

917 1st Avenue North, Suite 3 Billings, Montana 59101 Telephone: 406-259-1033 Fax: 406-259-1099

REMEDIATION PROGRESS REPORT First Quarter 2015

Phillips 66 Facility No. 255353 (AOC 1396) 600 Westlake Avenue North Seattle, Washington 98107 Washington State Department of Ecology Facility ID: 46445373

> Submitted to: Mr. Roger Nye Washington State Department of Ecology 3190 160th Avenue Southeast Bellevue, Washington 98008-5452

> > Submitted on behalf of: Ed Ralston Phillips 66 Company Remediation Management 76 Broadway Sacramento, California 95818

> > Submitted by: Cardno 917 1st Avenue North, Suite 3 Billings, Montana 59101

Cardno ATC Job No. Z076000073

April 17, 2015

: on behalf of Keith Fox

Senior Project Engineer

Kyle Sattle Senior Project Manager

Cardno' ATC Shaning the Future

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| Cardno ATC Contact Person: | | Kyle Sattler, Senior Project Manager | | | | | |
|--|-----------------------------|--|----------------------|--|--|--|--|
| Department of Ecology Facility ID: | | 46445373 | | | | | |
| LUST Facility No.: | | 8463 | | | | | |
| Voluntary Cleanup Program No. | | NW1714 | | | | | |
| Current Remediation Techniques: | | Soil vapor extraction (SVE) and air sparging (AS) | | | | | |
| Reporting Period: | | January 1 through March 31, 2015 | | | | | |
| REMEDIATION SYSTEM, UTIL | LITIES, & PERMITS | | | | | | |
| Remediation Equipment: | | SVE: Two Sutorbilt 10-HP blowers. AS HP compressor. | : One Rietschle 10 | | | | |
| Utilities In Use: | | Electrical Service, Seattle City Light, M | leter # 849179 | | | | |
| PSCAA Permit: | | Registration No. 29548 | | | | | |
| KCIW Permit: | | Discharge Authorization No. 4262-01 | i Trink za mili stij | | | | |
| SVE SYSTEM OPERATIONAL | DATA | | | | | | |
| Mercer-Westlake (Blower #B-701 | | Terry-Valley (Blower #B-801) | en la sue degen | | | | |
| Hours Operated This Period: | 2,019 | Hours Operated This Period: | 1,268.25 | | | | |
| Percent Runtime This Period: | 93.5% | Percent Runtime This Period: 58.7% | | | | | |
| Cumulative Operating Hours: | 10,047.25 | Cumulative Operating Hours: 9,346.50 | | | | | |
| Cumulative Percent Runtime: | 91.1% | Cumulative Percent Runtime: | 84.8% | | | | |
| AS SYSTEM OPERATIONAL | DATA | | | | | | |
| Hours Operated This Period: | | 2,070.25 | | | | | |
| Percent Runtime This Period: | | 95.8% | | | | | |
| Cumulative Operating Hours: | | 10,183.50 | | | | | |
| Cumulative Percent Runtime: | | 92.3% | | | | | |
| ESTIMATED REMOVAL RATE | S | | | | | | |
| TPHg Removed This Period: | Hard Street Barrier Barrier | 21 pounds | | | | | |
| TPHg Removal Rate This Period: | | 0.013 pounds per hour, average for the | e period | | | | |
| TPHg Removal Rate Previous Per | iod: | 0.06 pounds per hour, average for the | period | | | | |
| Cumulative TPHg Removed: | | 3,039 pounds | | | | | |
| Benzene Removed This Period: | 0.03 pounds | Ethylbenzene Removed This Period: | 0.08 pounds | | | | |
| Cumulative Benzene Removed: | 1.80 pounds | Cumulative Ethylbenzene Removed: | 22.40 pounds | | | | |
| Toluene Removed This Period: | 0.06 pounds | Xylenes Removed Rate This Period: | 0.16 pounds | | | | |
| Cumulative Toluene Removed: | 17.19 pounds | Cumulative Xylenes Removed: | 231.03 pounds | | | | |

Comments:

The (SVE) system consists of two blowers that extract soil vapors from a total of 36 vertical wells (19 in Mercer Street, 17 in Terry Avenue) and 16 horizontal wells (7 in Valley Street, 9 in Westlake Avenue). The AS system supplies compressed air to a total of 62 air sparge wells (27 in Mercer Street, 14 in Valley Street, 21 in Westlake Avenue). The locations of the SVE and AS wells are shown on Figure 1. The SVE blowers discharge vapors to an off-gas treatment system that uses GAC to reduce air emissions to permitted levels. Water from SVE moisture separators is also treated with GAC before discharging to the King County sewer system. The system layout is shown on Figure 2. System start-up was completed on December 27, 2013.

Blower 701 (Mercer & Westlake) was down between January 4 and January 6 for approximately 54 hours due to failed motor drive belts. The entire system was shut down on January 20 for approximately 4 hours so that Cardno ERI could remove water from SVE wells using a contracted vacuum truck. The entire system was down between February 14 and February 16 for approximately 56 hours. The outage was due to the current property owner temporarily shutting down the electrical service to the feeder panel that supplies power to the system so that a dewatering system and equipment could be removed. Blower 801 (Terry & Valley) was shut down on February 25, initially to test for rebound in SVE wells. After further evaluation of optimization results, the blower remained off through the end of March. The entire system was shut down on March 23 and 24 for groundwater sampling of area monitoring wells.



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Compliance samples per a PSCAA permit (Registration #29548) were collected on January 20, February 25, and March 18. Laboratory analytical reports are included in Appendix A, and results are summarized in Table 1. The locations of the sample ports are shown on Figure 2. The PSCAA permit specifies that a control efficiency of 97% must be demonstrated when total petroleum hydrocarbon (TPH) concentrations at the inlets to the GAC vessels are 200 ppmv or greater. TPH concentrations have never exceeded this threshold; therefore control efficiency is not reported. (NOTE: The PSCAA permit specifies vapor concentrations as TPH, while the analytical laboratory reports Method TO-15 results as THCg. For reporting purposes, TPH and THCg are assumed to be equivalent). A modification to the discharge permit to reduce carbon breakthrough monitoring to bi-weekly, and allow removal of the vapor control system when TPHg emissions drop below 2.74 lbs./day AND benzene emissions drop below 0.018 lbs./day was approved by PSCAA on September 2, 2014. A copy of the approved PSCAA permit is provided in Appendix B. On March 18, Cardno submitted a Notice of Vapor Control Removal letter to PSCAA, along with data showing estimated emissions were below the limits for both TPHg and benzene established by Condition 11 of the modified permit. Cardno calculated the maximum potential to emit at 595 pounds per year for TPHg (1.63 pounds per day), and 0.58 pounds per year for Benzene (0.00158 pounds per day). These calculated emission rates are below the limits established by Condition 11 of the modified permit. Cardno calculated the maximum potential to emit at 595 pounds per year for TPHg (1.63 pounds per day), and 0.58 pounds per year for Benzene (0.00158 pounds per day). These calculated emission rates are below the limits established by Condition 11 of the modified permit for both TPHg and benzene. PSCAA subsequently granted approval on April 2, 2015 via electronic mail to remove the vapor controls.

Compliance samples per the KCIW permit (Authorization #4262-01, Expiration: 6/30/2018) were collected on January 21, February 25, and March 18. Laboratory analytical reports are included in Appendix A, and results are summarized in Table 2. The locations of the sample ports are shown on Figure 2. All samples demonstrated compliance with permit limits summarized in Table 2. BTEX results were below reporting limits for all samples, with the exception of all BTEX constituents detected in the influent sample collected on January 21. TPHg was detected at 827 mg/L in the influent sample collected January 21, 2015. A total of 6,810 gallons of treated water were discharged to the King County sewer system during the period.

Steps taken to optimize the system during the first quarter of 2015 included removing approximately 1,400 gallons of water from SVE wells by connecting a vacuum truck to the manifolds. Water was removed from wells M1, M2, M5 through M10, M12, M13, and M19 on the Westlake-Mercer manifold; wells TEFR1, TMW48, TMW65, TSVE1, TSVE3, TSVE4, TSVE7, TSVE12, V1, V2, V4, V7, and V9 were evacuated on the Terry-Valley manifold. Evacuated water was emptied into the system secondary containment for disposal via the GAC treatment system. The presence of water in the SVE wells was likely due to periodic high groundwater levels saturating the soils around certain remediation wells.

Cardno also conducted weekly field visits to collect PID readings, optimize flow rates, and toggle wells on and off in an effort to determine if any significant vapor concentrations could be extracted. The SVE wells in Westlake were also operated for approximately three days each to test for rebound since the wells were turned off in April of 2014. Vapor concentrations from Westlake wells were not significant. Removal rates have bottomed out, as shown on the Cumulative TPHg and BTEX Removal Graph, with the average calculated removal rate for the period at 0.03 pounds TPHg per hour, a 50% decrease compared to the rate from the previous period; total estimated TPHg removal was 21 pounds.

Recommendations:

- Take the system offline for an extended period, followed by rebound testing for the entire system:
- If the system is run for an extended period, disconnect vapor controls if concentrations fall to deminimis levels per PSCAA approval to removal of the vapor controls dated April 2, 2015.

Table 1. Vapor Phase Analytical Results Summary PHILLIPS 66 FACILITY #255353 (AOC 1396)

| Sample | Sample | | *THCg (ppmv) | | | | | |
|-----------------|----------|---------|----------------|---------------|-----------------------|----------------|---------------|------|
| Location | Date | THCg | Benzene | Toluene | (/m3) Ethylbenzene | m&p Xylenes | o- Xylenes | |
| V1 Influent | | 77,100 | ND<12.6 | 121 | 86 | 411 | 81.8 | 18.3 |
| V1 Intermediate | 01/27/14 | 54,100 | ND<21.9 | 128 | ND<59.3 | ND<119 | ND<59.3 | 12.8 |
| V1 Effluent | | 30,500 | ND<12.2 | ND<12.3 | ND<12.4 | ND<12.5 | ND<12.6 | 7.2 |
| V1 Influent | | 158,000 | 84 | 598 | 1,370 | 9,450 | 2,150.0 | 37.4 |
| V1 Intermediate | 02/19/14 | ND<2040 | ND<10.9 | ND<25.9 | ND<29.6 | ND<59.1 | ND<29.6 | NC |
| V1 Effluent | | 7,800 | ND<10.9 | 38 | ND<29.6 | ND<59.1 | ND<29.6 | 1.8 |
| V1 Influent | | 181,000 | 227 | 2,380 | 3,110 | 21,000 | 9,420.0 | 42.9 |
| V1 Intermediate | 03/10/14 | 4,560 | ND<11.3 | 27.6 | ND<30.6 | ND<61.2 | ND<30.6 | 1.1 |
| V1 Effluent | | 8,660 | ND<13.6 | 40 | ND<37.0 | ND<73.9 | ND<37.0 | 2.1 |
| V1 Influent | | 156,000 | 119 | 2,050 | 1,430 | 9,170 | 3,630.0 | 36.9 |
| V1 Intermediate | 04/16/14 | ND<1220 | ND<6.5 | 32 | ND<17.6 | ND<35.2 | ND<17.6 | NC |
| V1 Effluent | | ND<1220 | ND<6.5 | ND<15.4 | ND<17.6 | ND<35.2 | ND<17.6 | NC |
| V1 Influent | | 107,000 | 28 | 483 | 745 | 7,240 | 2,720.0 | 25.3 |
| V1 Intermediate | 05/08/14 | 4,120 | ND<6.5 | ND<15.4 | ND<17.6 | ND<35.2 | ND<17.6 | 1.0 |
| V1 Effluent | | 5,110 | ND<6.5 | ND<15.4 | ND<17.6 | ND<35.2 | ND<17.6 | 1.2 |
| V1 Influent | | 55,200 | ND<76 | 309 | 277 | 5,840 | 2,280 | 13.1 |
| V1 Intermediate | 06/25/14 | 9,600 | 19.3 | 231 | 148 | 773 | 38 | 2.3 |
| V1 Effluent | _ | ND<2040 | 20.6 | 36.5 | ND<29.6 | ND<59.1 | ND<29.6 | NC |
| V1 Influent | | 131,000 | ND<58.4 | 235.0 | 253 | 5,360 | 2,460 | 31.0 |
| V1 Intermediate | 07/09/14 | ND<3520 | ND<37.6 | ND<44.6 | ND<51.0 | ND<102 | ND<51.0 | NC |
| V1 Effluent | | 9,860 | 17 | 29.7 | ND<22.3 | ND<44.5 | ND<22.3 | 2.3 |
| V1 Influent | | 33,900 | ND<37.6 | 127 | ND<102 | 1,560 | 701 | 8.0 |
| V1 Intermediate | 08/05/14 | 2,630 | ND<11.7 | ND<27.7 | ND<31.7 | ND<63.4 | ND<79.5 | 0.6 |
| V1 Effluent | | ND<2190 | ND<11.7 | 28.6 | ND<31.7 | ND<63.4 | ND<79.5 | NC |
| V1 Influent | | 20,500 | ND<10.9 | 51.5 | ND<78.6 | 3,730 | 1,720 | 4.9 |
| V1 Intermediate | 09/04/14 | ND<2040 | ND<10.9 | 88.1 | ND<78.6 | ND<59.1 | ND<29.6 | NC |
| V1 Effluent | | ND<2040 | ND<10.9 | ND<25.9 | ND<78.6 | ND<59.1 | ND<29.6 | NC |
| V1 Influent | | 16,500 | ND<13.1 | ND<31.1 | ND<35.6 | 372 | 246 | 3.9 |
| V1 Intermediate | 10/16/14 | ND<2120 | ND<11.3 | ND<26.8 | ND<30.6 | ND<61.2 | ND<30.6 | NC |
| V1 Effluent | | 16,800 | 64.0 | 84.5 | ND<25.5 | ND<51.0 | ND<25.5 | 4.0 |
| V1 Influent | | ND<1640 | ND<8.7 | ND<48.3 | ND<55.6 | ND<119 | 63.1 | NC |
| V1 Intermediate | 11/11/14 | ND<1760 | ND<9.4 | ND<55.4 | ND<63.9 | ND<128 | ND<63.9 | NC |
| V1 Effluent | | ND<1760 | 10.2 | ND<55.4 | ND<63.9 | ND<128 | ND<63.9 | NC |
| V1 Influent | | 6,930 | ND<6.0 | 14.8 | ND<16.1 | ND<32.3 | ND<16.1 | 1.6 |
| V1 Intermediate | 12/10/14 | 7,240 | ND<11.0 | ND<26.0 | ND<29.7 | ND<59.5 | ND<29.7 | 1.7 |
| V1 Effluent | | 10,700 | ND<11.0 | ND<26.0 | ND<29.7 | ND<59.5 | ND<29.7 | 2.5 |
| V1 Influent | | ND<2120 | ND<11.3 | ND<26.8 | ND<30.6 | ND<61.2 | ND<30.6 | NC |
| V1 Intermediate | 01/20/15 | 2,100 | ND<10.9 | ND<129 | ND<29.6 | ND<59.1 | ND<29.6 | 0.5 |
| V1 Effluent | | 2,660 | ND<12.6 | ND<149 | ND<34.2 | ND<68.5 | ND<34.2 | 0.6 |
| V1 Influent | | ND<1750 | ND<9.4 | ND<22.2 | ND<25.3 | ND<50.7 | ND<25.3 | NC |
| V1 Intermediate | 02/25/15 | ND<2060 | ND<11.0 | ND<26.0 | ND<29.7 | ND<59.5 | ND<29.7 | NC |
| V1 Effluent | | ND<2060 | ND<11.0 | ND<26.0 | ND<29.7 | ND<59.5 | ND<29.7 | NC |
| V1 Influent | | 1,970 | ND<6.1 | 23.1 | ND<82.5 | 44.4 | ND<82.5 | 0.5 |
| V1 Intermediate | 03/18/15 | 3,310 | 19.4 | 342 | ND<74.2 | ND<29.6 | ND<74.2 | 0.8 |
| V1 Effluent | 1 | 2,720 | ND<3.3 | 10.2 | ND<44.7 | ND<17.8 | ND<44.7 | 0.6 |
| | | PSCA | A Threshold Co | ncentration * | | | | 200 |

