



January 27, 2011

Mr. Charlie Zeal
Illinois Environmental Protection Agency
Division of Air Pollution Control
1021 North Grand Avenue East
Springfield, Illinois 62794

**Subject: Response to Notice of Incompleteness
Application No. 10120040
ID No. 119090AA0**

Dear Mr. Zeal:

On behalf of Shell Oil Products US, URS Corporation is submitting the revised permit application package as discussed during our phone conversation on January 18, 2011. Also enclosed is the check for \$4,500.00, which was arrived at by subtracting the \$1,000.00 previously sent with the initial permit application from the updated \$5,500.00 permit fee. We appreciate your earliest possible review for this air permit application. If you have any questions during your review, please contact Heather Breitenbach, at heather_breitenbach@urscorp.com (507/302-9541), or me at ken_hagg@urscorp.com (314/429-0100).

Thank you for your assistance.

Sincerely,

Ken Hagg, P.E.
Vice-President

Enclosures:

Cc: Kevin Dyer, SOPUS
Marty Reynolds, Village of Roxana
David Webb, IDPH
Bob Billman, URS Corporation



| | | |
|--|-----------------------------------|----------------|
| FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION | FOR AGENCY USE ONLY | |
| | ID NUMBER: | |
| | PERMIT #: | |
| | COMPLETE <input type="checkbox"/> | DATE COMPLETE: |
| INCOMPLETE <input type="checkbox"/> | | |
| CHECK #: | ACCOUNT NAME: | |

THIS FORM IS TO BE USED BY ALL SOURCES TO SUPPLY FEE INFORMATION THAT MUST ACCOMPANY ALL CONSTRUCTION PERMIT APPLICATIONS. **THIS APPLICATION MUST INCLUDE PAYMENT IN FULL TO BE DEEMED COMPLETE.** MAKE CHECK OR MONEY ORDER PAYABLE TO THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY. SEND TO THE ADDRESS ABOVE. DO NOT SEND CASH. REFER TO INSTRUCTIONS (197-INST) FOR ASSISTANCE.

| SOURCE INFORMATION | |
|--|---|
| 1) SOURCE NAME: Soil Vapor Extraction Treatment System | |
| 2) PROJECT NAME: Roxana Site | 3) SOURCE ID NO. (IF APPLICABLE): |
| 4) CONTACT NAME: Kevin E. Dyer | 5) CONTACT PHONE NUMBER: (618) 288-7237 |

| FEE DETERMINATION | | |
|---|----------------------------|-------------|
| 6) FILL IN THE FOLLOWING THREE BOXES AS DETERMINED IN SECTIONS 1 THROUGH 4 BELOW: | | |
| \$ 5000 | + | \$ 500 |
| SECTION 1 SUBTOTAL | | = \$ 5,500 |
| | SECTION 2, 3 OR 4 SUBTOTAL | GRAND TOTAL |

