	4,012	28,025	0	1,344
05/2009	3,823	27,281	0	1,370
04/2009	3,485	25,562	0	1,320
03/2009	4,223	26,621	0	1,392
02/2009	2,538	23,326	0	1,234
01/2009	3,464	19,698	0	771
Total 2009	45,333	314,579	0	15,607
12/2008	2,008	26,584	0	1,195
11/2008	3,535	27,479	0	1,277
10/2008	4,283	29,751	0	1,284
09/2008	3,577	29,797	0	1,161
08/2008	4,097	27,501	0	1,231
07/2008	3,844	30,192	0	1,237
06/2008	3,356	27,344	0	1,210
05/2008	4,077	28,955	0	1,256
04/2008	4,115	29,272	0	1,216
03/2008	3,770	30,800	0	1,199
02/2008	3,389	30,015	0	1,125
01/2008	3,750	28,258	0	1,129
Total 2008	43,801	345,948	0	14,520
12/2007	3,645	30,266	0	1,172
11/2007	3,569	30,202	0	1,154

Number of Well
Types:

124 Well Types Having
Production:

63 Well Types Having
Injection:

56

Field: Edison

Lease: Duff-Shell

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	3,431	39,896	0	1,515
07/2011	3,168	40,778	0	1,482
06/2011	3,927	45,146	0	1,459
05/2011	4,764	38,348	0	1,465
04/2011	3,421	33,755	0	1,416
03/2011	2,354	33,812	0	1,471
02/2011	2,419	30,302	0	1,372
01/2011	2,707	35,824	0	1,498
Total 2011	26,191	297,861	0	11,678
12/2010	2,891	35,521	0	1,492
11/2010	3,105	31,375	0	1,420
10/2010	3,557	35,717	0	1,517
09/2010	4,084	33,116	0	1,444
08/2010	3,828	36,127	0	1,469
07/2010	3,503	32,804	0	1,492
06/2010	3,703	32,333	0	1,460
05/2010	3,657	35,895	0	1,507
04/2010	3,118	31,750	0	1,462
03/2010	4,399	34,676	0	1,512
02/2010	3,237	40,193	0	1,360
01/2010	4,853	35,342	0	1,514
Total 2010	43,935	414,849	0	17,649
12/2009	5,090	41,384	0	1,513
11/2009	5,123	38,527	0	1,426
10/2009	3,632	36,150	0	1,477
09/2009	3,766	35,524	0	1,470
08/2009	4,009	37,048	0	1,512
07/2009	4,010	35,290	0	1,501
06/2009	4,328	37,198	0	1,477
05/2009	4,477	41,243	0	1,507
04/2009	4,187	42,396	0	1,465
03/2009	4,309	41,541	0	1,512
02/2009	4,300	30,904	0	1,369
01/2009	3,359	14,497	0	485
Total 2009	50,590	431,702	0	16,714
12/2008	3,633	32,326	0	1,252
11/2008	3,731	31,578	0	1,321
10/2008	3,957	33,831	0	1,397
09/2008	4,553	34,979	0	1,315
08/2008	3,386	29,780	0	1,301
07/2008	5,299	36,488	0	1,348
06/2008	5,714	41,500	0	1,329
05/2008	5,849	42,409	0	1,323
04/2008	4,997	38,730	0	1,254
03/2008	6,501	37,560	0	1,323
02/2008	5,100	28,127	0	1,234
01/2008	5,262	30,955	0	1,344
Total 2008	57,982	418,263	0	15,741
12/2007	5,859	28,917	0	1,330
11/2007	4,837	29,476	0	1,321

Number of Well Types: 4 Well Types Having Production: 4 Well Types Having Injection: 0

Field: Edison

Lease: Hunter-Brandt

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	91	385	0	93
07/2011	92	332	0	84
06/2011	88	326	0	81
05/2011	108	349	0	93
04/2011	120	340	0	90
03/2011	158	479	0	93
02/2011	138	700	0	84
01/2011	136	792	0	93
Total 2011	931	3,703	0	711
12/2010	148	767	0	92
11/2010	158	702	0	76
10/2010	140	700	0	93
09/2010	121	612	0	86
08/2010	108	653	0	93
07/2010	143	645	0	93
06/2010	153	610	0	90
05/2010	127	646	0	93
04/2010	102	529	0	82
03/2010	82	758	0	93
02/2010	72	774	0	84
01/2010	80	390	0	93
Total 2010	1,434	7,786	0	1,068
12/2009	49	409	0	90
11/2009	53	429	0	90
10/2009	96	442	0	93
09/2009	113	446	0	90
08/2009	111	441	0	89
07/2009	104	427	0	91
06/2009	125	423	0	90
05/2009	125	450	0	93
04/2009	130	446	0	90
03/2009	120	454	0	93
02/2009	108	361	0	84
01/2009	142	281	0	54
Total 2009	1,276	5,009	0	1,047
12/2008	111	409	0	92
11/2008	147	332	0	75
10/2008	156	343	0	79
09/2008	207	445	0	90
08/2008	194	406	0	93
07/2008	177	464	0	93
06/2008	150	426	0	90
05/2008	141	364	0	93
04/2008	160	344	0	90
03/2008	181	400	0	93
02/2008	33	210	0	60
01/2008	32	225	0	62
Total 2008	1,689	4,368	0	1,010
12/2007	30	211	0	62
11/2007	11	113	0	33
10/2007	21	146	0	49

Number of Well Types: 3 Well Types Having Production: 3 Well Types Having Injection: 0

Field: Edison

Lease: Hunter-G. Hay

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	45	1,066	0	40
07/2011	33	741	0	40
06/2011	24	95	0	27
05/2011	18	182	0	31
04/2011	20	178	0	30
03/2011	18	189	0	31
02/2011	11	158	0	28
01/2011	4	50	0	14
Total 2011	173	2,659	0	241
12/2010	5	59	0	17
11/2010	10	101	0	30
10/2010	8	98	0	31
09/2010	9	93	0	30
08/2010	8	99	0	31
07/2010	11	98	0	31
06/2010	11	92	0	30
05/2010	9	98	0	31
04/2010	9	91	0	30
03/2010	20	86	0	31
02/2010	17	88	0	28
01/2010	39	87	0	31
Total 2010	156	1,090	0	351
12/2009	23	91	0	30
11/2009	21	96	0	30
10/2009	38	98	0	31
09/2009	49	105	0	30
08/2009	49	107	0	31
07/2009	45	102	0	31
06/2009	54	100	0	30
05/2009	54	106	0	31
04/2009	57	105	0	30
03/2009	50	102	0	31
02/2009	45	81	0	28
01/2009	59	63	0	18
Total 2009	544	1,156	0	351
12/2008	47	93	0	31
11/2008	69	94	0	30
10/2008	12	13	0	4
09/2008	9	13	0	3
08/2008	10	12	0	4
07/2008	12	17	0	5
06/2008	8	13	0	4
05/2008	8	13	0	4
04/2008	15	18	0	6
03/2008	11	14	0	4
02/2008	9	13	0	4
01/2008	7	47	0	4
Total 2008	217	360	0	103
12/2007	8	55	0	5
11/2007	5	46	0	4
10/2007	16	81	0	6

Number of Well Types: 8 Well Types Having Production: 5 Well Types Having Injection: 3

Field: Edison

Lease: Jane Price, Et Al

▼Date▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	29	2,093	0	31
07/2011	33	2,128	0	31
06/2011	92	2,020	0	28
05/2011	22	4,170	0	31
04/2011	36	977	0	8
03/2011	298	4,086	0	31
02/2011	228	3,420	0	28
01/2011	287	3,215	0	31
Total 2011	1,025	22,109	0	219
12/2010	329	3,221	0	31
11/2010	293	5,463	0	30
10/2010	319	5,285	0	31
09/2010	236	6,317	0	30
08/2010	377	6,690	0	31
07/2010	418	6,482	0	31
06/2010	377	6,154	0	30
05/2010	201	7,116	0	31
04/2010	76	3,676	0	17
03/2010	235	4,778	0	31
02/2010	94	2,405	0	13
01/2010	34	1,756	0	21
Total 2010	2,989	59,343	0	327
12/2009	46	2,822	0	31
11/2009	41	2,776	0	30
10/2009	43	2,854	0	31
09/2009	53	3,868	0	30
08/2009	72	3,942	0	31
07/2009	61	3,759	0	31
06/2009	52	3,684	0	30
05/2009	55	3,916	0	31
04/2009	55	3,869	0	30
03/2009	71	3,800	0	31
02/2009	112	4,209	0	28
01/2009	113	3,090	0	17
Total 2009	774	42,589	0	351
12/2008	69	3,274	0	21
11/2008	38	1,468	0	9
10/2008	65	2,292	0	14
09/2008	27	2,408	0	6
08/2008	106	3,237	0	21
07/2008	101	4,036	0	23
06/2008	105	4,989	0	30
05/2008	113	5,349	0	30
04/2008	112	5,253	0	30
03/2008	60	4,118	0	15
02/2008	58	5,090	0	19
01/2008	35	2,020	0	31
Total 2008	889	43,534	0	249
12/2007	36	1,842	0	31
11/2007	26	1,821	0	30
10/2007	35	2,055	0	31

Number of Well Types: 6 Well Types Having Production: 3 Well Types Having Injection: 3

Field: Edison

Lease: Joe Glumarra, et al

▼Date▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	69	45	0	31
07/2011	54	69	0	24
06/2011	18	23	0	8
05/2011	74	84	0	31
04/2011	82	82	0	30
03/2011	30	140	0	31
02/2011	18	117	0	28
01/2011	18	133	0	31
Total 2011	363	693	0	214
12/2010	20	130	0	31
11/2010	21	121	0	30
10/2010	18	117	0	31
09/2010	33	345	0	30
08/2010	29	365	0	31
07/2010	17	163	0	14
06/2010	40	329	0	29
05/2010	34	361	0	31
04/2010	31	337	0	30
03/2010	33	353	0	31
02/2010	27	335	0	26
01/2010	65	355	0	31
Total 2010	368	3,311	0	345
12/2009	41	386	0	31
11/2009	35	393	0	30
10/2009	54	339	0	26
09/2009	31	384	0	30
08/2009	31	391	0	31
07/2009	29	373	0	31
06/2009	35	366	0	30
05/2009	33	376	0	30
04/2009	36	383	0	30
03/2009	32	375	0	31
02/2009	64	154	0	28
01/2009	144	206	0	31
Total 2009	565	4,126	0	359
12/2008	66	177	0	31
11/2008	98	179	0	30
10/2008	130	180	0	30
09/2008	122	177	0	30
08/2008	107	162	0	29
07/2008	91	172	0	27
06/2008	89	184	0	30
05/2008	92	184	0	31
04/2008	104	174	0	30
03/2008	117	202	0	31
02/2008	33	233	0	29
01/2008	22	171	0	21
Total 2008	1,071	2,195	0	349
12/2007	31	238	0	31
11/2007	26	238	0	30
10/2007	33	346	0	31

Number of Well
Types:159 Well Types Having
Production:79 Well Types Having
Injection:

80

Field: Edison

Lease: John C. Hershey

▼Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	2,256	37,291	0	1,712
07/2011	2,604	37,982	0	1,696
06/2011	2,637	37,927	0	1,602
05/2011	2,091	36,771	0	1,681
04/2011	2,549	37,398	0	1,674
03/2011	2,781	40,295	0	1,720
02/2011	2,470	35,028	0	1,568
01/2011	2,525	39,872	0	1,726
Total 2011	19,913	302,564	0	13,379
12/2010	2,661	39,053	0	1,704
11/2010	2,659	36,679	0	1,672
10/2010	2,958	35,551	0	1,724
09/2010	2,886	33,154	0	1,654
08/2010	2,323	32,739	0	1,520
07/2010	2,251	33,079	0	1,546
06/2010	2,802	33,165	0	1,609
05/2010	2,525	37,165	0	1,694
04/2010	1,914	35,028	0	1,652
03/2010	2,662	35,718	0	1,697
02/2010	2,176	35,924	0	1,510
01/2010	1,929	35,301	0	1,670
Total 2010	29,746	422,556	0	19,652
12/2009	2,156	40,349	0	1,671
11/2009	2,278	37,968	0	1,588
10/2009	2,593	38,897	0	1,641
09/2009	2,467	36,740	0	1,610
08/2009	2,400	38,894	0	1,634
07/2009	2,224	35,195	0	1,626
06/2009	2,329	35,812	0	1,603
05/2009	2,466	39,090	0	1,657
04/2009	2,487	38,678	0	1,601
03/2009	2,555	36,697	0	1,588
02/2009	2,311	30,248	0	1,494
01/2009	2,386	21,684	0	879
Total 2009	28,652	430,252	0	18,592
12/2008	1,373	27,412	0	1,365
11/2008	2,496	31,497	0	1,579
10/2008	2,760	32,870	0	1,622
09/2008	2,713	32,418	0	1,597
08/2008	2,667	31,663	0	1,682
07/2008	2,629	33,666	0	1,611
06/2008	2,302	33,126	0	1,582
05/2008	2,425	35,606	0	1,595
04/2008	2,333	33,947	0	1,559
03/2008	2,508	39,943	0	1,627
02/2008	2,193	36,625	0	1,533
01/2008	2,060	39,832	0	1,626
Total 2008	28,459	408,605	0	18,978
12/2007	2,754	36,288	0	1,680
11/2007	1,959	34,889	0	1,623

Number of Well Types: 15 Well Types Having Production: 8 Well Types Having Injection: 5

Field: Edison

Lease: Leddy-Nichols

▼Date▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	371	3,271	0	124
07/2011	340	3,324	0	124
06/2011	279	2,993	0	114
05/2011	350	3,896	0	124
04/2011	219	4,521	0	120
03/2011	199	4,456	0	117
02/2011	286	3,486	0	112
01/2011	466	3,930	0	124
Total 2011	2,510	29,877	0	959
12/2010	611	4,561	0	124
11/2010	701	5,091	0	120
10/2010	946	4,692	0	119
09/2010	817	3,889	0	106
08/2010	808	4,672	0	119
07/2010	744	3,889	0	106
06/2010	864	5,706	0	113
05/2010	672	1,861	0	92
04/2010	551	1,852	0	119
03/2010	682	2,219	0	124
02/2010	622	2,341	0	112
01/2010	572	2,225	0	122
Total 2010	8,590	42,998	0	1,376
12/2009	636	2,463	0	123
11/2009	505	2,296	0	118
10/2009	603	2,211	0	123
09/2009	699	2,431	0	120
08/2009	445	2,794	0	124
07/2009	476	2,666	0	124
06/2009	414	2,582	0	120
05/2009	252	2,216	0	121
04/2009	187	793	0	120
03/2009	203	762	0	124
02/2009	219	546	0	112
01/2009	196	301	0	52
Total 2009	4,835	22,061	0	1,381
12/2008	148	571	0	116
11/2008	246	618	0	120
10/2008	289	643	0	124
09/2008	261	656	0	120
08/2008	308	688	0	124
07/2008	282	796	0	123
06/2008	405	825	0	120
05/2008	476	753	0	124
04/2008	379	625	0	120
03/2008	360	714	0	123
02/2008	291	826	0	116
01/2008	270	983	0	119
Total 2008	3,715	8,698	0	1,449
12/2007	307	891	0	124
11/2007	248	884	0	119
10/2007	296	922	0	122