Table 1. Vapor Phase Analytical Results Summary PHILLIPS 66 FACILITY #255353 (AOC 1396)

| Sample Location | Sample Date | | *THCg (ppmv | | | | | |
|-------------------------------|----------------|------------------|--|--------------------|---------------|-------------------|---------|------|
| Location | Date | THCg | THCg Benzene Toluene Ethylbenzene M&p Xylenes | | o- Xylenes | - | | |
| V2 Influent | | 179,000 | ND<13.1 | 750 | 1,110 | 5,390 | 1,530 | 42.4 |
| V2 Intermediate | 01/27/14 | 62,300 | ND<11.3 | 34.5 | ND<30.6 | ND<61.2 | ND<30.6 | 14.8 |
| V2 Effluent | | 32,500 | ND<12.6 | 39.5 | ND<34.1 | ND<68.3 | ND<34.1 | 7.7 |
| V2 Influent | | 153,000 | 88 | 432 | 1,030 | 4,540 | 1,600 | 36.2 |
| V2 Intermediate | 02/19/14 | 5,700 | ND<10.9 | 30.7 | ND<29.6 | ND<59.1 | ND<29.6 | 1.3 |
| V2 Effluent | | 7,750 | ND<10.9 | 31.4 | ND<29.6 | ND<59.1 | ND<29.6 | 1.8 |
| V2 Influent | | 219,000 | 214 | 2,230 | 2,910 | 19,000 | 5,800 | 51.9 |
| V2 Intermediate | 03/10/14 | 9,140 | ND<10.9 | ND<25.9 | ND<29.6 | ND<59.1 | ND<29.6 | 2.2 |
| V2 Effluent | | 6,320 | ND<12.2 | ND<28.8 | ND<32.9 | ND<65.8 | ND<32.9 | 1.5 |
| V2 Influent | | 162,000 | 85 | 1,420 | 988 | 5,510 | 2,530 | 38.4 |
| V2 Intermediate | 04/16/14 | ND<1220 | ND<6.5 | 22.9 | ND<17.6 | ND<35.2 | ND<17.6 | NC |
| V2 Effluent | 1 | ND<1220 | ND<6.5 | 30.3 | ND<17.6 | ND<35.2 | ND<17.6 | NC |
| V2 Influent | | 103,000 | ND<16.2 | 435 | 711 | 8,340 | 2,660.0 | 24.4 |
| V2 Intermediate | 05/08/14 | 3,310 | ND<6.5 | ND<15.4 | ND<17.6 | ND<35.2 | ND<17.6 | 0.8 |
| V2 Effluent | - | 5,620 | ND<6.5 | ND<15.4 | ND<17.6 | ND<35.2 | ND<17.6 | 1.3 |
| V2 Influent | | 23,200 | ND<73.4 | ND<174 | ND<199 | 2,820 | 1,070 | 5.5 |
| V2 Intermediate | 06/25/14 | 12,900 | 19.4 | 143 | 34 | ND<61.2 | ND<30.6 | 3.1 |
| V2 Effluent | - | ND<2040 | 12 | ND<25.9 | ND<29.6 | ND<59.1 | ND<29.6 | NC |
| V2 Influent | | 46,000 | ND<56.5 | 154 | 146 | 3,040 | 1,290 | 10.9 |
| V2 Intermediate | 07/09/14 | ND<3520 | ND<37.6 | ND<44.6 | ND<51.0 | ND<102 | ND<51.0 | NC |
| V2 Effluent | 07/09/14 | 6,900 | ND<18.8 | 28.0 | ND<25.5 | ND<102 | ND<25.5 | 1.6 |
| V2 Influent | | 39,300 | ND<22.0 | 83.7 | ND<59.5 | 1,230 | 571 | 9.3 |
| V2 Intermediate | 08/05/14 | ND<2120 | ND<11.3 | ND<26.8 | ND<30.6 | ND<61.2 | ND<76.8 | NC |
| V2 Effluent | 00/03/14 | 10,600 | ND<11.7 | ND<27.7 | ND<31.7 | ND<63.4 | ND<79.5 | 2.5 |
| V2 Influent | | 19,500 | ND<10.9 | 39.3 | ND<78.6 | 1,780 | 910 | 4.6 |
| V2 Intermediate | 09/04/14 | ND<2040 | ND<10.9 | ND<25.9 | ND<78.6 | 1,780 ND<59.1 | ND<29.6 | NC |
| V2 Effluent | 0)/04/14 | ND<2040 | ND<10.9 | ND<25.9 | ND<78.6 | ND<59.1 | ND<29.6 | NC |
| V2 Influent | | 67,800 | ND<13.1 | ND<31.1 | ND<35.6 | 238 | 171 | 16.1 |
| V2 Infuent V2 Intermediate | 10/16/14 | ND<2120 | ND<11.3 | ND<26.8 | ND<30.6 | ND<61.2 | ND<30.6 | NC |
| V2 Effluent | 10/10/14 | 7,860 | ND<9.4 | ND<22.3 | ND<25.5 | ND<01.2 | ND<30.0 | 1.9 |
| V2 Influent | | 7,800 ND<1640 | ND<9.4 8.2 | ND<22.3 ND<48.3 | ND<55.6 | ND<31.0 | 58.0 | NC |
| | 11/11/14 | ND<2060 | 0.2 ND<11.0 | ND<48.3 | ND<74.6 | ND<149 | ND<74.6 | NC |
| V2 Intermediate | 11/11/14 | ND<2060 | ND<11.0 | ND<64.7 | | | ND<74.6 | NC |
| V2 Effluent | | | | | ND<74.6 | ND<149 ND<39.5 | | |
| V2 Influent | 12/10/14 | 6,210 | ND<7.3 | ND<17.3 | ND<19.8 | | ND<19.8 | 1.5 |
| V2 Intermediate | 12/10/14 | 5,950 | ND<11.0 | ND<26.0 ND<26.0 | ND<29.7 | ND<59.5 | ND<29.7 | 0.7 |
| V2 Effluent | | 3,140 | ND<11.0 | | ND<29.7 | ND<59.5 | ND<29.7 | |
| V2 Influent | 01/20/15 | ND<2190 | ND<11.7 | ND<27.7 | ND<31.7 | ND<63.4 | ND<31.7 | NC |
| V2 Intermediate | 01/20/15 | ND<1760 | ND<9.4 | 37.4 | ND<63.9 | ND<51.0 | ND<25.5 | NC |
| V2 Effluent | | 2,360 | ND<12.2 | ND<143 | ND<32.9 | ND<65.8 | ND<32.9 | 0.6 |
| V2 Influent | 02/25/15 | 2,940 | ND<7.4 | ND<17.6 | ND<20.2 | ND<40.3 | 32.3 | 0.7 |
| V2 Intermediate | 02/25/15 | ND<1980 | ND<10.6 | ND<25.1 | ND<28.7 | 115 | 46.7 | NC |
| V2 Effluent | | 2,530 | ND<11.0 | ND<26.0 | ND<29.7 | ND<59.5 | ND<29.7 | 0.6 |
| V2 Influent | 02/10/17 | 2,300 | ND<5.8 | ND<13.9 | ND<79.5 | 39.7 | ND<79.5 | 0.5 |
| V2 Intermediate | 03/18/15 | 1,500 | ND<5.5 | 15.0 | ND<74.2 | ND<29.6 | ND<74.2 | 0.4 |
| V2 Effluent | | 3,470 | ND<8.6 | 29.5 | ND<117 | ND<46.8 | ND<117 | 0.8 |