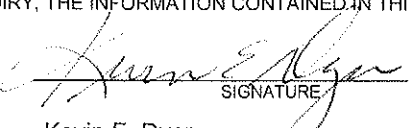
| SECTION 1: STATUS OF SOURCE / PURPOSE OF SUBMITTAL | |
|--|----------------------------------|
| 7) YOUR APPLICATION WILL FALL UNDER ONLY ONE OF THE FOLLOWING SIX CATEGORIES DESCRIBED BELOW. CHECK THE BOX THAT APPLIES, ENTER THE CORRESPONDING FEE IN THE BOX TO THE RIGHT AND COPY THIS FEE INTO THE SECTION 1 SUBTOTAL BOX ABOVE. PROCEED TO APPLICABLE SECTIONS. | |
| FOR PURPOSES OF THIS FORM: | |
| <ul style="list-style-type: none"> • MAJOR SOURCE IS A SOURCE THAT IS REQUIRED TO OBTAIN A CAAPP PERMIT. • SYNTHETIC MINOR SOURCE IS A SOURCE THAT HAS TAKEN LIMITS ON POTENTIAL TO EMIT IN A PERMIT TO AVOID CAAPP PERMIT REQUIREMENTS (E.G., FESOP). • NON-MAJOR SOURCE IS A SOURCE THAT IS NOT A MAJOR OR SYNTHETIC MINOR SOURCE. | |
| <input type="checkbox"/> EXISTING SOURCE WITHOUT STATUS CHANGE OR WITH STATUS CHANGE FROM SYNTHETIC MINOR TO MAJOR SOURCE OR VICE VERSA. ENTER \$0 AND PROCEED TO SECTION 2. | \$ 5000 SECTION 1 SUBTOTAL |
| <input type="checkbox"/> EXISTING NON-MAJOR SOURCE THAT WILL BECOME SYNTHETIC MINOR OR MAJOR SOURCE. ENTER \$5,000 AND PROCEED TO SECTION 4. | |
| <input type="checkbox"/> EXISTING MAJOR OR SYNTHETIC MINOR SOURCE THAT WILL BECOME NON-MAJOR SOURCE. ENTER \$4,000 AND PROCEED TO SECTION 3. | |
| <input checked="" type="checkbox"/> NEW MAJOR OR SYNTHETIC MINOR SOURCE. ENTER \$5,000 AND PROCEED TO SECTION 4. | |
| <input type="checkbox"/> NEW NON-MAJOR SOURCE. ENTER \$500 AND PROCEED TO SECTION 3. | |
| <input type="checkbox"/> AGENCY ERROR. IF THIS IS A TIMELY REQUEST TO CORRECT AN ISSUED PERMIT THAT INVOLVES ONLY AN AGENCY ERROR AND IF THE REQUEST IS RECEIVED WITHIN THE DEADLINE FOR A PERMIT APPEAL TO THE POLLUTION CONTROL BOARD, THEN ENTER \$0. SKIP SECTIONS 2, 3 AND 4. PROCEED DIRECTLY TO SECTION 5. | |

| SECTION 2: SPECIAL CASE FILING FEE |
|--|
| 8) FILING FEE. IF THE APPLICATION ONLY ADDRESSES ONE OR MORE OF THE FOLLOWING, CHECK THE APPROPRIATE BOXES, ENTER \$500 IN THE SECOND BOX UNDER FEE DETERMINATION ABOVE, SKIP SECTIONS 3 AND 4 AND PROCEED DIRECTLY TO SECTION 5. OTHERWISE, PROCEED TO SECTION 3 OR 4, AS APPROPRIATE. |
| <input type="checkbox"/> ADDITION OR REPLACEMENT OF CONTROL DEVICES ON PERMITTED UNITS <input type="checkbox"/> PILOT PROJECTS/TRIAL BURNS BY A PERMITTED UNIT <input type="checkbox"/> APPLICATIONS ONLY INVOLVING INSIGNIFICANT ACTIVITIES UNDER 35 IAC 201.210 (MAJOR SOURCES ONLY) <input checked="" type="checkbox"/> LAND REMEDIATION PROJECTS <input type="checkbox"/> REVISIONS RELATED TO METHODOLOGY OR TIMING FOR EMISSION TESTING <input type="checkbox"/> MINOR ADMINISTRATIVE-TYPE CHANGE TO A PERMIT |

THIS AGENCY IS AUTHORIZED TO REQUIRE AND YOU MUST DISCLOSE THIS INFORMATION UNDER 415 ILCS 5/39. FAILURE TO DO SO COULD RESULT IN THE APPLICATION BEING DENIED AND PENALTIES UNDER 415 ILCS 5 ET SEQ. IT IS NOT NECESSARY TO USE THIS FORM IN PROVIDING THIS INFORMATION. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

| SECTION 3: FEES FOR CURRENT OR PROJECTED NON-MAJOR SOURCES | |
|---|-----|
| 9) IF THIS APPLICATION CONSISTS OF A SINGLE NEW EMISSION UNIT OR NO MORE THAN TWO MODIFIED EMISSION UNITS, ENTER \$500. | 9) |
| 10) IF THIS APPLICATION CONSISTS OF MORE THAN ONE NEW EMISSION UNIT OR MORE THAN TWO MODIFIED UNITS, ENTER \$1,000. | 10) |
| 11) IF THIS APPLICATION CONSISTS OF A NEW SOURCE OR EMISSION UNIT SUBJECT TO SECTION 39.2 OF THE ACT (I.E., LOCAL SITING REVIEW); A COMMERCIAL INCINERATOR OR A MUNICIPAL WASTE, HAZARDOUS WASTE, OR WASTE TIRE INCINERATOR; A COMMERCIAL POWER GENERATOR; OR AN EMISSION UNIT DESIGNATED AS A COMPLEX SOURCE BY AGENCY RULEMAKING, ENTER \$15,000. | 11) |
| 12) IF A PUBLIC HEARING IS HELD (SEE INSTRUCTIONS), ENTER \$10,000. | 12) |
| 13) SECTION 3 SUBTOTAL (ADD LINES 9 THROUGH 12) TO BE ENTERED ON PAGE 1. | 13) |