Number of Well
Types:79 Well Types Having
Production:45 Well Types Having
Injection:

33

Field: Edison

Lease: McCowan A Fee

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	2,221	14,354	0	620
07/2011	1,925	16,621	0	636
06/2011	1,627	13,782	0	605
05/2011	1,304	12,596	0	650
04/2011	1,553	12,024	0	630
03/2011	1,553	12,228	0	635
02/2011	1,423	10,319	0	569
01/2011	1,706	11,650	0	651
Total 2011	13,312	103,574	0	4,996
12/2010	1,825	11,988	0	647
11/2010	1,520	14,541	0	618
10/2010	1,561	15,011	0	649
09/2010	1,187	14,299	0	630
08/2010	1,529	15,467	0	628
07/2010	1,775	15,251	0	651
06/2010	1,691	14,470	0	623
05/2010	1,804	16,014	0	603
04/2010	1,439	14,610	0	570
03/2010	1,249	15,983	0	619
02/2010	1,317	12,609	0	541
01/2010	1,372	12,397	0	645
Total 2010	18,269	172,640	0	7,424
12/2009	1,540	14,105	0	651
11/2009	1,556	13,969	0	623
10/2009	1,483	12,999	0	640
09/2009	1,161	11,134	0	630
08/2009	1,166	11,347	0	651
07/2009	1,156	10,646	0	646
06/2009	1,096	10,055	0	596
05/2009	1,265	11,027	0	642
04/2009	1,118	10,587	0	621
03/2009	1,379	11,604	0	651
02/2009	1,069	10,465	0	588
01/2009	1,330	7,978	0	349
Total 2009	15,319	135,916	0	7,288
12/2008	835	10,822	0	546
11/2008	1,579	12,923	0	623
10/2008	1,864	12,181	0	617
09/2008	1,156	13,404	0	565
08/2008	1,193	12,376	0	571
07/2008	1,048	11,411	0	572
06/2008	960	10,358	0	548
05/2008	1,099	12,029	0	587
04/2008	1,212	12,553	0	569
03/2008	1,226	13,318	0	586
02/2008	1,033	11,404	0	536
01/2008	1,002	12,425	0	585
Total 2008	14,207	145,204	0	6,905
12/2007	1,074	12,770	0	587
11/2007	946	12,817	0	543

Number of Well
Types:

31 Well Types Having
Production:

18 Well Types Having
Injection:

13

Field: Edison

Lease: McCowan B Fee

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	961	3,857	0	341
07/2011	940	3,900	0	341
06/2011	879	3,893	0	328
05/2011	779	4,091	0	341
04/2011	893	4,200	0	330
03/2011	1,035	4,441	0	320
02/2011	697	3,576	0	267
01/2011	510	3,336	0	295
Total 2011	6,694	31,294	0	2,563
12/2010	862	4,554	0	310
11/2010	749	4,224	0	308
10/2010	947	4,054	0	340
09/2010	642	4,001	0	330
08/2010	632	3,998	0	341
07/2010	611	4,574	0	341
06/2010	596	4,230	0	330
05/2010	611	4,526	0	341
04/2010	519	4,039	0	305
03/2010	700	3,999	0	326
02/2010	781	3,448	0	308
01/2010	796	3,452	0	341
Total 2010	8,446	49,099	0	3,921
12/2009	890	3,777	0	341
11/2009	917	3,741	0	326
10/2009	625	4,049	0	329
09/2009	537	4,436	0	329
08/2009	890	4,573	0	338
07/2009	658	4,030	0	341
06/2009	728	4,062	0	330
05/2009	702	4,068	0	328
04/2009	847	4,144	0	285
03/2009	946	4,718	0	319
02/2009	727	3,837	0	280
01/2009	1,733	3,297	0	176
Total 2009	10,200	48,732	0	3,722
12/2008	740	4,834	0	274
11/2008	900	5,155	0	288
10/2008	987	5,003	0	326
09/2008	575	5,747	0	305
08/2008	1,022	5,305	0	316
07/2008	1,412	6,518	0	336
06/2008	1,405	6,305	0	323
05/2008	2,282	6,101	0	341
04/2008	2,056	6,567	0	330
03/2008	2,836	6,655	0	338
02/2008	2,015	6,732	0	288
01/2008	721	6,967	0	290
Total 2008	16,951	71,889	0	3,755
12/2007	754	16,537	0	261
11/2007	721	17,293	0	288

Number of Well Types: 4 Well Types Having Production: 2 Well Types Having Injection: 2

Field: Edison

Lease: Mobil Fee

▼Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	380	4,224	0	31
07/2011	257	3,906	0	31
06/2011	229	3,843	0	30
05/2011	304	2,457	0	31
04/2011	324	2,396	0	30
03/2011	107	1,358	0	11
02/2011	37	1,001	0	28
01/2011	85	1,217	0	31
Total 2011	1,723	20,402	0	223
12/2010	87	1,190	0	31
11/2010	91	1,108	0	30
10/2010	98	1,076	0	31
09/2010	106	1,027	0	30
08/2010	98	1,087	0	31
07/2010	109	1,073	0	31
06/2010	120	1,215	0	30
05/2010	131	1,245	0	30
04/2010	109	1,202	0	30
03/2010	150	1,309	0	31
02/2010	135	1,337	0	28
01/2010	148	1,340	0	31
Total 2010	1,382	14,209	0	364
12/2009	186	1,629	0	31
11/2009	179	1,746	0	30
10/2009	75	2,261	0	31
09/2009	76	2,152	0	30
08/2009	72	2,410	0	31
07/2009	300	2,329	0	31
06/2009	235	2,333	0	30
05/2009	268	3,582	0	31
04/2009	366	3,943	0	30
03/2009	215	4,348	0	31
02/2009	1	69	0	5
01/2009	26	218	0	13
Total 2009	1,999	27,020	0	324
12/2008	21	374	0	26
11/2008	43	451	0	30
10/2008	54	469	0	31
09/2008	56	456	0	29
08/2008	56	437	0	31
07/2008	40	499	0	31
06/2008	34	468	0	30
05/2008	37	515	0	31
04/2008	35	488	0	30
03/2008	41	567	0	31
02/2008	37	520	0	29
01/2008	41	578	0	31
Total 2008	495	5,819	0	360
12/2007	37	422	0	31
11/2007	22	416	0	30
10/2007	28	466	0	31

Number of Well
Types:30 Well Types Having
Production:16 Well Types Having
Injection:

13

Field: Edison

Lease: Nichols

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	217	2,691	0	306
07/2011	265	2,778	0	310
06/2011	306	2,733	0	300
05/2011	382	2,633	0	310
04/2011	409	2,566	0	300
03/2011	556	2,700	0	310
02/2011	190	2,214	0	280
01/2011	409	2,505	0	310
Total 2011	2,734	20,820	0	2,426
12/2010	380	2,554	0	310
11/2010	396	2,432	0	300
10/2010	730	2,359	0	310
09/2010	838	2,334	0	282
08/2010	1,243	2,699	0	310
07/2010	1,468	2,663	0	310
06/2010	844	1,864	0	280
05/2010	732	2,545	0	307
04/2010	465	2,413	0	295
03/2010	925	3,451	0	300
02/2010	627	2,286	0	279
01/2010	857	2,317	0	310
Total 2010	9,505	29,917	0	3,593
12/2009	752	2,510	0	293
11/2009	709	3,775	0	298
10/2009	802	2,917	0	291
09/2009	650	2,579	0	292
08/2009	691	2,749	0	302
07/2009	738	2,663	0	310
06/2009	615	2,661	0	297
05/2009	705	2,794	0	302
04/2009	619	2,846	0	300
03/2009	694	2,753	0	310
02/2009	378	2,410	0	279
01/2009	154	1,082	0	104
Total 2009	7,507	31,739	0	3,378
12/2008	342	2,525	0	284
11/2008	543	2,794	0	298
10/2008	571	3,210	0	308
09/2008	544	3,242	0	300
08/2008	561	3,001	0	310
07/2008	477	3,948	0	310
06/2008	428	3,716	0	298
05/2008	457	3,903	0	304
04/2008	464	3,784	0	288
03/2008	512	4,429	0	300
02/2008	463	3,532	0	278
01/2008	468	3,573	0	301
Total 2008	5,830	41,657	0	3,579
12/2007	662	2,875	0	306
11/2007	529	2,863	0	299

Number of Well
Types:31 Well Types Having
Production:17 Well Types Having
Injection:

13

Field: Edison

Lease: Ruby Smithwick

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	1,062	8,349	0	341
07/2011	961	7,792	0	341
06/2011	1,010	5,895	0	305
05/2011	855	7,059	0	313
04/2011	911	5,409	0	300
03/2011	928	5,746	0	310
02/2011	663	4,755	0	280
01/2011	1,040	5,619	0	310
Total 2011	7,430	50,624	0	2,500
12/2010	1,156	5,810	0	308
11/2010	907	6,721	0	290
10/2010	1,009	6,659	0	303
09/2010	833	5,695	0	300
08/2010	1,310	6,090	0	310
07/2010	1,233	6,712	0	310
06/2010	1,255	8,141	0	300
05/2010	1,678	9,076	0	310
04/2010	972	7,833	0	298
03/2010	1,495	5,433	0	269
02/2010	425	3,743	0	239
01/2010	543	5,219	0	310
Total 2010	12,816	77,132	0	3,547
12/2009	498	5,679	0	304
11/2009	419	5,583	0	283
10/2009	439	5,737	0	296
09/2009	436	5,687	0	299
08/2009	592	5,843	0	310
07/2009	480	5,569	0	291
06/2009	427	5,458	0	294
05/2009	461	5,983	0	340
04/2009	466	5,914	0	330
03/2009	622	5,830	0	341
02/2009	522	4,966	0	308
01/2009	514	3,625	0	153
Total 2009	5,876	65,874	0	3,549
12/2008	401	4,466	0	237
11/2008	709	6,371	0	292
10/2008	726	6,500	0	300
09/2008	753	5,067	0	310
08/2008	1,118	6,809	0	316
07/2008	1,104	9,457	0	309
06/2008	926	8,231	0	330
05/2008	938	10,161	0	330
04/2008	544	6,500	0	306
03/2008	533	6,960	0	341
02/2008	379	6,354	0	319
01/2008	649	5,234	0	303
Total 2008	8,780	82,110	0	3,693
12/2007	688	5,814	0	323
11/2007	529	6,145	0	330

Number of Well Types: 1 Well Types Having Production: 1 Well Types Having Injection: 0

Field: Edison

Lease: Santa Fe

▼Date▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	151	388	0	31
07/2011	145	398	0	31
06/2011	140	384	0	30
05/2011	171	359	0	31
04/2011	136	342	0	30
03/2011	98	362	0	31
02/2011	96	304	0	28
01/2011	198	365	0	31
Total 2011	1,135	2,902	0	243
12/2010	212	362	0	31
11/2010	155	362	0	30
10/2010	148	355	0	31
09/2010	352	298	0	30
08/2010	310	315	0	31
07/2010	329	309	0	31
06/2010	278	272	0	30
05/2010	43	12	0	12
04/2010	370	953	0	24
03/2010	253	436	0	27
02/2010	215	510	0	28
01/2010	250	480	0	30
Total 2010	2,915	4,664	0	335
12/2009	258	540	0	31
11/2009	260	524	0	30
10/2009	256	539	0	31
09/2009	240	513	0	30
08/2009	144	370	0	31
07/2009	137	354	0	31
06/2009	152	349	0	30
05/2009	153	370	0	31
04/2009	146	364	0	30
03/2009	150	367	0	31
02/2009	150	293	0	28
01/2009	123	155	0	12
Total 2009	2,169	4,738	0	346
12/2008	119	316	0	29
11/2008	155	376	0	30
10/2008	145	383	0	31
09/2008	156	414	0	30
08/2008	122	359	0	31
07/2008	180	404	0	31
06/2008	177	390	0	30
05/2008	178	405	0	31
04/2008	216	479	0	30
03/2008	281	362	0	30
02/2008	261	338	0	29
01/2008	259	381	0	31
Total 2008	2,249	4,607	0	363
12/2007	379	242	0	31
11/2007	315	237	0	30
10/2007	400	261	0	31

Number of Well Types: 6 Well Types Having Production: 3 Well Types Having Injection: 3

Field: Edison

Lease: Surgener

▼Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	164	602	0	29
07/2011	177	654	0	31
06/2011	98	1,337	0	55
05/2011	49	1,113	0	62
04/2011	407	766	0	46
03/2011	204	164	0	33
02/2011	273	241	0	56
01/2011	188	389	0	37
Total 2011	1,560	5,266	0	349
12/2010	207	363	0	31
11/2010	282	319	0	30
10/2010	271	228	0	31
09/2010	386	176	0	30
08/2010	362	187	0	31
07/2010	274	365	0	31
06/2010	330	286	0	30
05/2010	541	184	0	31
04/2010	404	283	0	30
03/2010	516	308	0	31
02/2010	669	153	0	28
01/2010	950	237	0	31
Total 2010	5,192	3,089	0	365
12/2009	349	586	0	22
11/2009	36	32	0	10
10/2009	120	98	0	31
09/2009	32	118	0	30
08/2009	4	95	0	31
07/2009	1	1,458	0	31
06/2009	5	1,048	0	22
05/2009	1	17	0	15
04/2009	2	35	0	21
03/2009	0	0	0	0
02/2009	0	0	0	0
01/2009	0	0	0	0
Total 2009	550	3,487	0	213
12/2008	0	0	0	0
11/2008	0	0	0	0
10/2008	0	0	0	0
09/2008	0	0	0	0
Total 2008	0	0	0	0

Number of Well Types: 1 Well Types Having Production: 1 Well Types Having Injection: 0