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| Sample | Sample | | *THCg (ppmv) | | | | | |
|----------------------------|----------|----------|--------------|--------------------|--------------------|----------------|--------------------|-----------|
| Location | Date | THCg | Benzene | Toluene | Ethylbenzene | m&p Xylenes | o- Xylenes | |
| V3 Influent | | 261,000 | 184 | 1,680 | 2,440 | 9,530 | 3,590 | 61.8 |
| V3 Intermediate | 01/27/14 | 108,000 | ND<13.6 | 39.5 | ND<37.0 | ND<73.9 | ND<37.0 | 25.6 |
| V3 Effluent | - | 31,800 | ND<10.9 | ND<25.9 | ND<29.6 | ND<59.1 | ND<29.6 | 7.5 |
| V3 Influent | | 165,000 | 85 | 456 | 1,070 | 4,550 | 1,650 | 39.1 |
| V3 Intermediate | 02/19/14 | 2,640 | ND<10.9 | ND<25.9 | ND<29.6 | ND<59.1 | ND<29.6 | 0.6 |
| V3 Effluent | | 3,220 | ND<10.9 | 34.1 | ND<29.6 | ND<59.1 | ND<29.6 | 0.8 |
| V3 Influent | | 209,000 | 204 | 2,110 | 2,830 | 18,400 | 5,550 | 49.5 |
| V3 Intermediate | 03/10/14 | 8,010 | ND<10.8 | 27.3 | ND<29.5 | ND<59.0 | ND<29.5 | 1.9 |
| V3 Effluent | | 4,980 | ND<10.9 | ND<25.9 | ND<29.6 | ND<59.1 | ND<29.6 | 1.2 |
| V3 Influent | | 167,000 | 78 | 1,320 | 882 | 6,860 | 2,290 | 39.5 |
| V3 Intermediate | 04/16/14 | ND<1220 | ND<6.5 | 18 | ND<17.6 | ND<35.2 | ND<17.6 | NC |
| V3 Effluent | | ND<1220 | ND<6.5 | 30.8 | ND<17.6 | ND<35.2 | ND<17.6 | NC |
| V3 Influent | | 134,000 | 33 | 641 | 1,060 | 11,600 | 3,690.0 | 31.7 |
| V3 Intermediate | 05/08/14 | 9,300 | ND<6.5 | ND<15.4 | ND<17.6 | ND<35.2 | ND<17.6 | 2.2 |
| V3 Effluent | 1 | 3,970 | ND<6.5 | ND<15.4 | ND<17.6 | ND<35.2 | ND<17.6 | 0.9 |
| V3 Influent | | ND<28400 | ND<152 | ND<360 | ND<412 | 3,140 | 1,130 | NC |
| V3 Intermediate | 06/25/14 | 19,100 | 24.5 | 188 | 130 | 944 | 207 | 4.5 |
| V3 Effluent | 00/25/11 | ND<2120 | ND<11.3 | ND<26.8 | ND<30.6 | ND<61.2 | ND<30.6 | NC |
| V3 Influent | | 83,400 | ND<56.5 | 172 | 180 | 3,440 | 1,540 | 19.7 |
| V3 Intermediate | 07/09/14 | ND<2120 | ND<22.6 | 27.9 | ND<30.6 | ND<61.2 | ND<30.6 | NC |
| V3 Effluent | 0//0//14 | 3,540 | ND<18.8 | 27.9 | ND<25.5 | ND<01.2 | ND<25.5 | 0.8 |
| V3 Influent | 08/05/14 | 35,700 | ND<22.0 | 85.3 | ND<59.5 | 1,140 | 519 | 8.5 |
| V3 Intermediate | | ND<2460 | ND<22.0 | ND<31.1 | ND<35.6 | ND<71.1 | ND<89.2 | NC 8.5 |
| | 08/03/14 | 5,840 | ND<11.3 | ND<31.1 ND<26.8 | | ND<71.1 | ND<89.2 ND<76.8 | 1.4 |
| V3 Effluent V3 Influent | | 4,850 | ND<10.9 | ND<25.9 | ND<30.6 ND<78.6 | | 640 | 1.4 |
| | 09/04/14 | | | | | 1,460 | | 1.1 NC |
| V3 Intermediate | 09/04/14 | ND<2040 | ND<10.9 | ND<25.9 | ND<78.6 | ND<59.1 | ND<29.6 | |
| V3 Effluent | | ND<2040 | ND<10.9 | ND<25.9 | ND<78.6 | ND<59.1 | ND<29.6 | NC |
| V3 Influent | 10/16/14 | 15,200 | ND<13.1 | ND<31.1 | ND<35.6 | 241 | 170 | 3.7 |
| V3 Intermediate | 10/16/14 | ND<2550 | ND<13.6 | ND<32.3 | ND<37.0 | ND<73.9 | ND<37.0 | NC |
| V3 Effluent | | ND<1760 | ND<9.4 | ND<22.3 | ND<25.5 | ND<51.0 | ND<25.5 | NC |
| V3 Influent | 11/11/14 | ND<1750 | ND<9.4 | ND<55.2 | ND<63.6 | ND<127 | 65.6 | NC |
| V3 Intermediate | 11/11/14 | ND<1760 | ND<9.4 | ND<55.4 | ND<63.9 | ND<128 | ND<63.9 | NC |
| V3 Effluent | | ND<1540 | ND<8.2 | ND<48.4 | ND<55.8 | ND<112 | ND<55.8 | NC |
| V3 Influent | 10/10/14 | 6,140 | ND<9.4 | ND<22.3 | ND<25.5 | ND<51.0 | ND<25.5 | 1.5 |
| V3 Intermediate | 12/10/14 | ND<2060 | ND<11.0 | ND<26.0 | ND<29.7 | ND<59.5 | ND<29.7 | NC |
| V3 Effluent | | 7,100 | ND<11.0 | ND<26.0 | ND<29.7 | ND<59.5 | ND<29.7 | 1.7 |
| V3 Influent | 01/00/17 | 12,100 | ND<11.7 | ND<27.7 | ND<31.7 | ND<63.4 | ND<31.7 | 2.9 |
| V3 Intermediate | 01/20/15 | ND<2270 | ND<12.2 | ND<28.8 | ND<32.9 | ND<65.8 | ND<32.9 | NC |
| V3 Effluent | | ND<2550 | ND<13.6 | ND<161 | ND<37.0 | ND<73.9 | ND<37.0 | NC |
| V3 Influent | | 3,340 | ND<11.7 | ND<27.7 | ND<31.7 | ND<63.4 | ND<31.7 | 0.8 |
| V3 Intermediate | 02/25/15 | ND<1980 | ND<10.6 | ND<25.1 | ND<28.7 | ND<57.3 | ND<28.7 | NC |
| V3 Effluent | | ND<1980 | ND<10.6 | ND<25.1 | ND<28.7 | ND<57.3 | ND<28.7 | NC |
| V3 Influent | _ | 2,290 | ND<5.7 | 14.8 | ND<76.8 | 38.3 | ND<76.8 | 0.5 |
| V3 Intermediate | 03/18/15 | ND<1280 | ND<6.8 | 28.4 | ND<92.7 | ND<37.0 | ND<92.7 | NC |
| V3 Effluent | | 2,240 | ND<5.5 | ND<12.9 | ND<74.2 | ND<29.6 | ND<74.2 | 0.5 |

Notes:

There are three sets (or trains) of two vapor phase carbon units (for a total of six) used to treat extracted vapors. The two carbon units associated with each train are plumbed in series. Samples V1 Influent, V1 Intermediate, and V1 Effluent were collected from sample ports associated with the first train of vapor phase carbon units. Samples V2 Influent, V2 Intermediate, and V2 Effluent were collected from sample ports associated with the second train of vapor phase carbon units. Samples V3 Influent, V3 Intermediate, and V3 Effluent were collected from sample ports associated with the second train of vapor phase carbon units. Samples V3 Influent, V3 Intermediate, and V3 Effluent were collected from sample ports associated with the third train of vapor phase carbon units. The influent sample ports for each train are located prior to the first carbon units. The intermediate sample ports for each train are located between the first and second carbon units. The effluent sample ports for each train are located after the second (and last) carbon units. The sample port locations are shown on Figure 2.

NC = Not Calculated due to concentration below laboratory MDL.

* THCg ppm = THCg (μg/m³) /42.23 (conversion factor for molar volume @ STP)/M (molecular weight of THC [100]). PSCAA Permit (Registration #29548) requires a minimum control efficiency of 97% when the TPH (THC) influent concentration is greater than or equal to 200 ppmv.

Table 2. Liquid Phase Analytical Results Summary PHILLIPS 66 FACILITY #255353 (AOC 1396)

| Sample Location | Sample Date | Analytical Water Results (NWTPH-Gx/8021 for THCg and EPA Method 8260 for VOCs) (µg/L) | | | | | | | | | |
|--------------------|----------------|---|-----------|-----------|--------------|------------------|--|--|--|--|--|
| | | THCg | Benzene | Toluene | Ethylbenzene | Total Xylenes | | | | | |
| W-DSCHG | | 2,250 | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG W-INT | 01/27/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF | 01/2//11 | ND (<100) | ND (<1.0) | 1.5 | ND (<1.0) | 8.6 | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 02/20/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | 1.3 | 11.4 | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 03/10/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | 1 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 04/16/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | 5.5 | | | | | |
| W-DSCG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 05/08/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 06/25/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 07/09/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 08/13/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | | * | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 09/04/14 | * | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | * | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 10/16/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 11/11/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 12/10/14 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 01/21/15 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | 827 | 10.2 | 82.1 | 11.4 | 86.2 | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 02/25/15 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-DSCHG | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-OUT-WC1 | 03/18/15 | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| W-INF-WS1 | | ND (<100) | ND (<1.0) | ND (<1.0) | ND (<1.0) | ND (<3.0) | | | | | |
| KCIW F | Permit Limit | ts | 70 | 1,400 | 1,700 | 2,200 | | | | | |

There are a total of two liquid phase carbon units plumbed in series to treat water. Samples W-INF or W-INF-WS1 were collected from a sample port located prior to the first liquid phase carbon unit. Samples W-INT or W-OUT-WC1 were collected from a sample port located between the first and second liquid phase carbon units. Samples W-DSCHG or W-DSCG were collected from the sample port located after the second (and final) liquid phase carbon unit. The sample port locations are shown on Figure 2.

KCIW Permit Maximum Allowable Concentrations:

Benzene – 0.07 mg/L (70 µg/L); Ethylbenzene – 1.7 mg/L (1,700 µg/L); Toluene – 1.4 mg/L (1,400 µg/L); Total Xylenes – 2.2 mg/L (2,200 µg/L).

* THCg analysis was requested, but the laboratory inadvertently neglected to complete the THCg analysis.



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ATTACHMENTS Acronym List Figure I – Site Layout Diagram Figure 2 – Remediation System Layout Table 3. Remediation System Operational Data Summary Cumulative TPHg and BTEX Removal Graph Table 4. SVE PID Data Summary Table 5. AS Flow Data Summary O&M Log Field Notes Appendix A - Laboratory Analytical Reports and Chain of Custody Documents Appendix B – PSCAA Permit