| SECTION 4: FEES FOR CURRENT OR PROJECTED MAJOR OR SYNTHETIC MINOR SOURCES | | |
|--|--|-----|
| Application Contains Modified Emission Units Only | 14) FOR THE FIRST MODIFIED EMISSION UNIT, ENTER \$2,000. | 14) |
| | 15) NUMBER OF ADDITIONAL MODIFIED EMISSION UNITS = _____ X \$1,000. | 15) |
| | 16) LINE 14 PLUS LINE 15, OR \$5,000, WHICHEVER IS LESS. | 16) |
| Application Contains New And/Or Modified Emission Units | 17) FOR THE FIRST NEW EMISSION UNIT, ENTER \$4,000. | 17) |
| | 18) NUMBER OF ADDITIONAL NEW AND/OR MODIFIED EMISSION UNITS = _____ X \$1,000. | 18) |
| | 19) LINE 17 PLUS LINE 18, OR \$10,000, WHICHEVER IS LESS. | 19) |
| Application Contains Netting Exercise | 20) NUMBER OF INDIVIDUAL POLLUTANTS THAT RELY ON A NETTING EXERCISE OR CONTEMPORANEOUS EMISSIONS DECREASE TO AVOID APPLICATION OF PSD OR NONATTAINMENT NSR = _____ X \$3,000. | 20) |
| Additional Supplemental Fees | 21) IF THE NEW SOURCE OR EMISSION UNIT IS SUBJECT TO SECTION 39.2 OF THE ACT (I.E., SITING); A COMMERCIAL INCINERATOR OR OTHER MUNICIPAL WASTE, HAZARDOUS WASTE, OR WASTE TIRE INCINERATOR; A COMMERCIAL POWER GENERATOR; OR ONE OR MORE OTHER EMISSION UNITS DESIGNATED AS A COMPLEX SOURCE BY AGENCY RULEMAKING, ENTER \$25,000. | 21) |
| | 22) IF THE SOURCE IS A NEW MAJOR SOURCE SUBJECT TO PSD, ENTER \$12,000. | 22) |
| | 23) IF THE PROJECT IS A MAJOR MODIFICATION SUBJECT TO PSD, ENTER \$6,000. | 23) |
| | 24) IF THIS IS A NEW MAJOR SOURCE SUBJECT TO NONATTAINMENT (NAA) NSR, ENTER \$20,000. | 24) |
| | 25) IF THIS IS A MAJOR MODIFICATION SUBJECT TO NAA NSR, ENTER \$12,000. | 25) |
| | 26) IF APPLICATION INVOLVES A DETERMINATION OF CLEAN UNIT STATUS AND THEREFORE IS NOT SUBJECT TO BACT OR LAER, ENTER \$5,000 PER UNIT FOR WHICH A DETERMINATION IS REQUESTED OR OTHERWISE REQUIRED. _____ X \$5,000. | 26) |
| | 27) IF APPLICATION INVOLVES A DETERMINATION OF MACT FOR A POLLUTANT AND THE PROJECT IS NOT SUBJECT TO BACT OR LAER FOR THE RELATED POLLUTANT UNDER PSD OR NSR (E.G., VOM FOR ORGANIC HAP), ENTER \$5,000 PER UNIT FOR WHICH A DETERMINATION IS REQUESTED OR OTHERWISE REQUIRED. _____ X \$5,000. | 27) |
| 28) IF A PUBLIC HEARING IS HELD (SEE INSTRUCTIONS), ENTER \$10,000. | 28) | |
| 29) SECTION 4 SUBTOTAL (ADD LINES 16 AND LINES 19 THROUGH 28) TO BE ENTERED ON PAGE 1. | 29) | |