Field: Edison

Lease: Teget et al

▼Date▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	70	28	0	29
07/2011	105	30	0	31
06/2011	60	29	0	30
05/2011	75	30	0	31
04/2011	68	29	0	30
03/2011	61	30	0	31
02/2011	64	27	0	28
01/2011	31	30	0	31
Total 2011	534	233	0	241
12/2010	86	31	0	31
11/2010	69	30	0	30
10/2010	60	40	0	31
09/2010	76	38	0	30
08/2010	65	40	0	31
07/2010	71	40	0	31
06/2010	95	38	0	30
05/2010	95	40	0	31
04/2010	99	38	0	30
03/2010	95	40	0	31
02/2010	174	36	0	28
01/2010	12	40	0	31
Total 2010	997	451	0	365
12/2009	113	40	0	31
11/2009	110	39	0	30
10/2009	103	40	0	31
09/2009	110	39	0	30
08/2009	116	40	0	31
07/2009	113	40	0	31
06/2009	100	39	0	30
05/2009	117	40	0	31
04/2009	116	45	0	30
03/2009	141	47	0	31
02/2009	130	45	0	25
01/2009	149	50	0	31
Total 2009	1,418	504	0	362
12/2008	202	50	0	11
11/2008	109	43	0	30
10/2008	42	43	0	31
09/2008	187	42	0	25
08/2008	243	43	0	31
07/2008	169	153	0	31
06/2008	10	17	0	29
05/2008	16	18	0	31
04/2008	15	17	0	30
03/2008	16	18	0	31
02/2008	14	17	0	29
01/2008	16	18	0	31
Total 2008	1,039	479	0	340
12/2007	15	18	0	30
11/2007	12	17	0	30
10/2007	9	18	0	31

Number of Well
Types:59 Well Types Having
Production:33 Well Types Having
Injection:

26

Field: Edison

Lease: Walter Brown

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	818	8,797	0	799
07/2011	834	8,977	0	810
06/2011	710	8,685	0	754
05/2011	678	9,934	0	837
04/2011	785	9,787	0	810
03/2011	860	10,955	0	835
02/2011	1,304	12,404	0	754
01/2011	1,655	13,791	0	832
Total 2011	7,644	83,330	0	6,431
12/2010	1,261	13,382	0	816
11/2010	798	7,483	0	779
10/2010	889	7,852	0	837
09/2010	1,023	7,477	0	802
08/2010	976	7,830	0	775
07/2010	1,075	8,687	0	771
06/2010	993	6,550	0	733
05/2010	1,079	7,011	0	772
04/2010	903	6,554	0	748
03/2010	1,188	7,121	0	771
02/2010	1,019	7,255	0	691
01/2010	1,130	7,283	0	773
Total 2010	12,334	94,485	0	9,268
12/2009	1,047	7,377	0	787
11/2009	1,027	7,657	0	780
10/2009	1,108	7,233	0	775
09/2009	1,014	7,192	0	755
08/2009	975	7,476	0	803
07/2009	962	7,129	0	801
06/2009	1,083	6,986	0	780
05/2009	1,177	6,424	0	778
04/2009	1,154	7,020	0	745
03/2009	1,142	7,855	0	719
02/2009	928	6,203	0	621
01/2009	823	3,265	0	306
Total 2009	12,440	81,817	0	8,650
12/2008	712	6,167	0	669
11/2008	971	6,610	0	722
10/2008	1,292	7,308	0	761
09/2008	1,332	7,706	0	744
08/2008	1,126	7,383	0	726
07/2008	957	10,360	0	758
06/2008	902	8,633	0	740
05/2008	896	10,034	0	757
04/2008	892	9,419	0	745
03/2008	1,092	11,106	0	767
02/2008	977	10,099	0	729
01/2008	847	11,247	0	806
Total 2008	11,996	106,072	0	8,924
12/2007	967	9,874	0	805
11/2007	1,020	9,290	0	739

Number of Well
Types:

164 Well Types Having
Production:

87 Well Types Having
Injection:

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Field: Edison

Lease: Young Fee

▼ Date ▲	Oil(bbl)	Water(bbl)	Gas (Mcf)	Days
08/2011	7,418	73,198	0	1,703
07/2011	8,092	73,247	0	1,683
06/2011	8,861	67,729	0	1,678
05/2011	7,802	70,091	0	1,723
04/2011	8,771	69,949	0	1,696
03/2011	7,801	77,954	0	1,744
02/2011	6,153	68,183	0	1,542
01/2011	8,103	73,415	0	1,712
Total 2011	63,001	573,766	0	13,481
12/2010	7,225	68,089	0	1,624
11/2010	5,916	62,539	0	1,570
10/2010	5,925	54,469	0	1,603
09/2010	5,080	48,402	0	1,577
08/2010	5,271	57,124	0	1,681
07/2010	5,259	59,356	0	1,647
06/2010	4,665	51,987	0	1,603
05/2010	5,575	58,295	0	1,704
04/2010	4,691	55,259	0	1,636
03/2010	5,643	61,020	0	1,703
02/2010	4,831	61,443	0	1,529
01/2010	5,518	58,161	0	1,693
Total 2010	65,599	696,144	0	19,570
12/2009	5,439	62,632	0	1,680
11/2009	5,158	61,931	0	1,629
10/2009	6,045	63,678	0	1,649
09/2009	5,945	56,891	0	1,614
08/2009	6,511	53,090	0	1,645
07/2009	6,279	48,666	0	1,616
06/2009	6,901	49,804	0	1,611
05/2009	7,297	49,728	0	1,613
04/2009	6,203	46,815	0	1,459
03/2009	6,247	42,800	0	1,487
02/2009	5,490	35,879	0	1,401
01/2009	4,449	27,376	0	897
Total 2009	71,964	599,290	0	18,301
12/2008	5,833	37,349	0	1,460
11/2008	5,897	34,261	0	1,459
10/2008	7,473	37,007	0	1,501
09/2008	6,443	34,761	0	1,418
08/2008	4,951	40,790	0	1,541
07/2008	5,741	40,255	0	1,488
06/2008	5,870	42,916	0	1,515
05/2008	6,164	47,587	0	1,541
04/2008	7,258	48,827	0	1,490
03/2008	6,290	47,985	0	1,473
02/2008	5,764	46,378	0	1,363
01/2008	5,373	47,707	0	1,510
Total 2008	73,057	505,823	0	17,759
12/2007	6,014	44,570	0	1,545
11/2007	4,494	38,265	0	1,455

Appendix C

Historical Actual Emissions Calculations

	Monthly Throughput											
	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
S-1329-6	20,186	20,505	24,577	23,089	24,673	24,015	23,127	23,848	22,880	23,499	24,857	24,780
S-1329-7	20,186	20,505	24,577	23,089	24,673	24,015	23,127	23,848	22,880	23,499	24,857	24,780
S-1329-8	4,441	4,511	5,407	5,080	5,428	5,283	5,088	5,247	5,034	5,170	5,469	5,452
S-1329-10	5,450	5,536	6,636	6,234	6,662	6,484	6,244	6,439	6,178	6,345	6,711	6,691
S-1329-11	5,652	5,741	6,882	6,465	6,908	6,724	6,476	6,677	6,406	6,580	6,960	6,938
S-1329-12	4,643	4,716	5,653	5,310	5,675	5,523	5,319	5,485	5,262	5,405	5,717	5,699
S-1329-31	20,186	20,505	24,577	23,089	24,673	24,015	23,127	23,848	22,880	23,499	24,857	24,780

	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
S-1329-6	24,562	22,826	25,642	20,876	26,069	24,629	24,581	23,784	22,655	24,624	22,413	24,852
S-1329-7	24,562	22,826	25,642	20,876	26,069	24,629	24,581	23,784	22,655	24,624	22,413	24,852
S-1329-8	5,404	5,022	5,641	4,593	5,735	5,418	5,408	5,232	4,984	5,417	4,931	5,467
S-1329-10	6,632	6,163	6,923	5,637	7,039	6,650	6,637	6,422	6,117	6,648	6,052	6,710
S-1329-11	6,877	6,391	7,180	5,846	7,299	6,896	6,883	6,660	6,343	6,895	6,276	6,959
S-1329-12	5,649	5,250	5,898	4,802	5,996	5,665	5,654	5,470	5,211	5,664	5,155	5,716
S-1329-31	24,562	22,826	25,642	20,876	26,069	24,629	24,581	23,784	22,655	24,624	22,413	24,852

	1st Quarter Average	2nd Quarter Average	3rd Quarter Average	4th Quarter Average
S-1329-6	69,149	71,676	70,438	72,513
S-1329-7	69,149	71,676	70,438	72,513
S-1329-8	15,213	15,769	15,497	15,953
S-1329-10	18,670	19,353	19,019	19,579
S-1329-11	19,362	20,069	19,723	20,304
S-1329-12	15,905	16,486	16,201	16,678
S-1329-31	69,149	71,676	70,438	72,513

	Daily Average Based on 1st Quarter Average	Daily Average Based on 2nd Quarter Average	Daily Average Based on 3rd Quarter Average	Daily Average Based on 4th Quarter Average
S-1329-6	768	788	766	788
S-1329-7	768	788	766	788
S-1329-8	169	173	168	173
S-1329-10	207	213	207	213
S-1329-11	215	221	214	221
S-1329-12	177	181	176	181
S-1329-31	768	788	766	788

2-year sum recorded	567,549
2-year sum reported to DOGGR =	567,552

Tank Data	
permit number (S-xxxx-xx-xx)	S-1329-6
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbi)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Fluid Throughput Data		
	A	B
maximum daily fluid throughput (bbi)		768
maximum quarterly fluid throughput (bbi)	69,149	69,149
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	83.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6812
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1265.69
paint factor, alpha		0.88
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		48.04
vapor space expansion factor, K _e		0.1018

Results		
	lb/day	lb/day
Standing Storage Loss	52	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	52	0.6

Summary Table	
Permit Number	S-1329-6
Facility Tank I.D.	--
Tank capacity (bbi)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbi/day)	768
Maximum Quarterly Fluid Throughput (bbi/quarter)	69,149
Maximum Daily Oil Throughput (bbi/day)	N/A
Maximum Quarterly Oil Throughput (bbi/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	52

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Input Data	
permit number (S-xxxx-xx-xx)	S-1329-6
facility tank I.D.	-
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Input Data		
maximum daily fluid throughput (bbl)		788
maximum quarterly fluid throughput (bbl)	71,676	71,676
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.85
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	83.4	0.7650
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.8	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.69
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results	lb/quarter	lb/day
Standing Storage Loss	53	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	53	0.6

Summary Table	
Permit Number	S-1329-6
Facility Tank I.D.	-
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	788
Maximum Quarterly Fluid Throughput (bbl/quarter)	71,676
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Quarterly Oil Throughput (bbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	53

Q2

Land Input Data	
permit number (S-xxxx-xx-xx)	S-1329-6
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, Tb (°F)	90
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbi)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data		
maximum daily fluid throughput (bbi)		766
maximum quarterly fluid throughput (bbi)	70,438	70,438
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, Mw (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{en} (°F)		53.16
daily total solar insulation factor, I (Btu/R ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{ix}), P _{vix} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{in}), P _{vin} (psia)	62.6	0.5580
water vapor pressure at average liquid surface temperature (T _{ia}), P _{via} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.69
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results		
	lb/quarter	lb/day
Standing Storage Loss	53	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	53	0.6

Summary Table	
Permit Number	S-1329-6
Facility Tank I.D.	--
Tank capacity (bbi)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbi/day)	766
Maximum Quarterly Fluid Throughput (bbi/quarter)	70,438
Maximum Daily Oil Throughput (bbi/day)	N/A
Maximum Quarterly Oil Throughput (bbi/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	53

Q3

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-6
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	80
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbi)	1,800
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Throughput Data		
maximum daily fluid throughput (bbi)		788
maximum quarterly fluid throughput (bbi)	72,513	72,513
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.85
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6812
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.69
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		48.04
vapor space expansion factor, K _e		0.1016

Results		
	lb/quarter	lb/day
Standing Storage Loss	53	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	53	0.6

Summary Table	
Permit Number	S-1329-6
Facility Tank I.D.	--
Tank capacity (bbi)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbi/day)	788
Maximum Quarterly Fluid Throughput (bbi/quarter)	72,513
Maximum Daily Oil Throughput (bbi/day)	N/A
Maximum Quarterly Oil Throughput (bbi/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	53

QA

Tank Information	
permit number (S-xxxx-xx-xx)	S-1329-7
facility tank I.D.	-
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.8
capacity of tank (bbt)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Throughput		
maximum daily fluid throughput (bbt)		768
maximum quarterly fluid throughput (bbt)	69,149	69,149
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		63.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7650
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1286.89
paint factor, alpha		0.88
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results		
	lb/day	lb/day
Standing Storage Loss	52	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	52	0.8

Summary Table	
Permit Number	S-1329-7
Facility Tank I.D.	-
Tank capacity (bbt)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbt/day)	768
Maximum Quarterly Fluid Throughput (bbt/quarter)	69,149
Maximum Daily Oil Throughput (bbt/day)	N/A
Maximum Quarterly Oil Throughput (bbt/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.8
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	52

Q1

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-7
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbt)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Tank Input Data	
maximum daily fluid throughput (bbt)	788
maximum quarterly fluid throughput (bbt)	71,676
-----This row only used if flashing losses occur in this tank-----	100
-----This row only used if flashing losses occur in this tank-----	36,500
molecular weight, M _w (lb/lb-mol)	100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1646.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	83.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.89
paint factor, e _{pha}		0.88
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results	lb/gal	lb/day
Standing Storage Loss	53	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	53	0.6

Summary Table	
Permit Number	S-1329-7
Facility Tank I.D.	--
Tank capacity (bbt)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbt/day)	788
Maximum Quarterly Fluid Throughput (bbt/quarter)	71,676
Maximum Daily Oil Throughput (bbt/day)	N/A
Maximum Quarterly Oil Throughput (bbt/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	53

Q2

Input Data	
permit number (S-xxxx-xx-xx)	6-1329-7
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psl)	0.06
diameter of tank (feet)	26.8
capacity of tank (bb)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Input Data		
maximum daily fluid throughput (bb)		766
maximum quarterly fluid throughput (bb)	70,438	70,438
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.66
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6812
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.68
paint factor, alpha		0.86
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results	lb/quarter	lb/day
Standing Storage Loss	53	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	53	0.6

Summary Table	
Permit Number	S-1329-7
Facility Tank I.D.	--
Tank capacity (bb)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bb/day)	766
Maximum Quarterly Fluid Throughput (bb/quarter)	70,438
Maximum Daily Oil Throughput (bb/day)	N/A
Maximum Quarterly Oil Throughput (bb/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	53

Q3

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-7
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	18
average liquid height (feet)	14
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Tank Input Data		
maximum daily fluid throughput (bbl)		788
maximum quarterly fluid throughput (bbl)	72,613	72,613
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		38,500
molecular weight, Mw (lb/lb-mol)		100

Calculated Values		
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.8	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6812
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.69
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results		
Standing Storage Loss	53	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	53	0.6

Summary Table	
Permit Number	S-1329-7
Facility Tank I.D.	--
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	18
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	788
Maximum Quarterly Fluid Throughput (bbl/quarter)	72,613
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Quarterly Oil Throughput (bbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	53

QA

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-8
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
----- This row only used if shell is different color from roof -----	4
----- This row only used if shell is different color from roof -----	1

Tank Input Data		
maximum daily fluid throughput (bbl)		169
maximum quarterly fluid throughput (bbl)	15,213	15,213
----- This row only used if flashing losses occur in this tank -----		100
----- This row only used if flashing losses occur in this tank -----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
daily maximum ambient temperature, T _{ax} (°F)	A	77.85
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _b), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{in}), P _{vn} (psia)	82.8	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4108.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results		
Standing Storage Loss	160	1.84
Working Loss	366	4.39
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	561	6.2