Acronym List

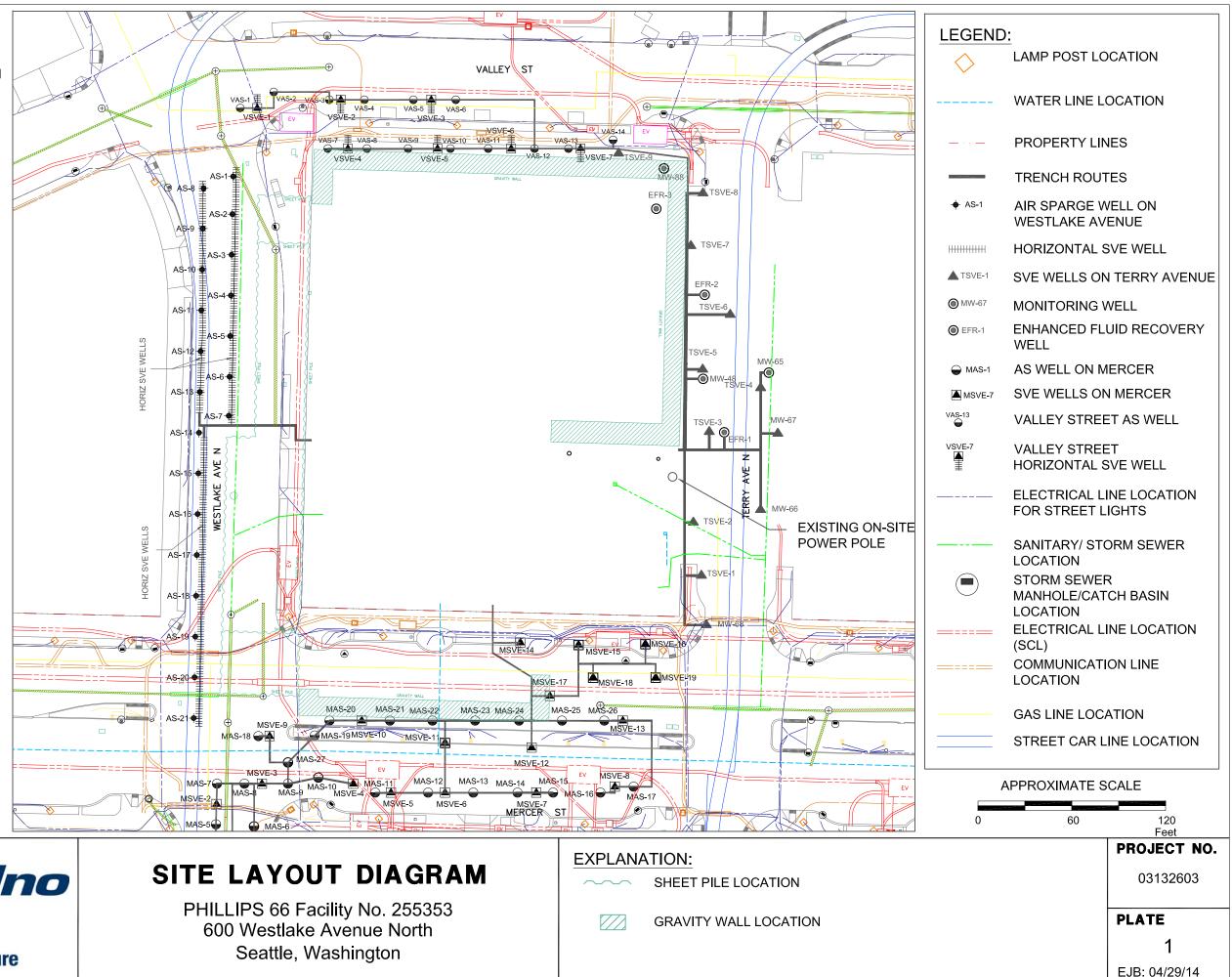
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| µg/L | Micrograms per liter | NAI | Natural attenuation indicators |
|-------------------|---|-------|--|
| μs | Microsiemens | NAPL | Non-aqueous phase liquid |
| 1,2-DCA | 1.2-dichloroethane | NEPA | National Environmental Policy Act |
| | , | | |
| acfm | Actual cubic feet per minute | NGVD | National Geodetic Vertical Datum |
| AS | Air sparge | NPDES | National Pollutant Discharge Elimination |
| | | | System |
| bgs | Below ground surface | O&M | Operations and Maintenance |
| BTEX | Benzene, toluene, ethylbenzene, and total | ORP | Oxidation-reduction potential |
| DILA | | ON | Oxidation reduction potential |
| | xylenes | 00114 | |
| cfm | Cubic feet per minute | OSHA | Occupational Safety and Health |
| | | | Administration |
| COC | Chain of Custody | OVA | Organic vapor analyzer |
| CPT | Cone Penetration (Penetrometer) Test | P&ID | Process & Instrumentation Diagram |
| DIPE | Di-isopropyl ether | PAH | Polycyclic aromatic hydrocarbon |
| DO | | PCB | |
| | Dissolved oxygen | - | Polychlorinated biphenyl |
| DOT | Department of Transportation | PCE | Tetrachloroethene or perchloroethylene |
| DPE | Dual-phase extraction | PID | Photo-ionization detector |
| DTW | Depth to water | PLC | Programmable logic control |
| EDB | 1,2-dibromoethane | POTW | Publicly owned treatment works |
| EPA | Environmental Protection Agency | ppmv | Parts per million by volume |
| ESL | Environmental screening level | PQL | Practical quantitation limit |
| - | | | |
| ETBE | Ethyl tertiary butyl ether | PSCAA | Puget Sound Clean Air Agency |
| FID | Flame-ionization detector | psi | Pounds per square inch |
| fpm | Feet per minute | PVC | Polyvinyl chloride |
| ĠAC | Granular activated carbon | QA/QC | Quality assurance/quality control |
| gpd | Gallons per day | RBSL | Risk-based screening levels |
| | Gallons per minute | RCRA | Resource Conservation and Recovery Act |
| gpm | | - | |
| GWPTS | Groundwater pump and treat system | RL | Reporting limit |
| HVOC | Halogenated volatile organic compound | scfm | Standard cubic feet per minute |
| J | Estimated value between MDL and PQL | SSTL | Site-specific target level |
| | (RL) | | |
| KCIW | King County Industrial Waste | STLC | Soluble threshold limit concentration |
| LEL | Lower explosive limit | SVE | Soil vapor extraction |
| LPC | Liquid-phase carbon | SVOC | Semivolatile organic compound |
| | | | |
| LRP | Liquid-ring pump | TAME | Tertiary amyl methyl ether |
| LUFT | Leaking underground fuel tank | TBA | Tertiary butyl alcohol |
| LUST | Leaking underground storage tank | TCE | Trichloroethene |
| MCL | Maximum contaminant level | THCg | Total hydrocarbons as gasoline |
| MDL | Method detection limit | тос | Top of well casing elevation; datum is msl |
| mg/kg | Milligrams per kilogram | TOG | Total oil and grease |
| | | | |
| mg/L | Milligrams per liter | TPHd | Total petroleum hydrocarbons as diesel |
| mg/m ³ | Milligrams per cubic meter | TPHg | Total petroleum hydrocarbons as gasoline |
| MPE | Multi-phase extraction | TPHmo | Total petroleum hydrocarbons as motor oil |
| MRL | Method reporting limit | TPHs | Total petroleum hydrocarbons as stoddard |
| | 1 0 | | solvent |
| msl | Mean sea level | TRPH | Total recoverable petroleum hydrocarbons |
| MTBE | | UCL | Upper confidence level |
| | Methyl tertiary butyl ether | | |
| MTCA | Model Toxics Control Act | USCS | Unified Soil Classification System |
| | | USGS | United States Geologic Survey |
| | | UST | Underground storage tank |
| | | VCP | Voluntary Cleanup Program |
| | | VFD | Variable Frequency Drive |
| | | VOC | Volatile organic compound |
| | | VPC | Vapor-phase carbon |
| | | | vapor-priase carbon |
| | | | |

NOTES:

1. LOCATIONS OF SITE FEATURES CONSTRUCTED FOR THE P-66 REMEDIATION SYSTEM (REMEDIATION COMPOUND, **ON-SITE TRENCHES, TERRY AVE. TRENCH** EXTENSION) HAVE NOT BEEN SURVEYED AND ARE APPROXIMATE.

2. LOCATIONS OF ALL OTHER SITE AND AREA FEATURES ARE BASED ON PLANS SUPPLIED BY SDOT, AND HAVE NOT BEEN VERIFIED BY THE PROJECT ENGINEER.



Cardno ERI **Shaping the Future**

| EXPLANA | TION: |
|---------|---------------------|
| ~~~~ | SHEET PILE LOCATION |
| | GRAVITY WALL LOCAT |

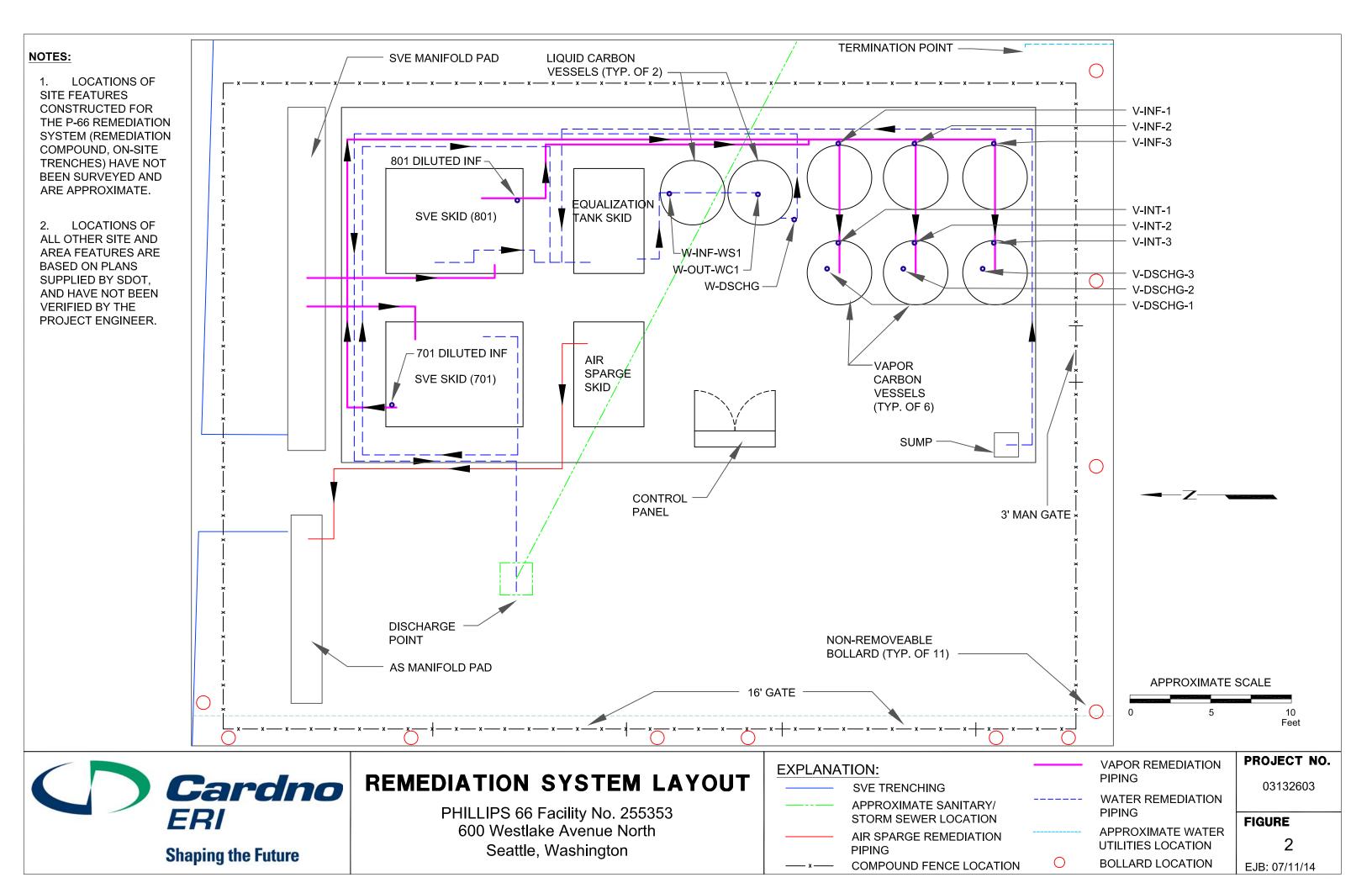


Table 3. Remediation System Operational Data SummaryPHILLIPS 66 FACILITY #255353 (AOC 1396)