| SECTION 5: CERTIFICATION | |
|--|---------------------------|
| NOTE: APPLICATIONS WITHOUT A SIGNED CERTIFICATION WILL BE DEEMED INCOMPLETE. | |
| 30) I CERTIFY UNDER PENALTY OF LAW THAT, BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE INFORMATION CONTAINED IN THIS FEE APPLICATION FORM IS TRUE, ACCURATE AND COMPLETE. | |
| BY:  | Principal Project Manager |
| SIGNATURE | TITLE OF SIGNATORY |
| Kevin E. Dyer | 01/25/16 |
| TYPED OR PRINTED NAME OF SIGNATORY | DATE |



| | |
|---|---------------------------|
| Construction Permit Application For a FESOP Source (FORM APC628) | For Illinois EPA use only |
| | BOA ID No.: |
| | Application No.: |
| | Date Received: |

This form is to be used to supply information to obtain a construction permit for a proposed project involving a Federally Enforceable State Operating Permit (FESOP) or Synthetic Minor source, including construction of a new FESOP source. Other necessary information must accompany this form as discussed in the "General Instructions For Permit Applications," Form APC-201.

| Proposed Project | |
|---|--|
| 1. Working Name of Proposed Project: Soil Vapor Extraction Treatment System | |
| 2. Is the project occurring at a source that already has a permit from the Bureau of Air (BOA)? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If Yes, provide BOA ID Number: _____ | |
| 3. Does this application request a revision to an existing construction permit issued by the BOA? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If Yes, provide Permit Number: _____ | |
| 4. Does this application request that the new/modified emission units be incorporated into an existing FESOP issued by the BOA? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If Yes, provide Permit Number: _____ | |

| Source Information | | |
|--|---|-----------------------|
| 5. Source name:* Soil Vapor Extraction Treatment System | | |
| 6. Source street address:* corner of Chaffer St. & 8th St. | | |
| 7. City: Roxana | 8. County: Madison | 9. Zip code: 63110 |
| ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN ID NUMBER. | | |
| 10. Is the source located within city limits? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, provide Township Name: | | |
| 11. Description of source and product(s) produced: Internal Combustion Engine/Treated Soil Vapor | 12. Primary Classification Code of source: SIC: 4613 or NAICS: _____ | |
| 13. Latitude (DD:MM:SS.SSSS): TBD | 14. Longitude (DD:MM:SS.SSSS): TBD | |

* If this information different than previous information, then complete a new Form 200-CAAPP to change the source name in initial FESOP application for the source or Form APC-620 for Air Permit Name and/or Ownership Change if the FESOP has been previously issued.

| Applicant Information | |
|--|---|
| 15. Who is the applicant? <input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator | 16. All correspondence to: (check one) <input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Source |
| 17. Applicant's FEIN: 522074528 | 18. Attention name and/or title for written correspondence: Kevin E. Dyer / Principal Program Manager |

| Owner Information* | | |
|---------------------------------------|---------------|---------------------|
| 19. Name: Shell Oil Products US | | |
| 20. Address: 17 Junction Dr., PMB 399 | | |
| 21. City: Glen Carbon | 22. State: IL | 23. Zip code: 62034 |

* If this information different than previous information, then complete Form 272-CAAPP for a Request for Ownership Change for CAAPP Permit for an initial FESOP application for the source or Form APC-620 for Air Permit Name and/or Ownership Change if the FESOP has been previously issued.

| Operator Information (If Different from Owner)* | | |
|--|---------------|---------------------|
| 24. Name URS Corporation | | |
| 25. Address: 1001 Highlands Plaza Dr., Suite 300 | | |
| 26. City: St. Louis | 27. State: MO | 28. Zip code: 63110 |

* If this information different than previous information, then complete a new Form 200-CAAPP to change the source name in initial FESOP application for the source or Form APC-620 for Air Permit Name and/or Ownership Change if the FESOP has been previously issued.