Summary Table	
Permit Number	S-1329-8
Facility Tank I.D.	--
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	169
Maximum Quarterly Fluid Throughput (bbl/quarter)	15,213
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Quarterly Oil Throughput (bbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.2
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	561

Q1

Input Data	
permit number (S-xxxx-xx-xx)	S-1328-8
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	80
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
----- This row only used if shell is different color from roof -----	4
----- This row only used if shell is different color from roof -----	1

Input Data	A	B
maximum daily fluid throughput (bbl)		173
maximum quarterly fluid throughput (bbl)	15,769	15,769
----- This row only used if flashing losses occur in this tank -----		100
----- This row only used if flashing losses occur in this tank -----		38,500
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4108.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Result	lb/quarter	lb/day
Standing Storage Loss	168	1.84
Working Loss	410	4.50
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	578	6.3

Summary Table	
Permit Number	S-1328-8
Facility Tank I.D.	--
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	173
Maximum Quarterly Fluid Throughput (bbl/quarter)	15,769
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Quarterly Oil Throughput (bbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.3
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	578

Q2

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-8
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.05
diameter of tank (feet)	26.8
capacity of tank (bbbl)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	18
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
----- This row only used if shell is different color from roof-----	4
----- This row only used if shell is different color from roof-----	1

Fluid Input Data		
maximum daily fluid throughput (bbbl)		168
maximum quarterly fluid throughput (bbbl)	15,497	15,497
----- This row only used if flashing losses occur in this tank-----		100
----- This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{v_x} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{v_n} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{v_a} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.88
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/quarter	lb/day
Standing Storage Loss	170	1.84
Working Loss	403	4.37
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	573	6.2

Summary Table	
Permit Number	S-1329-8
Facility Tank I.D.	--
Tank capacity (bbbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	18
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbbl/day)	168
Maximum Quarterly Fluid Throughput (bbbl/quarter)	15,497
Maximum Daily Oil Throughput (bbbl/day)	N/A
Maximum Quarterly Oil Throughput (bbbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.2
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	573

Q3

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-B
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.25
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.8
capacity of tank (bb)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	18
average liquid height (feet)	8
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data		A	B
maximum daily fluid throughput (bb)			173
maximum quarterly fluid throughput (bb)	15,953	15,953	
-----This row only used if flashing losses occur in this tank-----			100
-----This row only used if flashing losses occur in this tank-----			38,500
molecular weight, M _w (lb/lb-mol)			100

Calculated Values		A	B
daily maximum ambient temperature, T _{ax} (°F)			77.65
daily minimum ambient temperature, T _{an} (°F)			53.15
daily total solar insulation factor, I (Btu/ft ² -day)			1648.9
atmospheric pressure, P _a (psia)			14.47
water vapor pressure at daily maximum liquid surface temperature (T _b), P _{v_x} (psia)	93.4	0.7850	
water vapor pressure at daily minimum liquid surface temperature (T _l), P _{v_n} (psia)	82.8	0.5580	
water vapor pressure at average liquid surface temperature (T _{l_a}), P _{v_a} (psia)	88.0	0.8812	
roof outage, H _{ro} (feet)		0.2792	
vapor space volume, V _v (cubic feet)		4106.21	
paint factor, alpha		0.68	
vapor density, W _v (lb/cubic foot)		0.0044	
daily vapor temperature range, delta T _v (degrees Rankine)		49.04	
vapor space expansion factor, K _e		0.1016	

Results	lb/quarter	lb/day
Standing Storage Loss	170	1.84
Working Loss	415	4.50
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	584	6.3

Summary Table	
Permit Number	S-1329-B
Facility Tank I.D.	--
Tank capacity (bb)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	18
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bb/day)	173
Maximum Quarterly Fluid Throughput (bb/quarter)	15,953
Maximum Daily Oil Throughput (bb/day)	N/A
Maximum Quarterly Oil Throughput (bb/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.3
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	584

QA

Tank Data	
permit number (S-xxxx-xx-xx)	S-1329-10
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	80
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	28.8
capacity of tank (bb)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	18
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Operating Data		
maximum daily fluid throughput (bb)		207
maximum quarterly fluid throughput (bb)	18,670	18,670
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		63.16
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.8	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4108.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results		
	lb/quarter	lb/day
Standing Storage Loss	168	1.84
Working Loss	485	5.38
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	651	7.2

Summary Table	
Permit Number	S-1329-10
Facility Tank I.D.	--
Tank capacity (bb)	1,600
Tank diameter (ft)	28.8
Tank shell height (ft)	18
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bb/day)	207
Maximum Quarterly Fluid Throughput (bb/quarter)	18,670
Maximum Daily Oil Throughput (bb/day)	N/A
Maximum Quarterly Oil Throughput (bb/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.2
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	651

Q1

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-10
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	80
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbbl)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Output Data		
maximum daily fluid throughput (bbbl)		213
maximum quarterly fluid throughput (bbbl)	19,353	19,353
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.8	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Emissions		
	lb/quarter	lb/day
Standing Storage Loss	168	1.64
Working Loss	503	5.54
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	671	7.4

Summary Table	
Permit Number	S-1329-10
Facility Tank I.D.	--
Tank capacity (bbbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbbl/day)	213
Maximum Quarterly Fluid Throughput (bbbl/quarter)	19,353
Maximum Daily Oil Throughput (bbbl/day)	N/A
Maximum Quarterly Oil Throughput (bbbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.4
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	671

Q2

Input Data	
permit number (S-xxxx-xx-xx)	S-1329-10
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank VOC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.8
capacity of tank (bb)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Input Data		
maximum daily fluid throughput (bb)		207
maximum quarterly fluid throughput (bb)	19,019	19,019
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _b), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{in}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.88
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1015

Results		
	lb/quarter	lb/day
Standing Storage Loss	170	1.84
Working Loss	494	5.38
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	664	7.2

Summary Table	
Permit Number	S-1329-10
Facility Tank I.D.	--
Tank capacity (bb)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bb/day)	207
Maximum Quarterly Fluid Throughput (bb/quarter)	19,019
Maximum Daily Oil Throughput (bb/day)	N/A
Maximum Quarterly Oil Throughput (bb/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.2
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	664

Q3

Input Data	
permit number (S-xxxx-xx-xx)	S-1329-10
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbbl)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof: color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Input Data		
maximum daily fluid throughput (bbbl)		213
maximum quarterly fluid throughput (bbbl)	19,579	19,579
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		38,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.85
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	83.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.8	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6812
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4108.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/quarter	lb/day
Standing Storage Loss	170	1.84
Working Loss	509	5.54
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	679	7.4

Summary Table	
Permit Number	S-1329-10
Facility Tank I.D.	--
Tank capacity (bbbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbbl/day)	213
Maximum Quarterly Fluid Throughput (bbbl/quarter)	19,579
Maximum Daily Oil Throughput (bbbl/day)	N/A
Maximum Quarterly Oil Throughput (bbbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.4
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	679

QA

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-11
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	28.8
capacity of tank (bbbl)	1,800
conical or dome roof? (c, d)	c
shell height of tank (feet)	18
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Equal Input Data		
	A	B
maximum daily fluid throughput (bbbl)		216
maximum quarterly fluid throughput (bbbl)	19,362	19,362
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		38,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.16
daily total solar insulation factor, I (Btu/ft ² -day)		1646.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.8	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.86
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results		
	lb/quarter	lb/day
Standing Storage Loss	166	1.84
Working Loss	503	5.59
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	669	7.4

Summary Table	
Permit Number	S-1329-11
Facility Tank I.D.	--
Tank capacity (bbbl)	1,800
Tank diameter (ft)	28.8
Tank shell height (ft)	18
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbbl/day)	216
Maximum Quarterly Fluid Throughput (bbbl/quarter)	19,362
Maximum Daily Oil Throughput (bbbl/day)	N/A
Maximum Quarterly Oil Throughput (bbbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.4
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	669

Q1

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-11
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.8
capacity of tank (bb)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Tank Input Data		
maximum daily fluid throughput (bb)		221
maximum quarterly fluid throughput (bb)	20,069	20,069
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _b), P _{v_x} (psia)	83.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{in}), P _{v_n} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{v_a} (psia)	88.0	0.8812
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results		
	lb/quarter	lb/day
Standing Storage Loss	166	1.84
Working Loss	522	5.75
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	690	7.6

Summary Table	
Permit Number	S-1329-11
Facility Tank I.D.	--
Tank capacity (bb)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bb/day)	221
Maximum Quarterly Fluid Throughput (bb/quarter)	20,069
Maximum Daily Oil Throughput (bb/day)	N/A
Maximum Quarterly Oil Throughput (bb/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	690

Q2

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-11
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.8
capacity of tank (bb)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Tank Throughput Data		
maximum daily fluid throughput (bb)		214
maximum quarterly fluid throughput (bb)	19,723	19,723
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6812
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4108.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results		
	lb/quarter	lb/day
Standing Storage Loss	170	1.84
Working Loss	513	5.58
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	682	7.4

Summary Table	
Permit Number	S-1329-11
Facility Tank I.D.	--
Tank capacity (bb)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bb/day)	214
Maximum Quarterly Fluid Throughput (bb/quarter)	19,723
Maximum Daily Oil Throughput (bb/day)	N/A
Maximum Quarterly Oil Throughput (bb/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.4
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	682

Q3

Input Data	
permit number (S-xxxx-xx-xx)	S-1329-11
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbt)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Input Data		
	A	B
maximum daily fluid throughput (bbt)		221
maximum quarterly fluid throughput (bbt)	20,304	20,304
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.85
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{bx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{bn}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{ba}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.88
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		48.04
vapor space expansion factor, K _e		0.1018

Results		
	lb/quarter	lb/day
Standing Storage Loss	170	1.84
Working Loss	528	5.75
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	698	7.6

Summary table	
Permit Number	S-1329-11
Facility Tank I.D.	--
Tank capacity (bbt)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbt/day)	221
Maximum Quarterly Fluid Throughput (bbt/quarter)	20,304
Maximum Daily Oil Throughput (bbt/day)	N/A
Maximum Quarterly Oil Throughput (bbt/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	698

Q4

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-12
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, Tb (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.6
capacity of tank (bb)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes,no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Throughput		
maximum daily fluid throughput (bb)		177
maximum quarterly fluid throughput (bb)	15,905	15,905
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, Mw (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1848.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.8	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.88
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results		
	lb/quarter	lb/day
Standing Storage Loss	188	1.84
Working Loss	414	4.60
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	679	6.4

Summary Table	
Permit Number	S-1329-12
Facility Tank I.D.	--
Tank capacity (bb)	1,600
Tank diameter (ft)	26.6
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bb/day)	177
Maximum Quarterly Fluid Throughput (bb/quarter)	15,905
Maximum Daily Oil Throughput (bb/day)	N/A
Maximum Quarterly Oil Throughput (bb/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.4
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	579

Q1

Input Data	
permit number (S-xxxx-xx-xx)	S-1329-12
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank VOC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.8
capacity of tank (bbt)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Input Data		
maximum daily fluid throughput (bbt)		181
maximum quarterly fluid throughput (bbt)	16,486	16,486
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, Mw (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.85
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4108.21
paint factor, alpha		0.88
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		48.04
vapor space expansion factor, K _e		0.1018

Results		
Standing Storage Loss	166	1.84
Working Loss	429	4.71
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	596	6.5

Summary Table	
Permit Number	S-1329-12
Facility Tank I.D.	--
Tank capacity (bbt)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbt/day)	181
Maximum Quarterly Fluid Throughput (bbt/quarter)	16,486
Maximum Daily Oil Throughput (bbt/day)	N/A
Maximum Quarterly Oil Throughput (bbt/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.5
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	596

Q7

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-12
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bb)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes,no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Tank Input Data		
maximum daily fluid throughput (bb)		176
maximum quarterly fluid throughput (bb)	16,201	16,201
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1646.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _b), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{in}), P _{vn} (psia)	62.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6812
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.88
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/quarter	lb/day
Standing Storage Loss	170	1.84
Working Loss	421	4.58
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	591	6.4

Summary Table	
Permit Number	S-1329-12
Facility Tank I.D.	--
Tank capacity (bb)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bb/day)	176
Maximum Quarterly Fluid Throughput (bb/quarter)	16,201
Maximum Daily Oil Throughput (bb/day)	N/A
Maximum Quarterly Oil Throughput (bb/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.4
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	591

Q3

Input Data	
permit number (S-xxxx-xx-xx)	8-1329-12
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bb)	1,600
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes,no)	yes
For roof:	
color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Input Data		
maximum daily fluid throughput (bb)		181
maximum quarterly fluid throughput (bb)	16,678	16,678
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		38,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
daily maximum ambient temperature, T _{ax} (°F)		77.85
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{bx}), P _{vx} (psia)	93.4	0.7650
water vapor pressure at daily minimum liquid surface temperature (T _{bn}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{ba}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2782
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Results		
Standing Storage Loss	170	1.84
Working Loss	434	4.71
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	603	6.5

Summary Table	
Permit Number	S-1329-12
Facility Tank I.D.	--
Tank capacity (bb)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bb/day)	181
Maximum Quarterly Fluid Throughput (bb/quarter)	16,678
Maximum Daily Oil Throughput (bb/day)	N/A
Maximum Quarterly Oil Throughput (bb/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.5
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	603

Qk

Tank Data	
permit number (S-xxxx-xx-xx)	S-1329-31
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	50
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.8
capacity of tank (bbbl)	2,400
conical or dome roof? (c, d)	c
shell height of tank (feet)	24
average liquid height (feet)	22
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
----- This row only used if shell is different color from roof -----	4
----- This row only used if shell is different color from roof -----	1

Liquid Data		
maximum daily fluid throughput (bbbl)		768
maximum quarterly fluid throughput (bbbl)	69,149	69,149
----- This row only used if flashing losses occur in this tank -----		100
----- This row only used if flashing losses occur in this tank -----		38,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		63.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{ix} , P _{vx} (psia)	83.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{in} , P _{vn} (psia)	82.8	0.5580
water vapor pressure at average liquid surface temperature (T _{ia} , P _{va} (psia)	88.0	0.8612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1265.69
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results		
	lb/quarter	lb/day
Standing Storage Loss	62	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	52	0.8

Summary Table	
Permit Number	S-1329-31
Facility Tank I.D.	--
Tank capacity (bbbl)	2,400
Tank diameter (ft)	26.8
Tank shell height (ft)	24
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbbl/day)	768
Maximum Quarterly Fluid Throughput (bbbl/quarter)	69,149
Maximum Daily Oil Throughput (bbbl/day)	N/A
Maximum Quarterly Oil Throughput (bbbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.8
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	52