| Unicon-Vesalar Vision Valley Party View AS System VPC-1 VPC-2 VPC-2 VPC-3 Expected by the particular parts of the particular parts of the parts of th | | | | SVE S | System | | | | | | | | Off-gas | Treatment | System | | | | | | |
|--|---------|-----------|--------------|------------------------|-----------|---------------|------------------------|-----------|----------|--------|---------|-----------|---------|----------------------|-----------|--------|-----------------|-----------|-----------|-------------|--------------------|
| Period Determing Wells Originary (Louron) Period Applied Applied Determing Period (Louron) Applied (Louron) Period (Louron) Applied (Louron) Period (Louron) < | | Merc | cer-Westlake | | | lley-Terry We | ells | AS Sy | stem | | VPC-1 | | Ŭ | | | | VPC-3 System To | | | System Tota | als |
| Period Wells on Insure Applied (no.m) Period (no.m) Applied (no.m) Period (no.m) Period (no. | | | | | | | | | | | | | | | | | | | | Estimated | |
| Operative Data Waccom (count) Vaccom (mun) Operative (mun) Waccom (mun) | | | | | | | | | | | | Estimated | | | Estimated | | | Estimated | Estimated | TPHg | Cumulative |
| bits bits <td></td> <td>Period</td> <td>Wells On-</td> <td>Applied</td> <td>Period</td> <td>Wells On-</td> <td>Applied</td> <td>Period</td> <td>Applied</td> <td></td> <td></td> <td>TPHg</td> <td>Flow</td> <td></td> <td>TPHg</td> <td>Flow</td> <td></td> <td>TPHg</td> <td>TPHg</td> <td>Removal</td> <td>TPHg</td> | | Period | Wells On- | Applied | Period | Wells On- | Applied | Period | Applied | | | TPHg | Flow | | TPHg | Flow | | TPHg | TPHg | Removal | TPHg |
| 1000 114 20 114 6.5 Nal 96000 21.4 Nal 7600 15.5 Nal 5600 12.4 Nal 7600 12.5 Nal 5600 12.4 Nal 7600 12.4 Nal 7600 12.4 Mal 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 12.4 7600 7600 7600 7600 7600 7600 < | | Operating | line | Vaccum | Operating | line | Vaccum | Operating | Pressure | | Conc. | Removed | Rate | Conc. | Removed | Rate | Conc. | Removed | Removed | Rate | Removed |
| 1101 114 23 28 114 23 28 114 6.5 NM 98000 25.4 NM 78600 15.5 NM 98000 15.6 77.6 94000 15.2 741 0.41 163 1811 28 28 18 28 28 28 28 28 28 28 18 755 7460 725 7480 28 18 74.6 | Date | Hours | (count) | (in. H ₂ O) | Hours | (count) | (in. H ₂ O) | Hours | (psi) | (scfm) | (µg/m³) | (lbs.) | (scfm) | (µg/m ³) | (lbs.) | (scfm) | (µg/m³) | (lbs.) | (lbs.) | (lbs./hr) | (lbs.) |
| Intria 3 28 28 3 27 3 6 NM 98000 3.64 MM 74850 6.1 NM 5600 1.23 0.23 1.23 0.41 1553 10714 19 28 18 28 23 28 23 28 44.7 58400 1.23 0.41 1580 10714 21 28 22 24 23 28 23 28 22 24 23 25 133 631 133 531 1400 144 1400 144 1400 140 143 53.1 74800 24 530 2500 34.6 35.1 53.3 74800 24.8 25.0 25.0 44.1 25.0 55.0 </td <td></td> | | | | | | | | | | | | | | | | | | | | | |
| 17.774 19 28 18 19 28 26 19 6 60307 99000 0.00 NN 7641 0.25 7641 0.25 7641 0.26 0.00 NN 7640 0.25 7640 0.00 NN 7640 1.15 752 745 7757 7757 7757 | | | | | | | | | | | | | | | | | | | | | 154.94 |
| 18/14 28 28 18 28 28 5 NM 94800 0.00 NM 54800 0.00 0.00 0.00 0.00 NM 54807 7486 0.00 NM 54807 7486 725 453.8 64907 746 75 75 75 747 75 75 77 75 75 77 75 75 77 75 75 77 75 75 77 75 75 77 75 75 77 75 77 75 77 75 77 74 75 74 </td <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td></td> <td>156.17</td> | | - | | | | | | - | - | | | | | | | | | | | | 156.17 |
| 1014 24 28 22 14 28 748 5182 9800 18.5 698.7 74850 7455 5142 9900 31.5 692.7 74850 7455 5142 9900 31.5 692.7 74850 7450 54900 80.7 6400 8400 841 | | | | | | | | | | | | | | | | | | | | | 163.98 |
| Introl 17 28 22 18 23 27 17 7 5 517.42 78500 313 512.1 7850 24.5 528.0 11.80 546.7 54000 14.31 47.3 45000 14.30 546.7 54000 2.0 8.66 0.44 225 11.414 19 28 22 18 2.7 18 6.5 407.43 95000 3.11 55000 2.0 8.66 0.44 2.24 11.111 18 29 24 19 6 55.4 450 55.4 450 55.4 450 57.4 450 7452 74850 2.77 19.8 0.33 230 2.4 440 4900 744 930 2.4 490 2.4 4900 2.4 4900 2.4 4900 2.4 4900 2.4 4900 2.4 4900 2.4 4900 2.4 4900 2.4 4900 2.4 4900< | | | | | | | | | | | | | | | | | | | | | 163.98 |
| Intrart Typ 28 22 79 23 26 80 6.5 50.87 50.800 14.31 53.216 74800 18.30 5487.3 54800 5.31 5480 5487.3 54800 5.31 5480 2.55 568.0 6.44 233 11/15/14 28 28 23 27 26 7 512.50 5000 5.11 513.61 7460 2.04 53.63 6400 2.10 6.5 0.66 53.67 7460 2.0 6.41 0.44 2.0 0.64 2.3 0.65 441.06 5000 1.12 45.21 74.60 3.0 44.43 0.37 2.4 0.47 0.44 0.33 3.0 0.41.44 2.4 0.44.40 7460 3.0 74.64 0.47 0.44 0.33 3.0 1.0 1.44.40 2.46 7460 3.0 74.64 0.03 3.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 </td <td></td> <td>190.84</td> | | | | | | | | | | | | | | | | | | | | | 190.84 |
| | | | | | | | | | | | | | | | | | | | | | 225.87 |
| Internal 28 28 23 27 26 7 51250 99000 511 51361 74950 426 55331 54900 210 1224 0.44 285 0.44 285 0.45 255 1111 1111 1111 | | - | - | | - | | - | | | | | | | | | | | | | - | 233.92 |
| Internal 19 28 24 19 6 593.21 74600 2.86 533.31 54000 2.10 8.50 4.46 9.500 2.44 9.50 2.44.30 74600 2.44 444.48 9.400 2.44 0.33 2.44.30 74600 3.67 455.45 5400 6.47 2.64.4 0.33 2.64 1/21/14 69 2.8 3.3 69 2.3 4.4 69 6.5 455.65 495.00 6.47 2.64.4 0.38 301 1/21/14 2.2 8 4.2 19 2.3 3.2 30 6.5 451.50 7.4800 3.04 7.480 3.08 7.480 3.08 7.480 3.08 7.480 3.08 7.481 3.00 2.41 7.480 3.08 7.481 3.00 3.03 3.01 3.02 3.02 3.02 7.7 4.219 9.900 3.04 7.481 3.00 2.41 3.03 3.03 3.03 | | | | | | | | | | | | | | | | | | | | | 246.16 |
| 1/17/14 25 28 34 26 23 44 25 6 44106 9800 32 420.97 74950 3.07 44.49 54000 2.48 9.48 0.37 264 172014 29 28 46 29 23 53 29 5.5 428.66 95000 4.44 460.09 74850 3.75 468.58 54000 1.67 10.96 0.38 303 1/22/14 20 28 40 30 23 32 0.6.5 418.76 95000 4.46 430.77 74800 36.6 471.91 54000 2.91 11.07 0.37 323 1/27/14 66 28 411 66 2.3 31 66 6.5 431.90 7100 8.24 471.91 54000 47.91 54000 1.62 18.49 0.86 473.91 54000 1.02 19.49 0.86 45.9 210000 1.84 0.86 | | | | | | | | | | | | | | | | | | | | - | 254.75 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | - | - | | | | | | | | | | | | 264.23 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | 1/20/14 | | | | | | | | 6.5 | | | | | | | | | | | | 290.67 |
| 12:2:1:4 30 28 40 32 32 30 6.5 41:2:4 95:000 3.4 46 439:3.7 749:50 36.9 471:91 549:00 2.47 9.4 0.30 379:91 549:00 2.47 9.4 0.38 379:91 549:00 3.68 377:91 549:00 3.68 477:91 549:00 3.68 477:91 549:00 3.68 477:91 549:00 3.68 477:91 549:00 3.68 477:91 549:00 3.68 477:91 549:00 3.68 477:91 549:00 3.68 477:91 549:00 3.68 477:91 549:00 3.68 477:91 549:00 3.68 475:41 281:00 3.61 444:02 300:00 6.33 44:10 270:00 1.62 221:34 3.65 422:31 77100 2.29 460:78 171:00 2.63 3.31 170:00 3.63 44:10 270:00 1.63 44:14:02 270:00 1.63 24:14:10 28:10 1.22 24:14 28:10 28:10 1.22 24:14 28:10 28: | | | | | | | | | | | | | | | | | | | | | 301.63 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | 20 | 28 | 42 | 19 | 23 | | 20 | 6.5 | 451.76 | 95000 | 3.22 | 462.40 | 74950 | 2.47 | 500.94 | 54900 | 1.96 | 7.64 | 0.39 | 309.27 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | | | | | | | | | | | | | | 320.34 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | - | - | | | - | - | - | | | | | | | | | | | | | 329.73 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | | | | | | | | | | | | | | 387.72 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | - | | | | | | | | | | | | | | | | | 409.91 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | | | | | | | | - | | | | | | | | | | | | | 429.39 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | - | | | | | | - | | | | | | | | | | | | 443.94 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | - | | | | | | - | | | | | | | | | | | | | 446.36 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | - | | | | | | | | | | | | | | | | | 506.75 |
| 211/14 97 28 50 97 23 51 98 6 449.75 77100 12.60 444.32 179000 28.90 451.16 261000 42.78 84.28 0.87 673 2/12/14 26 28 47 26 23 51 25 6 438.41 77100 3.29 482.88 179000 5.26 458.18 261000 8.51 16.09 0.857 713 2/13/14 67 28 49 25 23 52 66 7 415.17 77100 8.03 427.60 179000 19.21 449.94 26100 29.47 56.71 0.857 75000 5.26 458.18 26100 7.3 56.71 5300 5.78 497.26 16500 6.76 18.20 0.83 893.1 155000 5.78 497.26 16500 6.61 18.12 0.83 894.1 155000 5.89 41.91.31 15500 57.5 41.23 </td <td></td> <td>588.75</td> | | | | | | | | | | | | | | | | | | | | | 588.75 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | | | | | | | | | | | | | | 673.02 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | | - | | | | | | | | | | | | 697.03 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | | | | | | | | | | | | | | 713.13 |
| 2/19/14 25 28 49 26 7 432,53 158000 6.40 468,57 153000 6.71 487,13 165000 7.53 20,64 0.83 790 2/20/14 122 28 50 22 23 49 21 9 433,97 158000 5.65 458,83 153000 5.78 497,26 165000 6.67 18.20 0.83 808 2/25/14 22 28 48 122 23 46 122 10 438.82 158000 5.62 395.49 153000 5.89 411.09 165000 6.61 18.12 0.70 930 2/26/14 26 28 49 26 23 23 63 23 9 359.08 158000 5.62 395.49 153000 5.15 419.2 18.10 16000 7.437 16000 2.31 6.42.8 0.66 1011 3/5/14 38 28 50 | | | - | - | - | - | - | - | - | | | | | | | | | | | | 769.84 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | | | | | | | | | | | | | | 790.48 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | 2/20/14 | | 28 | 50 | | | 49 | 21 | 9 | 433.97 | 158000 | 5.65 | | | 5.78 | 497.26 | | 6.76 | 18.20 | 0.83 | 808.68 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | 2/25/14 | 122 | 28 | 48 | 122 | 23 | 46 | 122 | 10 | 438.82 | 158000 | 31.68 | 499.65 | 153000 | 34.93 | 493.41 | 165000 | 37.20 | 103.82 | 0.85 | 912.50 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | 2/26/14 | | | | | | | | | 365.19 | 158000 | | 395.49 | 153000 | 5.89 | | 165000 | | | 0.70 | 930.62 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | | | | | | | | - | | | | | | | | | | | | 946.61 |
| 3/7/14 48 28 52 48 23 67 48 11.9 417.00 158000 11.85 473.58 153000 13.03 493.58 165000 14.64 39.52 0.82 1074 3/10/14 74 28 65 74 23 71 74 11.8 376.48 181000 18.89 415.20 219000 25.20 430.89 209000 24.96 69.05 0.93 1143 3/14/14 91 28 70 90 23 73 91 13.4 400.74 181000 24.72 428.35 219000 31.62 463.82 209000 32.68 89.03 0.99 1233 3/18/14 99 28 71 44 23 74 45 12.3 416.64 181000 12.71 438.17 219000 36.31 462.90 209000 37.24 10.08 1.00 1373 3/20/14 45 28 73 194 23 74 455 12.3 416.64 181000 12.71 438. | | | | | | | | | | | | | | | | | | | | | 1010.90 |
| 3/10/14 74 28 65 74 23 71 74 11.8 376.48 18100 18.89 415.20 219000 25.20 430.89 209000 24.96 69.05 0.93 1142 3/14/14 91 28 70 90 23 73 91 13.4 400.74 181000 24.72 428.35 219000 31.62 463.82 209000 32.68 89.03 0.99 123 3/18/14 99 28 74 100 23 75 99 12.6 410.20 181000 27.53 442.68 219000 36.31 462.90 209000 36.24 100.08 1.00 133 3/20/14 45 28 71 44 23 74 45 12.3 416.64 181000 12.71 438.17 219000 37.31 495.55 209000 37.4 10.1 133 3/20/14 95 28 73 194 23 74 194 15.1 399.25 181000 52.51 428.93 21900 | | | | | | | | | | | | | | | | | | | | | 1035.39 |
| 3/14/14 91 28 70 90 23 73 91 13.4 400.74 18100 24.72 428.35 21900 31.62 463.82 20900 32.68 89.03 0.99 1232 3/18/14 99 28 74 100 23 75 99 12.6 410.20 181000 27.53 442.68 219000 36.31 462.90 209000 36.24 100.08 1.00 1333 3/20/14 45 28 71 44 23 74 45 12.3 416.64 181000 12.71 438.17 219000 15.81 468.67 209000 36.24 100.08 1.00 1333 3/20/14 95 28 75 96 23 77 95 13.4 423.51 181000 27.88 473.84 219000 37.31 495.55 209000 37.24 101.83 1.06 147 4/11/14 194 28 73 194 23 74 194 15.1 399.25 181000 25.51 42 | | | | | | | | | | | | | | | | | | | | | 1074.91 |
| 3/18/14 99 28 74 100 23 75 99 12.6 410.20 181000 27.53 442.68 219000 36.31 462.90 209000 36.24 100.08 1.00 1333 3/20/14 45 28 71 44 23 74 45 12.3 416.64 181000 12.71 438.17 219000 15.81 468.67 209000 36.24 100.08 1.00 1333 3/20/14 95 28 75 96 23 77 95 13.4 423.51 181000 27.28 473.84 219000 37.31 495.55 209000 37.24 101.83 1.06 147.93 4/1/14 194 28 73 194 23 74 194 15.1 399.25 181000 25.51 428.93 219000 68.26 468.17 209000 71.10 191.87 0.99 167 4/11/14 71 28 71 70 23 73 71 15.4 434.40 181000 20.91 < | | | | | | | | | | | | | | | | | | | | | 1143.96 |
| 3/20/14 45 28 71 44 23 74 45 12.3 416.64 18100 12.71 438.17 21900 15.81 468.67 20900 16.14 44.67 1.01 137 3/24/14 95 28 75 96 23 77 95 13.4 423.51 181000 27.28 473.84 219000 37.31 495.55 209000 37.24 101.83 1.06 147.9 4/1/14 194 28 73 194 23 74 194 15.1 399.25 181000 52.51 428.93 219000 68.26 468.17 209000 71.10 191.87 0.99 167 4/11/14 71 28 71 70 23 73 71 15.4 434.40 181000 20.91 478.15 219000 27.46 503.76 209000 27.61 75.97 1.08 174.74 4/16/14 118 2.7 72 | | | | - | | | - | - | | | | | | | | | | | | | 1232.99 |
| 3/24/14 95 28 75 96 23 77 95 13.4 423.51 181000 27.28 473.84 219000 37.31 495.55 209000 37.24 101.83 1.06 1479 4/1/14 194 28 73 194 23 74 194 15.1 399.25 181000 52.51 428.93 219000 68.26 468.17 209000 71.10 191.87 0.99 167 4/11/14 71 28 71 70 23 73 71 15.4 434.40 181000 20.91 478.15 219000 27.46 503.76 209000 27.61 75.97 1.08 174 4/16/14 118 27 72 119 21 74 118 12.5 406.84 156000 28.05 496.74 162000 35.87 501.69 167000 37.34 101.27 0.85 1844 4/23/14 168 27 62 | | | | | | | | | | | | | | | | | | | | | 1333.07 1377.74 |
| 4/1/14 194 28 73 194 23 74 194 15.1 399.25 18100 52.51 428.93 21900 68.26 468.17 20900 71.10 191.87 0.99 167 4/11/14 71 28 71 70 23 73 71 15.4 434.40 181000 20.91 478.15 219000 27.46 503.76 20900 27.61 75.97 1.08 174 4/16/14 118 27 72 119 21 74 118 12.5 406.84 156000 28.05 496.74 162000 35.87 501.69 16700 37.34 101.27 0.85 1840 4/23/14 168 27 62 168 21 74 168 12.6 406.20 156000 39.88 464.92 16200 47.39 482.21 16700 50.67 137.95 0.82 1980 4/30/14 146 27 73 | | | | | | | | | | | | | | | | | | | | | 1377.74 |
| 4/11/14 71 28 71 70 23 73 71 15.4 434.40 18100 20.91 478.15 21900 27.46 503.76 20900 27.61 75.97 1.08 174.74 4/16/14 118 27 72 119 21 74 118 12.5 406.84 156000 28.05 496.74 16200 35.87 501.69 16700 37.34 101.27 0.85 1844 4/23/14 168 27 62 168 21 74 168 12.6 406.20 156000 39.88 464.92 16200 47.39 482.21 16700 50.67 137.95 0.82 1986 4/30/14 146 27 73 169 21 73 170 12.6 336.33 10700 45.29 351.75 10300 48.72 363.86 13400 65.56 159.58 0.45 21.46 5/8/14 190 27 73 190 13 319.88 10700 13.08 334.30 10300 48.72 | | | | | | | | | | | | | | | | | | | | | 1671.45 |
| 4/16/14 118 27 72 119 21 74 118 12.5 406.84 156000 28.05 496.74 16200 35.87 501.69 16700 37.34 101.27 0.85 1844 4/23/14 168 27 62 168 21 74 168 12.6 406.20 156000 39.88 464.92 16200 47.39 482.21 16700 50.67 137.95 0.82 1986 4/30/14 146 27 73 169 21 73 170 12.6 336.33 10700 45.29 351.75 10300 48.72 363.86 13400 65.56 159.58 0.45 2146 5/8/14 190 27 73 190 21 75 190 13 319.88 107000 13.08 334.30 10300 13.16 345.68 134000 17.70 43.93 0.43 2196 5/8/14 102 27 73 102 21 74 102 13.4 318.18 107000 29.97 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1747.42</td></td<> | | | | | | | | | | | | | | | | | | | | | 1747.42 |
| 4/23/14 168 27 62 168 21 74 168 12.6 406.20 156000 39.88 464.92 16200 47.39 482.21 16700 50.67 137.95 0.82 1986 4/30/14 146 27 73 169 21 73 170 12.6 336.33 10700 45.29 351.75 10300 48.72 363.86 13400 65.56 159.58 0.45 2146 5/8/14 190 27 73 190 21 75 190 13 319.88 107000 13.08 334.30 10300 13.16 345.68 134000 17.70 43.93 0.43 2190 5/12/14 102 27 73 102 21 74 102 13.4 318.18 107000 29.97 333.56 103000 30.11 343.06 134000 40.29 100.37 0.43 2290 5/12/14 102 21 74 102 13.4 318.18 107000 29.97 333.56 103000 30.11 </td <td></td> <td>1848.69</td> | | | | | | | | | | | | | | | | | | | | | 1848.69 |
| 4/30/14 146 27 73 169 21 73 170 12.6 336.33 107000 45.29 351.75 103000 48.72 363.86 134000 65.56 159.58 0.45 2146 5/8/14 190 27 73 190 21 75 190 13 319.88 107000 13.08 334.30 103000 13.16 345.68 134000 17.70 43.93 0.43 2190 5/12/14 102 27 73 102 21 74 102 13.4 318.18 107000 29.97 333.56 103000 30.11 343.06 134000 40.29 100.37 0.43 2290 | | - | | | - | | | - | | | | | | | | | | | | | 1986.63 |
| 5/8/14 190 27 73 190 21 75 190 13 319.88 107000 13.08 334.30 103000 13.16 345.68 134000 17.70 43.93 0.43 2190 5/12/14 102 27 73 102 21 74 102 13.4 318.18 107000 29.97 333.56 103000 30.11 343.06 134000 40.29 100.37 0.43 2290 | | | | | | | | | | | | | | | | | | | | | 2146.21 |
| 5/12/14 102 27 73 102 21 74 102 13.4 318.18 10700 29.97 333.56 10300 30.11 343.06 13400 40.29 100.37 0.43 2290 | | - | | | | | | - | | | | | | | | | | | | | 2190.14 |
| | | 102 | | 73 | 102 | | | 102 | | | | | | | | | | | | | 2290.51 |
| 5/22/14 235 27 74 234 21 74 234 12.5 325.05 10700 13.03 336.54 103000 13.11 358.27 134000 18.16 44.30 0.44 2334 | 5/22/14 | 235 | 27 | 74 | 234 | 21 | 74 | 234 | 12.5 | 325.05 | 107000 | 13.03 | 336.54 | 103000 | 13.11 | 358.27 | 134000 | 18.16 | 44.30 | 0.44 | 2334.81 |