| Technical Contacts for Application | |
|--|---|
| 29. Preferred technical contact: (check one) <input type="checkbox"/> Applicant's contact <input checked="" type="checkbox"/> Consultant | |
| 30. Applicant's technical contact person for application: | |
| 31. Contact person's telephone number | 32. Contact person's email address: |
| 33. Applicant's consultant for application: Thomas Adams | |
| 34. Consultant's telephone number: (314) 429-0100 | 35. Consultant's email address: Thomas_Adams@urscorp.com |

| Review Of Contents of the Application | |
|--|--|
| 36. Is the emission unit covered by this application already constructed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "yes", provide the date construction was completed: | |
| Note: The Illinois EPA is unable to issue a construction permit for a emission unit that has already been constructed. | |
| 37. Does the application include a narrative description of the proposed project? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 38. Does the application contain a list or summary that clearly identifies the emission units and air pollution control equipment that are part of the project? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 39. Does the application include process flow diagram(s) for the project showing new and modified emission units and control equipment and related existing equipment and their relationships? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 40. If the project is at a source that has not previously received a permit from the BOA, does the application include a source description, plot plan and site map? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |

Review Of Contents of the Application (continued)

| | |
|---|--|
| 41. Does the application include relevant information for the proposed project as requested on Illinois EPA, BOA application forms (or otherwise contain all the relevant information)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 42. Does the application identify and address all applicable or potentially applicable emissions standards, including: a. State emission standards (35 IAC Chapter I, Subtitle B); b. Federal New Source Performance Standards (40 CFR Part 60); c. Federal standards for HAPs (40 CFR Parts 61 and 63)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 43. Does the application address whether the proposed project or the source could be a major project for Prevention of Significant Deterioration (PSD), 40 CFR 52.21? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| 44. Does the application address for which pollutant(s) the proposed project or the source could be a major project for PSD, 40 CFR 52.21? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| 45. Does the application address whether the proposed project or the source could be a major project for "Nonattainment New Source Review," (NA NSR), 35 IAC Part 203? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| 46. Does the application address for which pollutant(s) the proposed project or the source could be a major project for NA NSR, 35 IAC Part 203? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| 47. Does the application address whether the proposed project or the source could potentially be subject to federal Maximum Achievable Control Technology (MACT) standard under 40 CFR Part 63 for Hazardous Air Pollutants (HAP) and identify the standard that could be applicable? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A* * Source not major <input checked="" type="checkbox"/> Project not major <input checked="" type="checkbox"/> |
| 48. Does the application identify the HAP(s) from the proposed project or the source that would trigger the applicability of a MACT standard under 40 CFR Part 63? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| 49. Does the application include a summary of the current and the future potential emissions of the source after the proposed project has been completed for each criteria air pollutant and/or HAP (tons/year)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A* * Applicability of PSD, NA NSR or 40 CFR 63 not applicable to the source's emissions. |
| 50. Does the application include a summary of the requested permitted annual emissions of the proposed project for the new and modified emission units (tons/year)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A* * Project does not involve an increase in emissions from new or modified emission units. |
| 51. Does the application include a summary of the requested permitted production, throughput, fuel, or raw material usage limits that correspond to the annual emissions limits of the proposed project for the new and modified emission units? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A* * Project does not involve an increase in emissions from new or modified emission units. |
| 52. Does the application include sample calculations or methodology for the emission estimations and the requested emission limits? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 53. Does the application address the relationships with and implications of the proposed project for the source's FESOP? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A* *FESOP not yet issued. |
| 54. If the application contains information that is considered a TRADE SECRET, has such information been properly marked and claimed and other requirements to perfect such a claim been satisfied in accordance with 35 IAC Part 130? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A* * No information in the application is claimed to be a TRADE SECRET |

Note: "Claimed information will not be legally protected from disclosure to the public if it is not properly claimed or does not qualify as trade secret information.

| Review Of Contents of the Application (continued) | |
|---|---|
| 55. If the source is located in a county other than Cook County, are two separate copies of this application being submitted? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 56. If the source is located in Cook County, are three separate copies of this application being submitted? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 57. Does the application include a completed "FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION," Form 197-FEE, for the emission units and control equipment for which a permit for construction or modification is being sought? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 58. Does the application include a check in the proper amount for payment of the Construction permit fee? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |

Note: Answering "No" to Items 36 through 58 may result in the application being deemed incomplete.