Q1

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-31
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank VOC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	28.8
capacity of tank (bbl)	2,400
conical or dome roof? (c, d)	c
shell height of tank (feet)	24
average liquid height (feet)	22
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec A, 2: Diff A1, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
----- This row only used if shell is different color from roof-----	4
----- This row only used if shell is different color from roof-----	1

Tank Input Data		Results	
maximum daily fluid throughput (bbl)			788
maximum quarterly fluid throughput (bbl)	71,676	71,676	
----- This row only used if flashing losses occur in this tank-----			100
----- This row only used if flashing losses occur in this tank-----			38,500
molecular weight, M _w (lb/lb-mol)			100

Calculated Values		A	B
daily maximum ambient temperature, T _{ax} (°F)			77.65
daily minimum ambient temperature, T _{an} (°F)			53.15
daily total solar insolation factor, I (Btu/ft ² -day)			1648.9
atmospheric pressure, P _a (psia)			14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4		0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6		0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0		0.5612
roof outage, H _{ro} (feet)			0.2792
vapor space volume, V _v (cubic feet)			1285.89
paint factor, alpha			0.68
vapor density, W _v (lb/cubic foot)			0.0044
daily vapor temperature range, delta T _v (degrees Rankine)			49.04
vapor space expansion factor, K _e			0.1018

Results	lb/quarter	lb/day
Standing Storage Loss	53	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	53	0.8

Summary Table	
Permit Number	S-1329-31
Facility Tank I.D.	--
Tank capacity (bbl)	2,400
Tank diameter (ft)	28.8
Tank shell height (ft)	24
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	788
Maximum Quarterly Fluid Throughput (bbl/quarter)	71,676
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Quarterly Oil Throughput (bbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.8
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	53

QR

Tank Data	
permit number (S-xxxx-xx-xx)	S-1329-31
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	80
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.6
capacity of tank (bbl)	2,400
conical or dome roof? (c, d)	c
shell height of tank (feet)	24
average liquid height (feet)	22
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Throughput Data		
maximum daily fluid throughput (bbl)		766
maximum quarterly fluid throughput (bbl)	70,438	70,438
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	83.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.69
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results		
	lb/quarter	lb/day
Standing Storage Loss	53	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	53	0.6

Summary Table	
Permit Number	S-1329-31
Facility Tank I.D.	--
Tank capacity (bbl)	2,400
Tank diameter (ft)	26.6
Tank shell height (ft)	24
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	766
Maximum Quarterly Fluid Throughput (bbl/quarter)	70,438
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Quarterly Oil Throughput (bbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	53

Q3

Tank Inventory Data	
permit number (S-xxxx-xx-xx)	S-1329-31
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.28
liquid bulk storage temperature, T _b (°F)	80
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.8
capacity of tank (bbl)	2,400
conical or dome roof? (c, d)	c
shell height of tank (feet)	24
average liquid height (feet)	22
are the roof and shell the same color? (yes, no)	yes
For roof:	
color (1: Spec Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Emission Data		
maximum daily fluid throughput (bbl)		788
maximum quarterly fluid throughput (bbl)	72,513	72,513
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	93.4	0.7850
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.8612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.69
paint factor, alpha		0.86
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1018

Roof Type	lb/gal/yr	lb/day
Standing Storage Loss	53	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	53	0.6

Summary Table	
Permit Number	S-1329-31
Facility Tank I.D.	--
Tank capacity (bbl)	2,400
Tank diameter (ft)	26.8
Tank shell height (ft)	24
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	788
Maximum Quarterly Fluid Throughput (bbl/quarter)	72,513
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Quarterly Oil Throughput (bbl/quarter)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Quarterly Tank VOC Emissions (lb/quarter)	53

Q4

Appendix D

Post Project Potential to Emit Calculations

Vaquero Energy
Hershey Lease
Fugitive Emission Calculations

Number of Components	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total		
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	
S-1329-6	1,600 bbl Wash		46		82		190	0	0		2		15	0	335
S-1329-7	1,600 bbl Wash		46		82		190	0	0		2		15	0	335
S-1329-8	1,600 bbl Stock		22		41		90	0	0		2		1	0	131
S-1329-10	1,600 bbl Stock		22		41		90	0	0		2		1	0	131
S-1329-11	1,600 bbl Stock		22		41		90	0	0		2		1	0	131
S-1329-12	1,600 bbl Stock		22		41		90	0	0		2		1	0	131
S-1329-31	2,400 bbl Wash		46		82		190	0	0		2		15	0	335
														1529	

Emission Factors - (AP-42; CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas
<10,000 ppmv - kg/yr/source	2.30E-02	2.00E-05	1.40E-05	3.50E-05	8.00E-06	1.20E-05	0.00E+00	9.96E-04	1.50E-05	2.40E-05	5.70E-05	1.47E-04
>10,000 ppmv - kg/yr/source	0.00E+00	6.10E-02	0.00E+00	1.39E-01	0.00E+00	2.55E-02	0.00E+00	8.90E-02	7.11E-02	5.49E-02	0.00E+00	1.38E-01
<10,000 ppmv - lb/yr/source	0.44	0.54	0.27	0.67	0.15	0.23	-	9.19	0.29	0.46	1.10	2.83
>10,000 ppmv - lb/yr/source	-	1,175.59	-	2,671.10	-	499.14	-	1,715.21	1,370.24	1,058.03	-	2,651.83
<10,000 ppmv - lb/yr/source	1.21E-03	1.478E-03	7.392E-04	1.548E-03	1.224E-04	6.336E-04	0.000E+00	5.259E-02	7.920E-04	1.267E-03	3.010E-03	7.762E-03
>10,000 ppmv - lb/yr/source	0.000E+00	3.221E+00	0.000E+00	7.316E+00	0.000E+00	1.360E+00	0.000E+00	4.699E+00	3.754E+00	2.899E+00	0.000E+00	7.265E+00

Emissions - lb/year	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/year		Total	Tons/yr
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas		
S-1329-6	1,600 bbl Wash	25		55		44				1		42		167	167	0.08
S-1329-7	1,600 bbl Wash	25		55		44				1		42		167	167	0.08
S-1329-8	1,600 bbl Stock	12		11		21				1		3		47	47	0.02
S-1329-10	1,600 bbl Stock	12		11		21				1		3		47	47	0.02
S-1329-11	1,600 bbl Stock	12		11		21				1		3		47	47	0.02
S-1329-12	1,600 bbl Stock	12		11		21				1		3		47	47	0.02
S-1329-31	2,400 bbl Wash	25		55		44				1		42		167	167	0.08
																0.35

Emissions - lb/day	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/day		Total	Tons/day	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas			
S-1329-6	1,600 bbl Wash	0.07		0.15		0.12				0.00		0.12		0.46	0	0.00	
S-1329-7	1,600 bbl Wash	0.07		0.15		0.12				0.00		0.12		0.46	0	0.00	
S-1329-8	1,600 bbl Stock	0.02		0.03		0.06				0.00		0.01		0.13	0	0.00	
S-1329-10	1,600 bbl Stock	0.02		0.03		0.06				0.00		0.01		0.13	0	0.00	
S-1329-11	1,600 bbl Stock	0.02		0.03		0.06				0.00		0.01		0.13	0	0.00	
S-1329-12	1,600 bbl Stock	0.02		0.03		0.06				0.00		0.01		0.13	0	0.00	
S-1329-31	2,400 bbl Wash	0.07		0.15		0.12				0.00		0.12		0.46	0	0.00	
																1.89	0.00

Emission Factors - (AP-42; CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas
<10,000 ppmv - lb/day/source												
>10,000 ppmv - lb/day/source												
<10,000 ppmv - lb/yr/source	2.345E+01	2.850E+01	1.428E+01	3.569E+01	8.158E+00	1.224E+01	0.000E+00	1.016E+03	1.530E+01	2.447E+01	5.812E+01	1.499E+02
>10,000 ppmv - lb/yr/source	0.000E+00	6.220E+04	0.000E+00	1.413E+05	0.000E+00	2.641E+04	0.000E+00	9.075E+04	7.250E+04	5.598E+04	0.000E+00	1.403E+05

Vaquero Energy
 Heritage Lease
 Fugitive Emission Calculations

Number of Components	Flange		Valve		Threaded Connection		Pump Seal		Open Ended Lines		Others		Total	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas
Separator #1		4		32		40						4	0	72
VAC - New Unit		3		5		100		0				3	0	110
Scrubber		2		3		30						2	0	25

Emission Factors - (AP-42) CAPCOA Table (v-zc)	Flange		Valve		Threaded Connection		Pump Seal		Open Ended Lines		Others	
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas
<10,000 ppmv - LpH2Source	2.30E-05	2.10E-05	1.10E-05	2.50E-05	8.00E-06	1.20E-05	0.00E+00	0.00E-04	1.50E-05	1.20E-05	2.70E-05	1.27E-04
>10,000 ppmv - LpH2Source	0.00E+00	0.10E-07	0.00E+00	1.50E-01	0.00E+00	2.00E-01	0.00E+00	0.00E-02	7.11E-01	1.70E-01	0.00E+00	1.31E-01
<10,000 ppmv - BpH2Source	0.44	0.64	0.27	0.87	0.16	0.23	-	16.19	0.28	0.46	1.10	2.63
>10,000 ppmv - BpH2Source	-	1.17E-09	-	2.07E-10	-	4.0E-14	-	1.15E-21	1.37E-24	1.05E-07	-	2.01E-05

Emissions - lb/year	Flange		Valve		Threaded Connection		Pump Seal		Open Ended Lines		Others		Total		Total	ton/day	lb/day
	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas	Heavy Oil	Gas			
Separator #1	-	3	-	18	-	48	-	-	-	-	-	11	-	38	38	0.02	0.11
VAC - New Unit	-	3	-	5	-	11	-	77	-	-	-	14	-	110	110	0.06	0.53
Scrubber	-	2	-	7	-	3	-	-	-	-	-	2	-	13	13	0.01	0.05
																0.08	0.47

Appendix E

Permits to Operate

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1329-6-2

EXPIRATION DATE: 03/31/2012

SECTION: SE14 **TOWNSHIP:** 30S **RANGE:** 29E

EQUIPMENT DESCRIPTION:

1,600 BBL FIXED ROOF "HOT" WASH TANK WITH VAPOR CONTROL SYSTEM SHARED WITH S-1329-6, '-7, '-8, '-10, '-11, '-12 AND '-31 INCLUDING VAPOR COMPRESSOR(S), SEPARATOR(S) AND SCRUBBER(S) - HERSHEY LEASE

PERMIT UNIT REQUIREMENTS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. NOTE: Facilities S-1329 and S-1509 are both included in the same Heavy Oil Central stationary source.
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
5. The operator shall ensure that the vapor control system is functional and is operating as designed, except during periods of tank cleaning and maintenance. [District Rules 2201 and 4623]
6. Vapor control equipment compressor shall activate before the pressure relief valve on any of the units served by the vapor control system vents. [District Rule 2201]
7. Authorized incineration devices for collected vapors are flare S-1329-3 and steam generators S-1329-22 and S-1509-23. [District Rule 2201]
8. Collected condensate shall be stored, handled and disposed of in manner preventing Volatile Organic Compound (VOC) emissions to the atmosphere. [District Rule 2201]
9. Tank vapors shall not be vented to atmosphere if steam generators or flare are inoperative. [District Rules 2201 and 4623]
10. VOC emission rate from vapor service components associated with the tank and vapor control system shall not exceed 0.9 lb/day. [District Rule 2201]
11. Permittee shall maintain with the permit accurate fugitive component counts using California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities Table IV-2C: Oil and Gas Production Screening Value Ranges (<10,000 ppmv) Emission Factors. [District Rule 2201]
12. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device that reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623]
13. All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

14. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit. [District Rule 2201]
15. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. [District Rule 2201]
16. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201]
17. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2201]
18. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2201]
19. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2201]
20. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2201]
21. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rule 4623]
22. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1329-7-2

EXPIRATION DATE: 03/31/2012

SECTION: SE14 TOWNSHIP: 30S RANGE: 29E

EQUIPMENT DESCRIPTION:

1,600 BBL FIXED ROOF WASH TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-1329-6 - HERSHEY LEASE

PERMIT UNIT REQUIREMENTS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. NOTE: Facilities S-1329 and S-1509 are both included in the same Heavy Oil Central stationary source.
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
5. VOC emission rate from vapor service components associated with the tank and vapor control system shall not exceed 0.5 lb/day. [District Rule 2201]
6. Permittee shall maintain with the permit accurate fugitive component counts using California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities Table IV-2C: Oil and Gas Production Screening Value Ranges (<10,000 ppmv) Emission Factors. [District Rule 2201]
7. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device that reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623]
8. All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 2201]
9. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit. [District Rule 2201]
10. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. [District Rule 2201]
11. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2201]
13. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2201]
14. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2201]
15. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2201]
16. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rule 4623]
17. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1329-8-2

EXPIRATION DATE: 03/31/2012

SECTION: SE14 TOWNSHIP: 30S RANGE: 29E

EQUIPMENT DESCRIPTION:

1,600 BBL FIXED ROOF SHIPPING TANK #3983 SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-1329-6 -
HERSHEY LEASE

PERMIT UNIT REQUIREMENTS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. NOTE: Facilities S-1329 and S-1509 are both included in the same Heavy Oil Central stationary source.
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
5. VOC emission rate from vapor service components associated with the tank and vapor control system shall not exceed 0.1 lb/day. [District Rule 2201]
6. Permittee shall maintain with the permit accurate fugitive component counts using California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities Table IV-2C: Oil and Gas Production Screening Value Ranges (<10,000 ppmv) Emission Factors. [District Rule 2201]
7. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device that reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623]
8. All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 2201]
9. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit. [District Rule 2201]
10. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. [District Rule 2201]
11. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2201]
13. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2201]
14. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2201]
15. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2201]
16. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rule 4623]
17. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1329-10-2

EXPIRATION DATE: 03/31/2012

SECTION: SE14 TOWNSHIP: 30S RANGE: 29E

EQUIPMENT DESCRIPTION:

1,600 BBL FIXED ROOF SHIPPING TANK #7620 SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-1329-6 -
HERSHEY LEASE

PERMIT UNIT REQUIREMENTS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. NOTE: Facilities S-1329 and S-1509 are both included in the same Heavy Oil Central stationary source.
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
5. VOC emission rate from vapor service components associated with the tank and vapor control system shall not exceed 0.1 lb/day. [District Rule 2201]
6. Permittee shall maintain with the permit accurate fugitive component counts using California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities Table IV-2C: Oil and Gas Production Screening Value Ranges (<10,000 ppmv) Emission Factors. [District Rule 2201]
7. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device that reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623]
8. All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 2201]
9. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit. [District Rule 2201]
10. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. [District Rule 2201]
11. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2201]
13. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2201]
14. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2201]
15. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2201]
16. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rule 4623]
17. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1329-11-2

EXPIRATION DATE: 03/31/2012

SECTION: SE14 TOWNSHIP: 30S RANGE: 29E

EQUIPMENT DESCRIPTION:

1,600 BBL FIXED ROOF SHIPPING TANK #3981 SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-1329-6 -
HERSHEY LEASE

PERMIT UNIT REQUIREMENTS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. NOTE: Facilities S-1329 and S-1509 are both included in the same Heavy Oil Central stationary source.
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
5. VOC emission rate from vapor service components associated with the tank and vapor control system shall not exceed 0.1 lb/day. [District Rule 2201]
6. Permittee shall maintain with the permit accurate fugitive component counts using California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities Table IV-2C: Oil and Gas Production Screening Value Ranges (<10,000 ppmv) Emission Factors. [District Rule 2201]
7. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device that reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623]
8. All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 2201]
9. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit. [District Rule 2201]
10. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. [District Rule 2201]
11. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2201]
13. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2201]
14. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2201]
15. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2201]
16. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rule 4623]
17. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1329-12-2

EXPIRATION DATE: 03/31/2012

SECTION: SE14 TOWNSHIP: 30S RANGE: 29E

EQUIPMENT DESCRIPTION:

1,600 BBL FIXED ROOF SHIPPING TANK #3982 SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-1329-6 -
HERSHEY LEASE

PERMIT UNIT REQUIREMENTS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. NOTE: Facilities S-1329 and S-1509 are both included in the same Heavy Oil Central stationary source.
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
5. VOC emission rate from vapor service components associated with the tank and vapor control system shall not exceed 0.1 lb/day. [District Rule 2201]
6. Permittee shall maintain with the permit accurate fugitive component counts using California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities Table IV-2C: Oil and Gas Production Screening Value Ranges (<10,000 ppmv) Emission Factors. [District Rule 2201]
7. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device that reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623]
8. All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 2201]
9. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit. [District Rule 2201]
10. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. [District Rule 2201]
11. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2201]
13. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2201]
14. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2201]
15. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2201]
16. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rule 4623]
17. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1329-31-2

EXPIRATION DATE: 03/31/2012

SECTION: SE 14 **TOWNSHIP:** T30S **RANGE:** R29E

EQUIPMENT DESCRIPTION:

2,400 BBL FIXED ROOF CRUDE OIL STORAGE TANK WITH PV VALVE SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-1329-6 - HERSHEY LEASE

PERMIT UNIT REQUIREMENTS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. NOTE: Facilities S-1329 and S-1509 are both included in the same Heavy Oil Central stationary source.
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
5. VOC emission rate from vapor service components associated with the tank and vapor control system shall not exceed 0.1 lb/day. [District Rule 2201]
6. Permittee shall maintain with the permit accurate fugitive component counts using California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities Table IV-2C: Oil and Gas Production Screening Value Ranges (<10,000 ppmv) Emission Factors. [District Rule 2201]
7. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device that reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623]
8. All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 2201]
9. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit. [District Rule 2201]
10. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. [District Rule 2201]
11. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

12. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2201]
13. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2201]
14. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2201]
15. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2201]
16. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rule 4623]
17. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

These terms and conditions are part of the Facility-wide Permit to Operate.

Appendix F

Draft Emission Reduction Credit Certificate

San Joaquin Valley
Air Pollution Control District

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308

Emission Reduction Credit Certificate
S1113860-135-1

ISSUED TO: HUNTER EDISON OIL DEVELOPMENT
ISSUED DATE: <DRAFT>
LOCATION OF REDUCTION: HEAVY OIL CENTRAL
CA
SECTION: SE/17 TOWNSHIP: 29S RANGE: 21E

For VOC Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
2,186 lbs	2,256 lbs	2,234 lbs	2,282 lbs

Conditions Attached

Method Of Reduction

- Shutdown of Entire Stationary Source
 Shutdown of Emissions Units
 Other

Installation of vapor recovery on tanks

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

David Warner, Director of Permit Services

PROOF OF PUBLICATION

The BAKERSFIELD CALIFORNIAN
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BAKERSFIELD, CA 93302

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STATE OF CALIFORNIA
COUNTY OF KERN

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY AFORESAID. I AM OVER THE AGE OF EIGHTEEN YEARS, AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE ASSISTANT PRINCIPAL CLERK OF THE PRINTER OF THE BAKERSFIELD CALIFORNIAN, A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF BAKERSFIELD COUNTY OF KERN,

AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT: 12/19/11

ALL IN YEAR 2011

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Jerri Brice

DATED AT BAKERSFIELD CALIFORNIA

12/19/11

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NOTICE OF PRELIMINARY DECISION FOR THE PR

Ad Number 12627969

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NOTICE OF PRELIMINARY DECISION FOR THE PROPOSED ISSUANCE OF EMISSION REDUCTION CREDITS

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Emission Reduction Credits to Hunter Edison Oil Development for the installation of vapor control on several tanks previously equipped with PV vents, at the Hershey Lease within Hunter Edison Oil Development's Heavy Oil Central Stationary Source in Kern County. The quantity of ERCs proposed for banking is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256 lb-VOC; 3rd quarter, 2,234 lb-VOC; and 4th quarter, 2,282 lb-VOC.

S-1329

The analysis of the regulatory basis for this proposed action, Project #S-1113B60, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308. CNS-2226371# December 19, 2011 (12627969)



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Article Addressed to:

Seth Hunter
 Hunter Edison Oil Development
 15545 Hermosa Road
 Bakersfield, CA 93307

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Song

ERC Public Notice 5-1329

5-1113860

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CENTRAL REGION

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ERC/PUBLIC NOTICE CHECK LIST

PROJECT #s: S-1113860

S-1329

√ √
REQST. COMPL.

—	—	ERC TRANSFER OF PREVIOUSLY BANKED CREDITS
—	—	ERC PRELIMINARY PUBLIC NOTICE
√	—	ERC FINAL PUBLIC NOTICE

Date Completed January 18, 2012/By Allan Phillips

√ Newspaper Notice Emailed to Clerical (Check box and tab to generate Notice)
 √ Send email to "OA-PublicNotices" containing the following:
 SUBJECT: facility name, facility id#, project #, type of notice (prelim/final)
 BODY: project description and why it is being noticed (based on Major Source, Major Modification, Title V Minor Mod, Title V Significant Mod, Initial Title V, Title V renewal, or ATC with COC)

ENCLOSED DOCUMENTS REQUIRE:

√ Director's Signature and District Seal Embossed on ERC Certificates

√ Mail **FINAL** notice letter to applicant by **Certified Mail** including the following:
 √ Public Notice
 √ Original ERC Certificates

√ Email **FINAL** Public Notice for Publication to Bakersfield Californian

√ Email **FINAL** Public Notice package to EPA and CARB

√ Email **FINAL** Public Notice package to "webmaster"

√ Send **FINAL** Public Notice package to Kris Rickards

√ Assign Mailing Date

— — Other Special Instructions (please specify): _____

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1/23/12

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CONTROL DIST
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FRESNO, CA 93726

COPY OF NOTICE

Notice Type: GPN GOVT PUBLIC NOTICE
Ad Description Final ERC S-1113860, Hunter Edison Oil, Bakerfield, st

To the right is a copy of the notice you sent to us for publication in the THE BAKERSFIELD CALIFORNIAN. Please read this notice carefully and call us with any corrections. The Proof of Publication will be filed with the County Clerk, if required, and mailed to you after the last date below. Publication date(s) for this notice is (are):

01/26/2012

CNS 2248910

NOTICE OF FINAL ACTION FOR THE ISSUANCE OF EMISSION REDUCTION CREDITS

NOTICE IS HEREBY GIVEN that the Air Pollution Control Officer has issued Emission Reduction Credits (ERCs) to Hunter Edison Oil Development for emission reductions generated by installing vapor recovery on multiple fixed roof tanks, at Hunter Edison Oil Development's Heavy Oil Central Stationary Source within Kern County. The quantity of ERCs to be issued is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256; 3rd quarter, 2,234; and 4th quarter, 2,282.

No comments were received following the District's preliminary decision on this project.

The application review for Project #S-1113860 is available for public inspection at http://www.valleyair.org/notices/public_notices.idx.htm and the SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.
1/26/12

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Attention Name	Song	Billing Reference No.	PER
Ad Description	Final ERC S-1113860, Hunter Edison Oil, Bakerfield,st	Sale/Hrg/Bid Date	01/26/2012
Special Instructions	email copy of notice to song.thao@valleyair.org		

Orders Created

Order No.	Newspaper Name	Publishing Dates	Ad	Price	Ad Status
2248910	THE BAKERSFIELD CALIFORNIAN, CA	01/26/2012	Depth : 3.30" Lines : 41	Pricing will be done by DJC	Sent
Order No.	Newspaper	View			
2248910	THE BAKERSFIELD CALIFORNIAN	View Ad In PDF			

**NOTICE OF FINAL ACTION
FOR THE ISSUANCE OF
EMISSION REDUCTION CREDITS**

NOTICE IS HEREBY GIVEN that the Air Pollution Control Officer has issued Emission Reduction Credits (ERCs) to Hunter Edison Oil Development for emission reductions generated by installing vapor recovery on multiple fixed roof tanks, at Hunter Edison Oil Development's Heavy Oil Central Stationary Source within Kern County. The quantity of ERCs to be issued is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256; 3rd quarter, 2,234; and 4th quarter, 2,282.

No comments were received following the District's preliminary decision on this project.

The application review for Project #S-1113860 is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.

Song Thao

From: Song Thao
Sent: Monday, January 23, 2012 1:26 PM
To: Gerardo Rios (SJV_T5_Permits@epamail.epa.gov); Mike Tollstrup (mtollstr@arb.ca.gov)
Subject: Final ERC Public Notice for Hunter Edison Oil Development Facility S-1329 Project S-1113860
Attachments: Public Notice Pkg.pdf; Newspaper Notice.pdf
Importance: High

NOTICE IS HEREBY GIVEN that the Air Pollution Control Officer has issued Emission Reduction Credits (ERCs) to Hunter Edison Oil Development for emission reductions generated by installing vapor recovery on multiple fixed roof tanks, at Hunter Edison Oil Development's Heavy Oil Central Stationary Source within Kern County. The quantity of ERCs to be issued is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256; 3rd quarter, 2,234; and 4th quarter, 2,282.

Song Thao

From: Postmaster
Sent: Monday, January 23, 2012 1:25 PM
To: Song Thao
Subject: Delivery Status Notification (Relay)
Attachments: ATT834989.txt; Final ERC Public Notice for Hunter Edison Oil Development Facility S-1329 Project S-1113860

This is an automatically generated Delivery Status Notification.

Your message has been successfully relayed to the following recipients, but the requested delivery status notifications may not be generated by the destination.

mtollstr@arb.ca.gov

Song Thao

From: Mail Delivery System <MAILER-DAEMON@mseive02.rtp.epa.gov>
Sent: Monday, January 23, 2012 1:25 PM
To: Song Thao
Subject: Successful Mail Delivery Report
Attachments: Delivery report; Message Headers

This is the mail system at host mseive02.rtp.epa.gov.

Your message was successfully delivered to the destination(s) listed below. If the message was delivered to mailbox you will receive no further notifications. Otherwise you may still receive notifications of mail delivery errors from other systems.

The mail system

<SJV_T5_Permits@epamail.epa.gov>: delivery via 127.0.0.1[127.0.0.1]:10025: 250
OK, sent 4F1DD049_14800_63332_1 EB17E1DC002

Song Thao

From: Song Thao
Sent: Monday, January 23, 2012 1:29 PM
To: WebMaster
Subject: FW: valleyair.org update: Final ERC Public Notice for Hunter Edison Oil Development Facility S-1329 Project S-1113860

January 23, 2012 (Facility S-1329 Project S-1113860) NOTICE IS HEREBY GIVEN that the Air Pollution Control Officer has issued Emission Reduction Credits (ERCs) to Hunter Edison Oil Development for emission reductions generated by installing vapor recovery on multiple fixed roof tanks, at Hunter Edison Oil Development's Heavy Oil Central Stationary Source within Kern County. The quantity of ERCs to be issued is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256; 3rd quarter, 2,234; and 4th quarter, 2,282.

[Newspaper Notice](#)

[Public Notice Package](#)



JAN 23 2012

Seth Hunter
Hunter Edison Oil Development
15545 Hermosa Road
Bakersfield, CA 93307

RE: Notice of Final Action - Emission Reduction Credits
Project Number: S-1113860

Dear Mr. Hunter:

The Air Pollution Control Officer has issued Emission Reduction Credits (ERCs) to Hunter Edison Oil Development for emission reductions generated by installing vapor control on multiple fixed roof tanks, at Hunter Edison Oil Development's Heavy Oil Central Stationary Source within Kern County. The quantity of ERCs to be issued is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256; 3rd quarter, 2,234; and 4th quarter, 2,282.

Enclosed is the ERC Certificate and a copy of the notice of final action to be published approximately three days from the date of this letter.

Notice of the District's preliminary decision to issue the ERC Certificates was published on December 19, 2011. The District's analysis of the proposal was also sent to CARB and US EPA Region IX on December 14, 2011. No comments were received following the District's preliminary decision on this project.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura at (661) 392-5500.

Sincerely,

David Warner
Director of Permit Services

DW:KTR/st

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



JAN 23 2012

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

RE: Notice of Final Action - Emission Reduction Credits
Project Number: S-1113860

Dear Mr. Tollstrup:

The Air Pollution Control Officer has issued Emission Reduction Credits (ERCs) to Hunter Edison Oil Development for emission reductions generated by installing vapor control on multiple fixed roof tanks, at Hunter Edison Oil Development's Heavy Oil Central Stationary Source within Kern County. The quantity of ERCs to be issued is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256; 3rd quarter, 2,234; and 4th quarter, 2,282.

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Sincerely,

David Warner
Director of Permit Services

DW:KTR/st

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Bakersfield, CA 93308-9725
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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



JAN 23 2012

Gerardo C. Rios (AIR 3)
Chief, Permits Office
Air Division
U.S. E.P.A. - Region IX
75 Hawthorne Street
San Francisco, CA 94105

RE: Notice of Final Action - Emission Reduction Credits
Project Number: S-1113860

Dear Mr. Rios:

The Air Pollution Control Officer has issued Emission Reduction Credits (ERCs) to Hunter Edison Oil Development for emission reductions generated by installing vapor control on multiple fixed roof tanks, at Hunter Edison Oil Development's Heavy Oil Central Stationary Source within Kern County. The quantity of ERCs to be issued is 1st quarter, 2,186 lb-VOC; 2nd quarter, 2,256; 3rd quarter, 2,234; and 4th quarter, 2,282.