Table 3. Remediation System Operational Data SummaryPHILLIPS 66 FACILITY #255353 (AOC 1396)

| | | | SVE S | System | | | | | 1 | | | Off-gas | Treatment | System | | | | | | |
|----------|------------|--------------|------------------------|------------|---------------|------------------------|------------|------------|------------------|----------------|--------------|---|----------------|---------------|------------------|----------------------|--------------|----------------|-------------|--------------------|
| | Merc | cer-Westlake | e Wells | Va | lley-Terry We | ells | AS Sy | stem | | VPC-1 | | , i i i i i i i i i i i i i i i i i i i | VPC-2 | | | VPC-3 | | 5 | System Tota | als |
| | | | | | | | | | | | | | | | | | | | Estimated | |
| | | | | | | | | | | | Estimated | | | Estimated | | | Estimated | Estimated | TPHg | Cumulative |
| | Period | Wells On- | Applied | Period | Wells On- | Applied | Period | Applied | | Influent | TPHg | Flow | Influent | TPHg | Flow | Influent | TPHg | TPHg | Removal | TPHg |
| | Operating | line | Vaccum | Operating | line | Vaccum | Operating | Pressure | Flow Rate | Conc. | Removed | Rate | Conc. | Removed | Rate | Conc. | Removed | Removed | Rate | Removed |
| Date | Hours | (count) | (in. H ₂ O) | Hours | (count) | (in. H ₂ O) | Hours | (psi) | (scfm) | (µg/m³) | (lbs.) | (scfm) | (µg/m³) | (lbs.) | (scfm) | (µg/m ³) | (lbs.) | (lbs.) | (lbs./hr) | (lbs.) |
| 5/27/14 | 100 | 27 | 76 | 101 | 21 | 75 | 100 | 12.7 | 333.45 | 107000 | 22.45 | 376.74 | 103000 | 24.42 | 376.67 | 134000 | 31.76 | 78.63 | 0.47 | 2413.44 |
| 6/3/14 | 168 | 16 | 77 | 168 | 22 | 68 | 169 | 13.3 | 321.35 | 107000 | 21.38 | 371.88 | 103000 | 23.82 | 371.30 | 134000 | 30.94 | 76.13 | 0.46 | 2489.58 |
| 6/10/14 | 166 | 16 | 79 | 166 | 22 | 82 | 165 | 13.8 | 323.85 | 107000 | 18.69 | 339.19 | 103000 | 18.71 | 350.53 | 134000 | 25.16 | 62.56 | 0.44 | 2552.14 |
| 6/16/14 | 144 | 16 | 80 | 143 | 22 | 85 | 144 | 12.7 | 316.85 | 55200 | 13.95 | 348.40 | 23200 | 6.48 | 357.32 | 28400 | 8.13 | 28.57 | 0.13 | 2580.71 |
| 6/25/14 | 213 | 16 | 78 | 214 | 22 | 85 | 214 | 10.7 | 320.62 | 55200 | 0.13 | 337.27 | 23200 | 0.06 | 354.99 | 28400 | 0.08 | 0.27 | 0.13 | 2580.97 |
| 7/1/14 | 2 | 16 | 75 | 2 | 22 | 78 | 2 | 15.2 | 315.28 | 131000 | 30.17 | 343.08 | 46000 | 11.53 | 352.97 | 83400 | 21.50 | 63.20 | 0.32 | 2644.17 |
| 7/9/14 | 195 | 16 | 78 | 195 | 22 | 79 | 195 | 10.1 | 323.83 | 131000 | 11.60 | 376.45 | 46000 | 8.95 | 375.90 | 83400 | 16.21 | 36.76 | 0.34 | 2680.93 |
| 7/15/14 | 73 | 16 | 71 | 138 | 22 | 75 | 137 | 13.2 | 308.90 | 131000 | 22.28 | 343.61 | 46000 | 8.64 | 357.62 | 83400 | 16.31 | 47.24 | 0.32 | 2728.16 |
| 7/21/14 | 147 | 16 | 73 | 146 | 22 | 76 | 147 | 12 | 306.32 | 131000 | 12.78 | 343.95 | 46000 | 5.04 | 350.79 | 83400 | 9.31 | 27.13 | 0.32 | 2755.29 |
| 7/30/14 | 85 | 16 | 71 | 85 | 22 | 70 | 85 | 12.2 | 314.00 | 33900 | 5.50 | 338.85 | 39300 | 6.88 | 352.17 | 35700 | 6.50 | 18.88 | 0.14 | 2774.17 |
| 8/5/14 | 138 | 18 | 73 | 138 | 22 | 74 | 138 | 11.8 | 312.81 | 33900 | 7.31 | 328.88 | 39300 | 8.91 | 349.19 | 35700 | 8.59 | 24.81 | 0.13 | 2798.98 |
| 8/13/14 | 184 | 18 | 73 | 184 | 22 | 64 | 184 | 12.3 | 327.24 | 33900 | 7.65 | 343.02 | 39300 | 9.29 | 362.57 | 35700 | 8.92 | 25.86 | 0.14 | 2824.84 |
| 8/21/14 | 184 | 18 | 73 | 184 | 22 | 64 | 184 | 12 | 311.21 | 33900 | 4.82 | 388.48 | 39300 | 6.98 | 381.94 | 35700 | 6.23 | 18.03 | 0.15 | 2842.87 |
| 8/26/14 | 122 | 18 | 71 | 122 | 22 | 62 | 122 | 14.9 | 339.72 | 20500 | 5.50 | 439.51 | 19500 | 6.77 | 408.65 | 4850 | 1.57 | 13.84 | 0.07 | 2856.71 |
| 9/4/14 | 211 | 18 | 82 | 211 | 22 | 73 | 211 | 13 | 338.28 | 20500 | 3.79 | 473.59 | 19500 | 5.05 | 436.07 | 4850 | 1.16 | 10.00 | 0.07 | 2866.71 |
| 9/10/14 | 146 | 18 | 82 | 146 | 22 | 74 | 146 | 12.2 | 334.25 | 20500 | 4.26 | 462.21 | 19500 | 5.60 | 419.59 | 4850 | 1.27 | 11.13 | 0.07 | 2877.84 |
| 9/17/14 | 166 | 18 | 81 | 166 | 22 | 77 | 166 | 12.9 | 341.08 | 20500 | 3.30 | 454.77 | 19500 | 4.19 | 413.23 | 4850 | 0.95 | 8.43 | 0.07 | 2886.27 |
| 9/22/14 | 126 223 | 18 18 | 80 80 | 126 223 | 22 22 | 76 77 | 126 223 | 11.5 14 | 328.56 323.83 | 20500 16500 | 5.63 6.16 | 452.80 416.06 | 19500 67800 | 7.38 32.54 | 424.43 395.12 | 4850 15200 | 1.72 6.93 | 14.72 45.64 | 0.07 | 2900.99 2946.63 |
| 10/3/14 | 308 | 18 | 80 | 308 | 22 | 82 | 308 | 14 | 323.83 | 16500 | 6.94 | 416.06 | 67800 | 32.54 | 413.66 | 15200 | 7.91 | 45.64 51.21 | 0.15 | 2946.63 |
| 10/16/14 | 308 | 18 | 79 | 308 | 22 | 82 | 308 | 12.4 | 333.97 | 820 | 0.94 | 426.08 | 820 | 0.21 | 365.29 | 875 | 0.22 | 0.60 | 0.15 | 2997.84 |
| 11/11/14 | 181 | 18 | 79 | 181 | 22 | 75 | 181 | 12.4 | 319.37 | 820 | 0.18 | 401.50 | 820 | 0.21 | 305.29 | 875 | 0.22 | 1.23 | 0.00 | 2998.44 |
| 11/26/14 | 358 | 15 | 79 | 358 | 19 | 73 | 358 | 9.1 | 285.03 | 6930 | 1.37 | 337.16 | 6210 | 1.45 | 333.38 | 6140 | 1.42 | 4.24 | 0.00 | 3003.90 |
| 12/10/14 | 185 | 15 | 90 | 185 | 19 | 80 | 185 | 9 | 286.29 | 6930 | 2.19 | 350.27 | 6210 | 2.41 | 344.49 | 6140 | 2.35 | 6.95 | 0.02 | 3010.85 |
| 12/23/14 | 295 | 15 | 91 | 296 | 19 | 80 | 295 | 12.9 | 315.04 | 6930 | 2.33 | 334.14 | 6210 | 2.60 | 352.16 | 6140 | 2.71 | 7.65 | 0.02 | 3018.50 |
| 1/6/15 | 285 | 13 | 90 | 335 | 19 | 76 | 336 | 13 | 331.40 | 1060 | 0.44 | 405.42 | 1095 | 0.56 | 399.64 | 12100 | 6.05 | 7.04 | 0.02 | 3025.54 |
| 1/20/15 | 334 | 13 | 71 | 334 | 19 | 70 | 333 | 12.7 | 353.11 | 1060 | 0.47 | 301.76 | 1095 | 0.41 | 360.20 | 12100 | 5.44 | 6.32 | 0.02 | 3031.86 |
| 2/3/15 | 333 | 11 | 76 | 333 | 28 | 68 | 334 | 11.5 | 309.19 | 1060 | 0.09 | 333.62 | 1095 | 0.10 | 357.34 | 12100 | 1.23 | 1.43 | 0.02 | 3033.29 |
| 2/6/15 | 76 | 11 | 82 | 76 | 14 | 73 | 75 | 11.7 | 320.72 | 1060 | 0.12 | 343.69 | 1095 | 0.13 | 356.96 | 12100 | 1.54 | 1.79 | 0.02 | 3035.08 |
| 2/10/15 | 95 | 15 | 84 | 95 | 14 | 74 | 96 | 14.2 | 341.44 | 1060 | 0.09 | 351.01 | 1095 | 0.10 | 363.64 | 12100 | 1.12 | 1.31 | 0.02 | 3036.39 |
| 2/13/15 | 68 | 18 | 75 | 68 | 13 | 78 | 68 | 11.9 | 332.46 | 1060 | 0.03 | 323.87 | 1095 | 0.03 | 351.46 | 12100 | 0.32 | 0.37 | 0.02 | 3036.76 |
| 2/16/15 | 20 | 22 | 84 | 20 | 11 | 87 | 20 | 12.1 | 331.29 | 875 | 0.23 | 333.00 | 2940 | 0.79 | 341.66 | 3340 | 0.92 | 1.94 | 0.01 | 3038.70 |
| 2/25/15 | 214 | 22 | 84 | 215 | 21 | 87 | 214 | 11 | 135.72 | 875 | 0.08 | 158.62 | 2940 | 0.00 | 168.13 | 3340 | 0.00 | 0.08 | 0.00 | 3038.77 |
| 3/4/15 | 169 | 8 | 83 | 0 | 0 | NM | 169 | 10 | 144.32 | 875 | 0.09 | 162.42 | 2940 | 0.00 | 164.72 | 3340 | 0.00 | 0.09 | 0.00 | 3038.87 |
| 3/12/15 | 196 | 19 | 85 | 0 | 0 | NM | 196 | 9.3 | 134.97 | 1970 | 0.14 | 167.89 | 2300 | 0.00 | 169.75 | 2290 | 0.00 | 0.14 | 0.00 | 3039.01 |
| 3/18/15 | 140 | 9 | 100 | 0 | 0 | NM | 139 | 16.6 | 148.80 | 1970 | 0.13 | 154.76 | 2300 | 0.00 | 159.31 | 2290 | 0.00 | 0.13 | 0.00 | 3039.13 |
| 3/24/15 | 116 | 9 | 99 | 0 | 0 | NM | 117 | 8.5 | 142.43 | 1970 | 0.23 | 154.86 | 2300 | 0.00 | 159.26 | 2290 | 0.00 | 0.23 | 0.00 | 3039.36 |