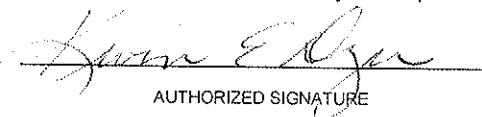
| Signature Block |
|--|
| Pursuant to 35 IAC 201.159, all applications and supplements thereto shall be signed by the owner and operator of the source, or their authorized agent, and shall be accompanied by evidence of authority to sign the application. Applications without a signed certification will be deemed incomplete. |
| 59. Authorized Signature: |
| I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete and that I am a responsible official for the source, as defined by Section 39.5(1) of the Environmental Protection Act. In addition, the technical contact person identified above is authorized to submit (by hard copy and/or by electronic copy) any supplemental information related to this application that may be requested by the Illinois EPA. |
| BY: <u></u> Principal Program Manager |
| AUTHORIZED SIGNATURE TITLE OF SIGNATORY |
| <u>Kevin E. Dyer</u> <u>01 25 11</u> |
| TYPED OR PRINTED NAME OF SIGNATORY DATE |

Exhibit 260-1
SVE Pilot Test System Description and Emission Calculations

Shell Oil Products US will be conducting two pilot tests at the Roxana site as shown in Figure 4. At each pilot test, one extraction well will be used to extract soil vapor. Each pilot test will be equipped with a knockout tank, internal combustion engine (ICE), and water pump and storage. The motor for the ICE will be used to develop the vacuum pressure necessary to extract and convey the soil vapor to a knockout tank, where the soil vapor and condensate water will be separated. The vapors will be conveyed by vacuum to the ICE unit for destruction of hydrocarbon constituents. The condensate water will be conveyed by a water pump to a holding tank for subsequent transport and treatment/discharge.

Pilot Test #1 will be performed near VMP-4 and Pilot Test #2 will be performed near VMP-13 at the POTW, as shown on Figure 4. Each pilot test will be conducted over several weeks and will be subject to the data collected and field discretion. Pilot Test #1 will be conducted first followed by Pilot Test #2 to gauge the system's effectiveness independently. At each pilot test, the blower will extract vapor at three test rates: 50, 75, and 90 cubic feet per minute (cfm). At 50 cfm approximately two pore volumes will be removed per day from the subsurface.

The same ICE unit, which will be developing the vacuum on the well, will be used throughout each pilot test to combust volatiles in the extracted vapor. The engine's hydrocarbon destruction efficiency is estimated between 96 - 99 percent. The maximum rated hydrocarbon loading to the engine is 36 pounds per hour. Based on the anticipated destruction efficiency and the maximum loading rate, the maximum potential hydrocarbon mass emission rate is 0.76 pounds per hour (lb/hr), as shown in Table 1 below, and Table 2 contains the potential criteria pollutant emissions.

Table 1: Calculation of Potential HAPS Emissions

| Avg HAPS (mg/m ³) | Volume flow rate (cfm) | HAPS mass flow rate (kg/day) | HAPS mass flow rate (lb/day) | Efficiency | Emission rate (lb/day) | Emission rate (lb/hr) | Potential emission rate (TPY) |
|-------------------------------|------------------------|------------------------------|------------------------------|------------|------------------------|-----------------------|-------------------------------|
| 56500 | 50 | 115.21 | 254.02 | 0.96 | 10.16 | 0.42 | 1.85 |
| 56500 | 75 | 172.81 | 381.03 | 0.96 | 15.24 | 0.64 | 2.78 |
| 56500 | 90 | 207.37 | 457.23 | 0.96 | 18.29 | 0.76 | 3.34 |

Table 2: Calculation of Potential Criteria Pollutant Emissions

| Maximum Design Rate (MMBTU/hr) | Maximum Fuel Throughput | SO ₂ ¹ Emission Factor (lb/MMBtu) | NO _x ² Emission Factor (lb/MMBtu) | CO ² Emission Factor (lb/MMBtu) | PM ¹ Emission Factor (lb/MMBtu) | Potential SO ₂ Emission Rate (TPY) | Potential NO _x Emission Rate (TPY) | Potential CO Emission Rate (TPY) | Potential PM Emission Rate (TPY) |
|--------------------------------|-------------------------|---|---|--|--|---|---|----------------------------------|----------------------------------|
| 5.67 | 5400 | SCF/hr | 3.40E-03 | | 6.60E-03 | 8.44E-02 | | | 1.64E-01 |
| 0.6335 | 7 | gal/hr | | 1.40E-02 | 6.00E-03 | | 3.88E-02 | 1.66E-02 | |

1 Emission factor from AP-42 Stationary internal Combustion Sources, 3.1 Stationary Gas Turbines (natural gas)

2 Emission factor from manufacturer (propane)