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Sincerely,

David Warner
Director of Permit Services

DW:KTR/st

Enclosures

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Bakersfield Californian

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Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308

Emission Reduction Credit Certificate S-3723-1

ISSUED TO: HUNTER EDISON OIL DEVELOPMENT
ISSUED DATE: January 19, 2012
LOCATION OF REDUCTION: HEAVY OIL CENTRAL
 CA
 SECTION: SE/17 TOWNSHIP: 29S RANGE: 21E

For VOC Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
2,186 lbs	2,256 lbs	2,234 lbs	2,282 lbs

Conditions Attached

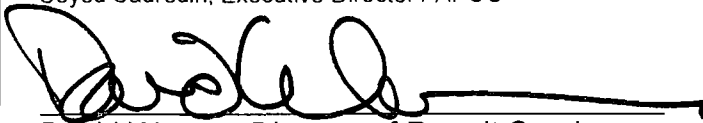
Method Of Reduction

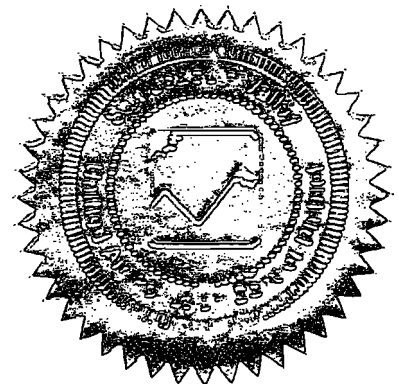
- Shutdown of Entire Stationary Source
- Shutdown of Emissions Units
- Other

Installation of vapor recovery on tanks

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO


 David Warner, Director of Permit Services



PROJECT ROUTING FORM

FACILITY NAME: Hunter Edison Oil Development/Vaquero Energy

FACILITY ID: S-1329 PROJECT NUMBER: S-1113860

PERMIT #'s: _____

DATE RECEIVED: August 22, 2011

PRELIMINARY REVIEW	ENGR	DATE	SUPR	DATE
A. Application Deemed Incomplete				
Second Information Letter				
B. Application Deemed Complete	<i>KSOZ</i>	<i>9/19/11</i>	<i>AP</i>	<i>9-19-11</i>
C. Application Pending Denial				
D. Application Denied				

ENGINEERING EVALUATION	INITIAL	DATE
E. Engineering Evaluation Complete - Project triggering Federal Major Modification: <input type="checkbox"/> Yes AND Information entered in database (AirNet) <input type="checkbox"/> No (not Fed MMed) - District is Lead Agency for CEQA purposes AND the project GHG emissions increase exceeds 230 metric tons/year: <input type="checkbox"/> Yes AND Information entered in database (AirNet) <input type="checkbox"/> No	<i>KSOZ</i>	<i>11/14/11</i>
F. Supervising Engineer Approval	<i>AP</i>	<i>11-27-11</i>
G. Compliance Division Approval <input type="checkbox"/> Not Required	_____	_____
H. Applicant's Review of Draft Authority to Construct Completed <input type="checkbox"/> 3-day Review <input type="checkbox"/> 10-day Review <input type="checkbox"/> No Review Requested	_____	_____
I. Permit Services Regional Manager Approval	<i>CS</i>	<i>11/28/11</i>

DIRECTOR REVIEW <input type="checkbox"/> Not Required	INITIAL	DATE
J. Preliminary Approval to Director		
K. Final Approval to Director		

Kristopher Rickards

From: Nicholas <ndiercks@ix.netcom.com>
Sent: Thursday, September 15, 2011 4:45 PM
To: Kristopher Rickards
Subject: RE: ERC Application for Vaquero Energy/Hunter Edison Oil Development
Attachments: Hershey_Throughputs.pdf

Importance: High

Kris,

Attached are the total throughputs for the two years broken down by each lease that produces to the tanks. The leases directly correlate with what is on file with DOGGR. I did not send the monthly data for each lease since it is a lot of information, but I can send it to you tomorrow. However, the monthly throughputs are accessible through the DOGGR website.

Thanks.

Nicholas Diercks
Environmental Specialist
EnviroTech Consultants, Inc.
Phone: (661)377-0073 x13
Fax: (661)377-0074
ndiercks@ix.netcom.com

From: Kristopher Rickards [<mailto:kristopher.rickards@valleyair.org>]
Sent: Wednesday, September 14, 2011 2:22 PM
To: ndiercks@ix.netcom.com
Subject: ERC Application for Vaquero Energy/Hunter Edison Oil Development

Nick,


I'm working on the preliminary review for this project where Vaquero Energy is requesting to bank VOC emissions from installing tank vapor recovery. Could you provide the tank throughput records for each of these tanks over the baseline period (January 1, 2009 to December 31, 2010)?

Thanks,

Kris Rickards
Air Quality Engineer



San Joaquin Valley Air Pollution Control District
34946 Flyover Court | Bakersfield, CA 93308
www.valleyair.org | Email: Kristopher.Rickards@valleyair.org
Fax: (661) 392-5585 | Phone: (661) 392-5611

Make one change for clean air!  Please consider the environment before printing this email

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Vaquero Energy

January 2009 - December 2010 Throughput

Lease	Facility	BOPD			Field
		Oil (bbl)	Water (bbl)	Gas (Mcf)	
Annie M. Dougherty	Hershey	6,229	-	-	Edison
Cauley-Aera	Duff/Hershey	1,403	-	-	Edison
Citizens	Hershey	20,638	-	-	Edison
Clare	Hershey	11,571	-	-	Edison
Clinton Land Co	Duff/Hershey	1,054	-	-	Edison
Corp Fee	Hershey	87,305	-	-	Edison
Duff Shell	Duff/Hershey	94,525	-	-	Edison
Brandt	Brandt/Hershey	2,710	-	-	Edison
G. Hay	Hershey	700	-	-	Edison
Jane Price	Hershey	3,763	-	-	Edison
Joe Guimarra	Brandt/Hershey	933	-	-	Edison
John C. Hershey	Hershey	58,398	-	-	Edison
Leddy-Nichols	Hershey	13,425	-	-	Edison
McCowan A	Hershey	33,588	-	-	Edison
McCowan B	Hershey	18,646	-	-	Edison
Mobil Fee	Duff/Hershey	3,381	-	-	Edison
Nichols	Duff/Hershey	17,012	-	-	Edison
Ruby Smithwick	Hershey	18,692	-	-	Edison
Santa Fe	Duff/Hershey	5,084	-	-	Edison
Surgener	Hershey	5,742	-	-	Edison
Teget	Teget/Hershey	2,415	-	-	Edison
Walter Brown	Duff/Hershey	22,775	-	-	Edison
Young Fee	Hershey	137,563	-	-	Edison
		567,552	-	-	GOR
	Hershey	567,552	-	-	

Kristopher Rickards

From: Nicholas <ndiercks@ix.netcom.com>
Sent: Monday, September 19, 2011 2:25 PM
To: Kristopher Rickards
Subject: RE: ERC Application for Vaquero Energy/Hunter Edison Oil Development
Attachments: Tank_Monthly_Throughput.pdf

Importance: High

Attached are the monthly tank throughputs.

Thanks.

Nicholas Diercks
Environmental Specialist
EnviroTech Consultants, Inc.
Phone: (661)377-0073 x13
Fax: (661)377-0074
ndiercks@ix.netcom.com

From: Kristopher Rickards [<mailto:kristopher.rickards@valleyair.org>]
Sent: Monday, September 19, 2011 12:42 PM
To: Nicholas
Subject: RE: ERC Application for Vaquero Energy/Hunter Edison Oil Development

Nick,

Can you provide monthly tank throughputs for each tank so we can verify how production was diverted into these tanks?

-Kris Rickards

From: Nicholas [<mailto:ndiercks@ix.netcom.com>]
Sent: Thursday, September 15, 2011 4:45 PM
To: Kristopher Rickards
Subject: RE: ERC Application for Vaquero Energy/Hunter Edison Oil Development
Importance: High

Kris,

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Thanks,

Kris Rickards

Air Quality Engineer



San Joaquin Valley Air Pollution Control District

34946 Flyover Court | Bakersfield, CA 93308

www.valleyair.org | Email: Kristopher.Rickards@valleyair.org

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Vaquero Energy

Tank Permit #	Tank #	Lease	Description	Tank Type	Contents	Capacity (gal)	Oil Monthly Throughput (bbl)						
							Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09
S-1329-6		Hershey	Wash Tank	Fixed Roof	Crude Oil/Water	67,200	20,186	20,505	24,577	23,089	24,673	24,015	23,127
S-1329-7		Hershey	Wash Tank	Fixed Roof	Crude Oil/Water	67,200	20,186	20,505	24,577	23,089	24,673	24,015	23,127
S-1329-8	3983	Hershey	Stock Tank	Fixed Roof	Crude Oil	67,200	4,441	4,511	5,407	5,080	5,428	5,283	5,088
S-1329-10	7620	Hershey	Stock Tank	Fixed Roof	Crude Oil	67,200	5,450	5,536	6,636	6,234	6,662	6,484	6,244
S-1329-11	3981	Hershey	Stock Tank	Fixed Roof	Crude Oil	67,200	5,652	5,741	6,882	6,465	6,908	6,724	6,476
S-1329-12	3982	Hershey	Stock Tank	Fixed Roof	Crude Oil	67,200	4,643	4,716	5,653	5,310	5,675	5,523	5,319
S-1329-31	3982	Hershey	Wash Tank	Fixed Roof	Crude Oil/Water	100,800	20,186	20,505	24,577	23,089	24,673	24,015	23,127

Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
23,848	22,880	23,499	24,857	24,780	24,562	22,826	25,642	20,879	26,069	24,629	24,581	23,784	22,655	24,624	22,413	24,852
23,848	22,880	23,499	24,857	24,780	24,562	22,826	25,642	20,879	26,069	24,629	24,581	23,784	22,655	24,624	22,413	24,852
5,247	5,034	5,170	5,469	5,452	5,404	5,022	5,641	4,593	5,735	5,418	5,408	5,232	4,984	5,417	4,931	5,467
6,439	6,178	6,345	6,711	6,691	6,632	6,163	6,923	5,637	7,039	6,650	6,637	6,422	6,117	6,648	6,052	6,710
6,677	6,406	6,580	6,960	6,938	6,877	6,391	7,180	5,846	7,299	6,896	6,883	6,660	6,343	6,895	6,276	6,959
5,485	5,262	5,405	5,717	5,699	5,649	5,250	5,898	4,802	5,996	5,665	5,654	5,470	5,211	5,664	5,155	5,716
23,848	22,880	23,499	24,857	24,780	24,562	22,826	25,642	20,879	26,069	24,629	24,581	23,784	22,655	24,624	22,413	24,852



SEP 19 2011

Seth Hunter
Hunter Edison Oil Development
15545 Hermosa Road
Bakersfield, CA 93307

**Re: Notice of Receipt of Complete Application - Emission Reduction Credits
Banking
Project Number: S-1113860**

Dear Mr. Hunter:

The District has completed a preliminary review of your application for Emission Reduction Credits (ERCs) Banking resulting from installing vapor recovery on multiple fixed roof tanks within Hunter Edison Oil Development's Heavy Oil Central Stationary Source.

Based on this preliminary review, the application appears to be complete. However, during processing of your application, the District may request additional information to clarify, correct, or otherwise supplement, the information on file.

Pursuant to District Rule 3060, your application may be subject to an hourly Engineering Evaluation Fee. If the applicable fees exceed the submitted application filing fee, the District will notify you at the conclusion of our review.

Thank you for your cooperation. Should you have any questions, please contact Mr. Kristopher Rickards at (661) 392-5611.

Sincerely,

David Warner
Director of Permit Services



Leonard Scandura, P.E.
Permit Services Manager

DW: KTR

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

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Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585



**VAQUERO
ENERGY**

15545 Hermosa Road • Bakersfield, CA 93307

RECEIVED

AUG 22 2011

**SJVAPCD
Southern Region**

August 4, 2011

Mr. Leonard Scandura
Permit Services Manager
San Joaquin Valley Unified APCD
34946 Flyover Ct
Bakersfield, CA 93301

Subject: ERC Application for Vapor Recovery Installation – S-1329

Dear Mr. Scandura:

Please find enclosed an Application for Emission Reduction Credits and check for \$759. These applications are being submitted to request ERCs from the reduction in VOC emissions as a result of installing a vapor recovery system located in the Heavy Oil Central stationary source.

The following tanks have been modified to connect to the vapor recovery system:

- S-1329-6 – 1,600 BBL crude oil wash tank
- S-1329-7 - 1,600 BBL crude oil wash tank
- S-1329-8 – 1,600 BBL crude oil storage tank
- S-1329-10 - 1,600 BBL crude oil storage tank
- S-1329-11 - 1,600 BBL crude oil storage tank
- S-1329-12 - 1,600 BBL crude oil storage tank
- S-1329-31 – 2,400 BBL crude oil wash tank

If you have any questions or need further information, please feel free to call Nicholas Diercks at (661) 377-0073 x13.

Sincerely,

Seth Hunter
Operations Manager

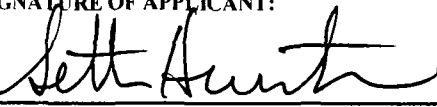
San Joaquin Valley Air Pollution Control District

Application for

RECEIVED
AUG 22 2011
 SJVAPCD
 Southern Region

EMISSION REDUCTION CREDIT (ERC)

CONSOLIDATION OF ERC CERTIFICATES

1. ERC TO BE ISSUED TO: VAQUERO ENERGY		Facility ID: <u>S - 1329</u> (if known)				
2. MAILING ADDRESS: Street/P.O. Box: <u>15545 HERMOSA ROAD</u>						
City: <u>Bakersfield</u>		State: <u>CA</u> Zip Code: <u>93307</u>				
3. LOCATION OF REDUCTION: Street: _____ City: _____ <u>SE</u> /4 SECTION <u>17</u> TOWNSHIP <u>29S</u> RANGE <u>21E</u>		4. DATE OF REDUCTION: <u>3/15/2011</u>				
5. PERMIT NO(S): <u>S-1329-6, -7, -8, -10, -11, -12, -31</u>		EXISTING ERC NO(S):				
6. METHOD RESULTING IN EMISSION REDUCTION: <input type="checkbox"/> SHUTDOWN <input checked="" type="checkbox"/> RETROFIT <input type="checkbox"/> PROCESS CHANGE <input type="checkbox"/> OTHER DESCRIPTION: Installation of vapor recovery unit on three wash tanks and four stock tanks at the Hershey Lease.						
(Use additional sheets if necessary)						
7. REQUESTED ERCs (In Pounds Per Calendar Quarter):						
	VOC	NOx	CO	PM10	SOx	OTHER
1ST QUARTER	2,408					
2ND QUARTER	2,408					
3RD QUARTER	2,408					
4TH QUARTER	2,408					
8. SIGNATURE OF APPLICANT: 			TYPE OR PRINT TITLE OF APPLICANT: <u>Production Superintendent</u>			
9. TYPE OR PRINT NAME OF APPLICANT: <u>Seth Hunter</u>			DATE: <u>8/5/11</u>		TELEPHONE NO: <u>661-363-7240</u>	

FOR APCD USE ONLY:

DATE STAMP	FILING FEE RECEIVED: \$ <u>759-10K#30010</u> DATE PAID: <u>PM 8/22</u> PROJECT NO.: <u>S1113860</u> FACILITY ID.: <u>S-1329</u>
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Vaquero Energy Inc.