Notes:

| SVE | = | Soil Vapor Extraction | AS | = | Air Sparge | VPC | = | Vapor Phase Carbon |
|----------------------|---|-----------------------|----------------------|---|-------------------------|------|---|---|
| in. H ₂ O | = | inches of water | psi | = | pounds per square inch | scfm | = | standard cubic feet per minute |
| ppm | = | parts per million | (µg/m ³) | = | micrograms per cubic me | TPHg | = | Total Petroleum Hydrocarbons (Gasoline) |

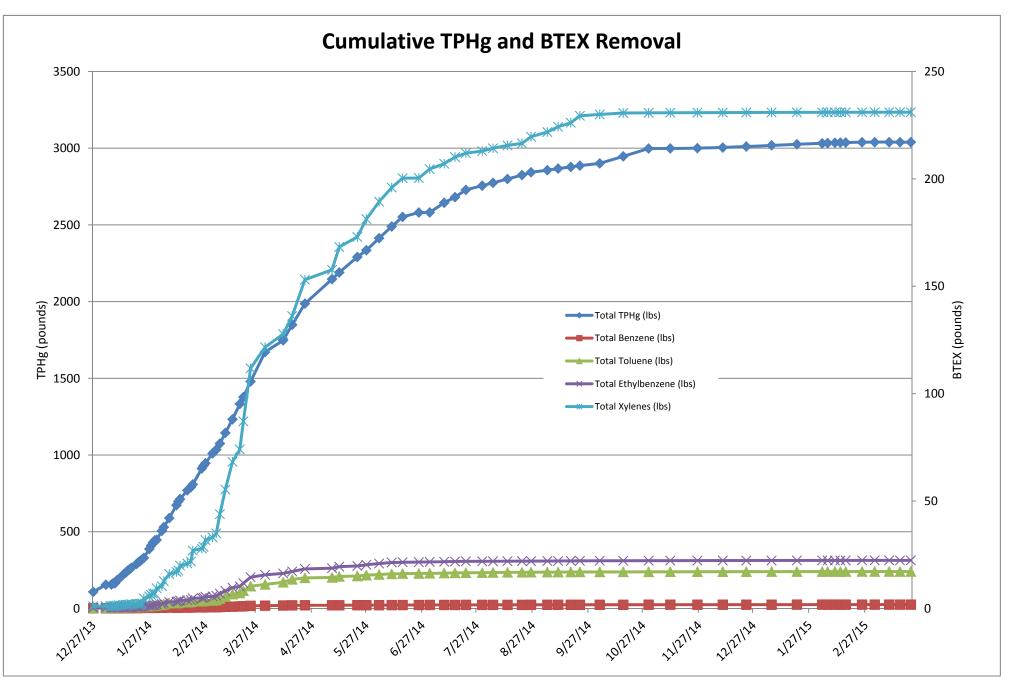


Table 4. SVE PID Data Summary PHILLIPS 66 FACILITY #255353 (AOC 1396)

| Date | | | We | stlake SVE | Wells - PID | Readings (p | pm) | | |
|------------|-----|-----|-----|------------|-------------|-------------|-----|-----|-----|
| | WC1 | WC2 | WC3 | WB3 | WB2 | WB1 | WA3 | WA2 | WA1 |
| 1/17/2014 | 6 | 8.6 | 3.4 | 5 | 10.9 | 3 | 0.2 | 1.2 | 0.5 |
| 1/20/2014 | 5.4 | 9 | 7.1 | 5.3 | 4.5 | 3.7 | 3.4 | 5.4 | 5.1 |
| 1/21/2014 | 1.8 | 1.7 | 2.7 | 2.2 | 1.6 | 1.3 | 1.3 | 2.3 | 2 |
| 1/27/2014 | 1 | 1.2 | 1.9 | 1.5 | 1.4 | 1.3 | 1.9 | 2.7 | 2.7 |
| 1/29/2014 | 1.5 | 1.6 | 2 | 3.2 | 1.9 | 3.2 | 2.3 | 5.8 | 3.3 |
| 2/3/2014 | 1.5 | 1.6 | 2 | 3.2 | 1.9 | 3.2 | 2.3 | 5.8 | 3.3 |
| 2/12/2014 | 0.2 | 0.1 | 1.7 | 0.8 | 0.1 | 0.1 | 0 | 0.1 | 0 |
| 2/19/2014 | 0.7 | 0.6 | 0.7 | 0.6 | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 |
| 2/27/2014 | 0.9 | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.6 | 1.8 | 1.9 |
| 3/7/2014 | 0.6 | 0.3 | 0.5 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.1 |
| 3/20/2014 | 0.7 | 0.6 | 0.5 | 0.4 | 0.4 | 0.4 | 0.3 | 0.2 | 0.3 |
| 4/16/2014 | 69 | 225 | 210 | 135 | 32 | 225 | 64 | 210 | 115 |
| 6/3/2014 | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 8/5/2014 | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 11/26/2014 | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 1/6/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 1/28/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 2/3/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 2/6/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 2/10/2015 | OL | OL | OL | OL | OL | 0 | 4 | 0.3 | 0.1 |
| 2/13/2015 | 0 | 0.1 | 6.2 | 0 | 4 | 0 | 0 | 0 | 0 |
| 2/16/2015 | 0 | 0 | 0 | 0 | 0 | OL | OL | OL | OL |
| 3/4/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 3/12/2015 | OL | OL | OL | ÖL | OL | OL | OL | OL | OL |
| 3/18/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL |

| V9 | V7 | V1 | V6 | PID Readin V2 | V5 | V3 | V4 |
|-----|-----|-----|-----|------------------|------|-----|------|
| 7.8 | 3.3 | 2.4 | 4.3 | 15.1 | 38.8 | 3.3 | 69.4 |
| 4 | 1.8 | 2.3 | 1.6 | 2.3 | 35.8 | 3 | 2.8 |
| 5.3 | 1.4 | 2.6 | 2.3 | 9 | 32 | 2.3 | 2.9 |
| 4.6 | 1 | 1.1 | 0.8 | 3 | 42.5 | 2.4 | 5.3 |
| 3.2 | 1.2 | 1.4 | 2 | 4.8 | 35.2 | 1.4 | 2.1 |
| 1.4 | 1.2 | 1.7 | 1.4 | 3.3 | 26.9 | 1 | 1.1 |
| 0.9 | 0.8 | 1.2 | 1.2 | 2.2 | 27.5 | 1.1 | 2 |
| 0.8 | 1 | 0.9 | 1 | 1.5 | 17.3 | 1.3 | 1.1 |
| 0.7 | 0.6 | 0.7 | 1 | 1.8 | 31.3 | 0.6 | 0.8 |
| 0.7 | 0.6 | 0.6 | 0.9 | 1.9 | 31 | 0.4 | 0.8 |
| 0.6 | 0.7 | 0.4 | 1.5 | 1.5 | 51.1 | 0.5 | 0.3 |
| 0.1 | 0.1 | 0.1 | 0.1 | W | 81.1 | W | 0.1 |
| 0 | 0 | 0.1 | 0 | 0 | 22.8 | W | 0.1 |
| | | | | | 22 | W | |
| | 0 | W | | W | 0.1 | 0.3 | 0.7 |
| 0.2 | 0.4 | OL | 0.2 | OL | 0.2 | OL | 0.6 |
| 0.5 | 0.6 | 1 | 0.2 | 0.6 | 0.5 | 0.6 | 0.6 |
| 0.3 | 0.2 | 0.6 | OL | 0.1 | 0.2 | OL | 0.4 |
| 0 | 0 | 0.4 | OL | 0 | 0.2 | OL | 0.1 |
| OL | 0.1 | 0 | OL | 0.1 | 0 | OL | 0 |
| OL | 0.1 | OL | OL | 0 | 0 | OL | 0.1 |
| OL | 0 | 0.2 | 0 | 0.1 | 0 | 0 | 0 |
| OL | OL | OL | OL | OL | OL | OL | OL |
| OL | OL | OL | OL | OL | OL | OL | OL |
| OL | OL | OL | OL | OL | OL | OL | OL |