Initial ERC App

**SUPPLEMENTAL INFORMATION
APPLICATION FOR AUTHORITY TO CONSTRUCT**

1. Equipment Location:

The tanks are located at the Hershey Lease located in the Heavy Oil Central stationary source. The tank battery is located in the SE ¼ Section 14, Township 30S, Range 29E. See Attachment 1.

2. Equipment Description:

- S-1329-6 – 1,600 BBL crude oil wash tank
- S-1329-7 - 1,600 BBL crude oil wash tank
- S-1329-8 – 1,600 BBL crude oil storage tank
- S-1329-10 - 1,600 BBL crude oil storage tank
- S-1329-11 - 1,600 BBL crude oil storage tank
- S-1329-12 - 1,600 BBL crude oil storage tank
- S-1329-31 – 2,400 BBL crude oil wash tank

3. Description of Actual Emissions Reduction:

On March 15, 2011, Vaquero Energy installed a vapor recovery system on the seven tanks located at the Hershey tank battery.

4. Baseline Period:

The vapor recovery system was in operation on March 15, 2011. The baseline period used was the preceding two calendar years beginning January 1, 2009 and ending December 31, 2010. The average of this period is representative of past operating practices, as shown by the attached throughput records for the period in question. The tanks operated on a year-round basis.

5. Emission Calculations:

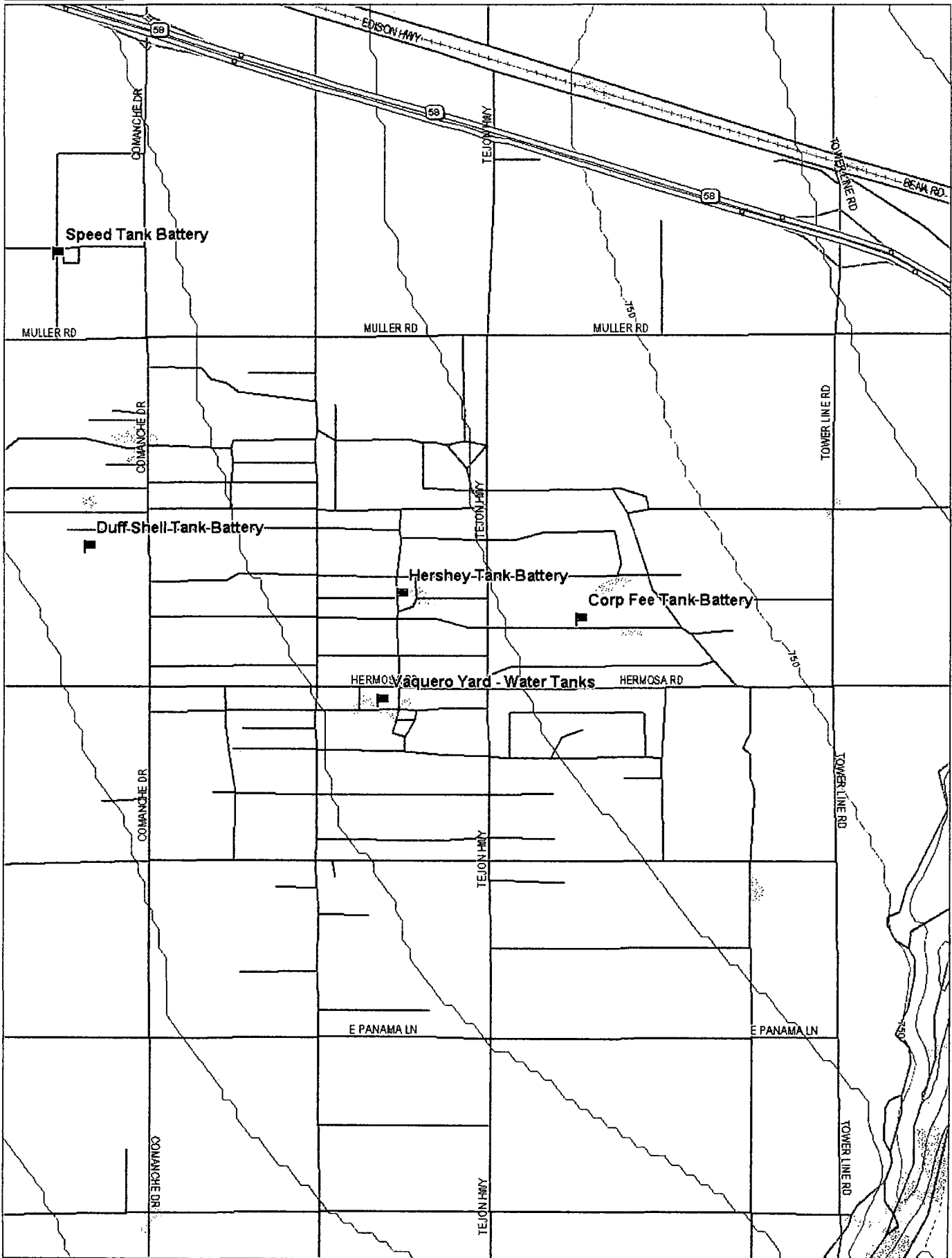
Details of the emission calculations below are included in Attachment 2.

Historic Actual Emissions (HAE) for the tanks is based on an average of the oil throughput for the baseline period. The throughput is collected from production reported to DOGGR and documented in Attachment 3.

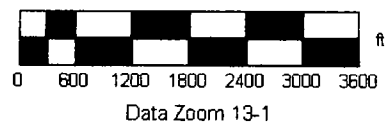
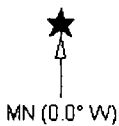
Historical Actual Emissions		
Permit	Equipment	VOC
S-1329-6	1,600 BBL crude oil wash tank	211
S-1329-7	1,600 BBL crude oil wash tank	211
S-1329-8	1,600 BBL crude oil storage tank	2,296
S-1329-10	1,600 BBL crude oil storage tank	2,665
S-1329-11	1,600 BBL crude oil storage tank	2,739
S-1329-12	1,600 BBL crude oil storage tank	2,370
S-1329-31	2,400 BBL crude oil wash tank	211
Total HAE		10,702

ATTACHMENT 1

LOCATION MAP



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ATTACHMENT 2
EMISSION CALCULATIONS

**Vaquero Energy
Hershey Lease
ERC Calculation**

	Jan 2009 - Dec 2010 Oil Production	2-Year Average (bbls)
Oil	567,552	283,776

		Actual Throughput	Emissions	
1600 Wash	S-1329-6	283,776	211	8/1/2009 - HOST TVP 0.26 @ 91F
1600 Wash	S-1329-7	283,776	211	8/1/2009 - HOST TVP 0.26 @ 91F
1600 Stock	S-1329-8	62,431	2,296	8/1/2009 - HOST TVP 0.26 @ 91F
1600 Stock	S-1329-10	76,620	2,665	8/1/2009 - HOST TVP 0.26 @ 91F
1600 Stock	S-1329-11	79,457	2,739	8/1/2009 - HOST TVP 0.26 @ 91F
1600 Stock	S-1329-12	65,268	2,370	8/1/2009 - HOST TVP 0.26 @ 91F
2400 Wash	S-1329-31	283,776	211	8/1/2009 - HOST TVP 0.26 @ 91F

	Wash Tanks	Stock Tanks	Total	
Tank Emissions	632	10070	10702	lbs
			5.35	tons
			(0.54)	10% ERC adjustment
			4.82	tons net
			9,632	lbs net

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-6-2
facility tank I.D.	Hershey Hot Wash
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, Tb (°F)	90
is this a constant-level tank? {yes, no}	yes
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		777
maximum annual fluid throughput (bbl)		283,776
-----This row only used if flashing losses occur in this tank-----		777
-----This row only used if flashing losses occur in this tank-----		283,776
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
(psia)	93.4	0.7850
(psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.69
paint factor, alpha		0.68
vapor density, V _w (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/year	lb/day
Standing Storage Loss	211	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	211	0.6

Summary Table	
Permit Number	S-1329-6-2
Facility Tank I.D.	Hershey Hot Wash
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	777
Maximum Annual Fluid Throughput (bbl/year)	283,776
Maximum Daily Oil Throughput (bbl/day)	777
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	211

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-7-2
facility tank I.D.	Hershey Wash
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, Tb (°F)	90
is this a constant-level tank? {yes, no}	yes
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
---- This row only used if shell is different color from roof----	3
---- This row only used if shell is different color from roof----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		777
maximum annual fluid throughput (bbl)		283,776
---- This row only used if flashing losses occur in this tank----		777
---- This row only used if flashing losses occur in this tank----		283,776
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
(psia)	93.4	0.7850
(psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.69
paint factor, alpha		0.68
vapor density, V _w (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/year	lb/day
Standing Storage Loss	211	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	211	0.6

Summary Table	
Permit Number	S-1329-7-2
Facility Tank I.D.	Hershey Wash
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	777
Maximum Annual Fluid Throughput (bbl/year)	283,776
Maximum Daily Oil Throughput (bbl/day)	777
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	211

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-8-2
facility tank I.D.	Hersh Stock
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, Tb (°F)	90
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	3
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		171
maximum annual fluid throughput (bbl)		62,431
-----This row only used if flashing losses occur in this tank-----		171
-----This row only used if flashing losses occur in this tank-----		62,431
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, Pa (psia)		14.47
(psia)	93.4	0.7850
(psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/year	lb/day
Standing Storage Loss	673	1.84
Working Loss	1,623	4.45
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	2,296	6.3

Summary Table	
Permit Number	S-1329-8-2
Facility Tank I.D.	Hersh Stock
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	171
Maximum Annual Fluid Throughput (bbl/year)	62,431
Maximum Daily Oil Throughput (bbl/day)	171
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.3
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	2,296

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-10-2
facility tank I.D.	Hersh Stock
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, Tb (°F)	90
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	3
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		210
maximum annual fluid throughput (bbl)		76,620
-----This row only used if flashing losses occur in this tank-----		210
-----This row only used if flashing losses occur in this tank-----		76,620
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
(psia)	93.4	0.7850
(psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/year	lb/day
Standing Storage Loss	673	1.84
Working Loss	1,992	5.46
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	2,665	7.3

Summary Table	
Permit Number	S-1329-10-2
Facility Tank I.D.	Hersh Stock
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	210
Maximum Annual Fluid Throughput (bbl/year)	76,620
Maximum Daily Oil Throughput (bbl/day)	210
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.3
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	2,665

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-11-2
facility tank I.D.	Hersh Stock
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, Tb (°F)	90
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.08
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	3
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		218
maximum annual fluid throughput (bbl)		79,457
-----This row only used if flashing losses occur in this tank-----		218
-----This row only used if flashing losses occur in this tank-----		79,457
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1848.9
atmospheric pressure, Pa (psia)		14.47
(psia)	93.4	0.7850
(psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.68
vapor density, V _w (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/year	lb/day
Standing Storage Loss	873	1.64
Working Loss	2,066	5.66
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	2,739	7.5

Summary Table	
Permit Number	S-1329-11-2
Facility Tank I.D.	Hersh Stock
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	218
Maximum Annual Fluid Throughput (bbl/year)	79,457
Maximum Daily Oil Throughput (bbl/day)	218
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	7.5
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	2,739

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-12-2
facility tank I.D.	Hersh Stock
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, Tb (°F)	90
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	3
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		179
maximum annual fluid throughput (bbl)		65,268
-----This row only used if flashing losses occur in this tank-----		179
-----This row only used if flashing losses occur in this tank-----		65,268
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, Pa (psia)		14.47
(psia)	93.4	0.7850
(psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		4106.21
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/year	lb/day
Standing Storage Loss	673	1.84
Working Loss	1,697	4.65
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	2,370	6.5

Summary Table	
Permit Number	S-1329-12-2
Facility Tank I.D.	Hersh Stock
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.8
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	179
Maximum Annual Fluid Throughput (bbl/year)	65,268
Maximum Daily Oil Throughput (bbl/day)	179
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	6.5
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	2,370

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1329-31-2
facility tank I.D.	Hersh Wash
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.26
liquid bulk storage temperature, T _b (°F)	90
is this a constant-level tank? {yes, no}	yes
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.8
capacity of tank (bbl)	2,400
conical or dome roof? {c, d}	c
shell height of tank (feet)	24
average liquid height (feet)	22
are the roof and shell the same color? {yes,no}	yes
For roof: color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
----This row only used if shell is different color from roof----	3
----This row only used if shell is different color from roof----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		777
maximum annual fluid throughput (bbl)		283,776
----This row only used if flashing losses occur in this tank----		777
----This row only used if flashing losses occur in this tank----		283,776
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
(psia)	93.4	0.7850
(psia)	82.6	0.5580
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	88.0	0.6612
roof outage, H _{ro} (feet)		0.2792
vapor space volume, V _v (cubic feet)		1285.69
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0044
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1016

Results	lb/year	lb/day
Standing Storage Loss	211	0.58
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	211	0.6

Summary Table	
Permit Number	S-1329-31-2
Facility Tank I.D.	Hersh Wash
Tank capacity (bbl)	2,400
Tank diameter (ft)	26.8
Tank shell height (ft)	24
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	777
Maximum Annual Fluid Throughput (bbl/year)	283,776
Maximum Daily Oil Throughput (bbl/day)	777
Maximum Annual Oil Throughput (bbl/year)	--
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.6
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	211

ATTACHMENT 3
LABORATORY DATA

**ZALCO LABORATORIES, INC.**

Analytical and Consulting Services

4309 Armour Avenue
Bakersfield, California 93308(661) 395-0539
FAX (661) 395-3069

CLIENT: Vaquero Energy Inc
Lab Order: 0907365
Project:
Client Sample ID: Hershey Wash Tank
Report Comment: Tank Temp 90

Report Date: 8/19/2009
Lab ID: 0907365-001A
Collection Date: 7/15/2009 8:00:00 AM
Matrix: PETROLEUM

Analyses	Method	Result	Units	Date Analyzed	Qual.
API GRAVITY BY ASTM D287 (HYDROMETER)					
API Gravity @ 60 F, Hydrometer	D287	16.1	60F	8/10/2009	
HOST - VAPOR PRESS.OF ROCS BY GC (LBNL)					
HOST Vapor Pres. of ROCs	HOST/LBNL	0.26	Psi	8/6/2009	
Tank Temp.	HOST/LBNL	90	F	8/6/2009	
Test Temp.	HOST/LBNL	91.0	F	8/6/2009	
Test Barometric Pres.	HOST/LBNL	29.52	in. of Hg	8/6/2009	
Test Atmospheric Pres.	HOST/LBNL	14.51	Psia	8/6/2009	

Qualifiers / Abbreviations:
 ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 H - Hold Time Exceeded

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 DLR: Detection Limit for Reporting
 NSS - Non-Sufficient Sample Amount