| Date | | | | | | | | M | ercer SVE V | Vells - PID F | eadings (pp | om) | | | | | | | |
|------------|-----|-----|------|------|------|------|------|-----|-------------|---------------|-------------|------|------|------|------|------|------|------|------|
| | M6 | M7 | M10 | M9 | M8 | M1 | M2 | M3 | M4 | M5 | M14 | M13 | M15 | M12 | M11 | M16 | M17 | M18 | M19 |
| 1/17/2014 | 0.1 | 0.4 | 0.3 | 1.2 | 184 | 3.5 | 22.3 | 0 | 9.9 | 10.5 | 13 | 13.5 | 13.7 | 430 | 260 | 31 | 107 | 220 | 200 |
| 1/20/2014 | 5.6 | 7.2 | 10.1 | 16.8 | 171 | 2.2 | 3.5 | 3.7 | 1.1 | 1.2 | 3.2 | 3.3 | 4.3 | 281 | 235 | 29.7 | 150 | 184 | 222 |
| 1/21/2014 | 3.2 | 3 | 2.2 | 1.7 | 145 | 6.5 | 4.1 | 3.4 | 2.4 | 2 | 2.6 | 3.1 | 4.6 | 184 | 267 | 46.2 | 153 | 161 | 226 |
| 1/27/2014 | 3.5 | 4.8 | 7.5 | 16 | 236 | 0.9 | 1.2 | 1.1 | 0.7 | 0.5 | 1.5 | 0.6 | 2.9 | 100 | 355 | 33.8 | 216 | 183 | 240 |
| 1/29/2014 | 2.8 | 3.7 | 7.6 | 13.9 | 191 | 0.6 | 0.9 | 1.1 | 0.7 | 0.7 | 1.9 | 0.7 | 4 | 40 | 302 | 23 | 193 | 156 | 160 |
| 2/3/2014 | 2.8 | 3.7 | 7.6 | 13.9 | 191 | 0.6 | 0.9 | 1.1 | 0.7 | 0.7 | 1.9 | 0.7 | 4 | 40 | 302 | 23 | 193 | 156 | 160 |
| 2/12/2014 | 0 | 0.1 | 0 | 0 | 98.9 | 2 | 2.3 | 2.5 | 2.6 | 3.1 | 6.1 | 4.3 | 8.9 | 15.5 | 237 | 16.9 | 159 | 97.5 | 36.1 |
| 2/19/2014 | 0.4 | 0.7 | 0.3 | 0.3 | 78.1 | 1.9 | 2.1 | 2.4 | 2.2 | 2.6 | 4 | 4 | 7.8 | 18.1 | 192 | 13.5 | 121 | 65 | 25.9 |
| 2/27/2014 | 2.3 | 2.7 | 3.8 | 6 | 63.9 | 0.5 | 0.4 | 0.3 | 0.1 | 0.2 | 1.6 | 0.4 | 1.6 | 0.2 | 179 | 8 | 139 | 70 | 21.5 |
| 3/7/2014 | 0.1 | 0.3 | 0.1 | 0.1 | 60.5 | 1.8 | 1.4 | 1.1 | 0.8 | 0.8 | 2 | 0.7 | 1.4 | 0.6 | 178 | 9.5 | 134 | 71.2 | 21.5 |
| 3/20/2014 | 0.3 | 0.7 | 0.2 | 0.2 | 58 | 3.1 | 1.8 | 1.4 | 0.8 | 0.8 | 1.6 | 0.7 | 1.3 | 0.6 | 156 | 16.1 | 146 | 101 | 14.2 |
| 4/16/2014 | W | 0.4 | 0.1 | 2.6 | 49.3 | 1.6 | 0.3 | 0.2 | 0.1 | 0.1 | 1.1 | 0.1 | 0.1 | 0.1 | 183 | 8.3 | 154 | 118 | 8.5 |
| 6/3/2014 | 0.1 | 0 | 0.2 | 0.8 | 8 | 0 | OL | 0.1 | 0.1 | W | 1.1 | 0 | OL | 0.1 | 124 | 12.5 | 74.5 | 31 | 0.8 |
| 8/5/2014 | | | | | 7.3 | | | | | W | - | | | | 74.1 | 5.1 | 63.7 | 13.1 | |
| 11/26/2014 | | | 0.4 | 0.3 | 10.4 | | W | | | W | | | | W | | | | | W |
| 1/6/2015 | 1.9 | 1 | OL | 0.7 | 9 | 0.8 | OL | 0.7 | 1 | OL | 11 | W | 0.6 | OL | 7.4 | 4.6 | 9.6 | 4.5 | OL |
| 1/28/2015 | 2.9 | 1.4 | 1.5 | 2.5 | 8.9 | 2.5 | 0.1 | 1.3 | 0.2 | 0.2 | 0.4 | 0.8 | 0.2 | 20.5 | 9.5 | 2.6 | 12 | 3 | 0.8 |
| 2/3/2015 | 2.5 | OL | 0.8 | 2.1 | 9.3 | 2.3 | OL | OL | OL | OL | OL | 1.2 | OL | 14.9 | 11.5 | 4.8 | 10.7 | 3.8 | OL |
| 2/6/2015 | 1.9 | OL | 2.5 | 2.7 | 4.8 | 3 | OL | OL | OL | OL | OL | 4.5 | OL | 19.3 | 3.5 | 2.3 | 5.2 | 2 | OL |
| 2/10/2015 | 2 | OL | 0.1 | 0.1 | 2.1 | 0 | OL | OL | OL | OL | OL | 0.1 | OL | 11.1 | 4.6 | 0.1 | 6.8 | 0.1 | OL |
| 2/13/2015 | 0.1 | OL | 0.1 | 0.1 | 1 | OL | OL | OL | OL | OL | OL | 0 | OL | 10.6 | 3.8 | OL | 4 | 0 | OL |
| 2/16/2015 | OL | OL | 0.1 | 0 | 0.1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7.5 | 0.1 | 0 | 0.1 | 0 | 13.2 |
| 3/4/2015 | OL | OL | 0.3 | 0.2 | 1.8 | OL | OL | OL | 0 | OL | OL | OL | OL | 8.4 | 3.3 | OL | 2.1 | OL | 3.7 |
| 3/12/2015 | 0 | 0.3 | 0 | 0.1 | 1.6 | 10.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 8.2 | 1.8 | 1.2 | 1.1 | 1 | 2.4 |
| 3/18/2015 | OL | OL | OL | 0 | 0.3 | 0.1 | OL | OL | 0.5 | OL | OL | OL | OL | 4.9 | 0.9 | 0.1 | 0 | OL | 0.8 |

| Date | | | | | | | erry SVE W | ells - PID R | eadings (pp | | | | | | |
|------------|-------|-------|-------|-------|---------|----------|------------|--------------|-------------|---------|-------|-------|-------|-------|-------|
| | | TEFR1 | TMW65 | | TSVE11- | TSVE10 - | | | | TSVE12- | | | TEFR2 | | TMW48 |
| | TSVE3 | AIR | AIR | TSVE4 | MW67 | MW66 | TSVE2 | TSVE1 | TSVE7 | MW68 | TSVE5 | TSVE6 | AIR | TSVE8 | AIR |
| 1/17/2014 | 19.2 | 9.5 | 11.8 | 2.6 | 4.6 | 107 | 4.1 | 1.7 | 1.5 | 1.3 | 20.1 | 6.4 | 0.4 | 0.3 | 131 |
| 1/20/2014 | 26.6 | 10.3 | 8.5 | 8.4 | 11.1 | 125 | 10 | 5.5 | 3.5 | 4.7 | 6.3 | 5.4 | 4.5 | 2 | 115 |
| 1/21/2014 | 17.1 | 3.1 | 4.1 | 3.4 | 5.8 | 115 | 1.7 | 1 | 1.2 | 1.4 | 6.5 | 4.9 | 3.8 | 4.5 | 100 |
| 1/27/2014 | 15.5 | 5.1 | 3.1 | 1.9 | 3.5 | 116 | 4.2 | 2.2 | 1.1 | 1.2 | 4.7 | 3.7 | 1.3 | 1 | 113 |
| 1/29/2014 | 14.3 | 1.1 | 1.7 | 2.3 | 7.2 | 138 | 0.5 | 0.5 | 0.6 | 0.7 | 7.3 | 3.6 | 2.9 | 5.7 | 97.1 |
| 2/3/2014 | 14.3 | 1.1 | 1.7 | 2.3 | 7.2 | 138 | 0.5 | 0.5 | 0.6 | 0.7 | 2.4 | 2.9 | 2.9 | 6.2 | 69.7 |
| 2/12/2014 | 3.6 | 1 | 1.1 | 1.9 | 7.2 | 120 | 0.4 | 0.5 | 0.6 | 0.4 | 3.4 | 3.2 | 2.5 | 6.2 | 77.3 |
| 2/19/2014 | 5.6 | 1 | 1.2 | 1.6 | 3.5 | 71.3 | 0.6 | 0.6 | 0.6 | 0.6 | 2.9 | 2.2 | 2.1 | 2.4 | 47 |
| 2/27/2014 | 3.4 | 1 | 0.9 | 1.2 | 4.1 | 58.7 | 0.3 | 0.3 | 0.3 | 0.4 | 0.7 | 1.2 | 0.9 | 1.6 | 29.8 |
| 3/7/2014 | 3.5 | 0.9 | 1 | 1 | 4 | 52.7 | 0.1 | 0.1 | 0.1 | 0.3 | 0.6 | 1.1 | 0.9 | 1.7 | 26.3 |
| 3/20/2014 | 2.8 | 2.2 | 1.5 | 0.9 | 2.6 | 44.9 | 0.9 | 4.4 | 0.7 | 0.7 | 0.3 | 0.4 | 0.2 | 0.5 | 18.4 |
| 4/16/2014 | 3.2 | 1.5 | 0.8 | 0.2 | 2.5 | 45 | 1.8 | 1 | 0.2 | 0.3 | 0.2 | 0.1 | 0 | 0.1 | 16.1 |
| 6/3/2014 | 0.8 | 0.5 | 0.3 | 0.2 | 0.6 | 30.7 | 1.3 | 0.4 | 0.1 | 0.1 | 0 | 0 | 0.1 | 0 | 0.3 |
| 8/5/2014 | | | | | | 16.3 | | | | | | | | | |
| 11/26/2014 | | | OL | | | | | | | | | | OL | | |
| 1/6/2015 | 1.9 | 1.4 | 1.9 | 0.3 | 1 | 0.5 | 0 | 0.5 | 0.4 | 1.4 | 0.3 | 0.4 | OL | 0.1 | 0.1 |
| 1/28/2015 | 1 | 0.9 | 1.9 | 1.8 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 1 | 0.5 | 0.8 | 0.7 | 0.7 | 0.3 |
| 2/3/2015 | OL | 0.1 | OL | 0.2 | OL | OL | 0.3 | 0.5 | 0.3 | OL | 0.2 | 0.4 | OL | 0.7 | OL |
| 2/6/2015 | OL | 0.4 | OL | 0.3 | OL | OL | 0.2 | 0.3 | 0.4 | OL | 0 | 0.1 | OL | 0.1 | OL |
| 2/10/2015 | OL | 0 | OL | 0.1 | OL | OL | 0.1 | 0 | 0.1 | OL | 0.1 | 0.1 | OL | 0.1 | OL |
| 2/13/2015 | OL | OL | OL | 0 | OL | OL | 0 | 0 | 0.1 | OL | 0 | 0.1 | OL | 0 | OL |
| 2/16/2015 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | OL | 0.1 | 0 | 0 | 0 | 0 |
| 3/4/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 3/12/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL |
| 3/18/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL |

| SVE | = | Soil Vapor Extraction |
|-----|---|---------------------------|
| PID | = | Photo Ionization Detector |
| ppm | = | parts per million |
| | = | Not Measured |
| OL | = | Offline |
| W | = | Water in Well |
| | | |

Table 5. AS Flow Data Summary PHILLIPS 66 FACILITY #255353 (AOC 1396)

| Date | | | | | | | | | Westla | ke AS Well | s - Flow Ra | te Readings | s (scfm) | | | | | | | | | | | | | | |
|---|--|---|---|--|---|---|--|--|---|--|--|---|---|--|--|--|---|--|--|--|---|---|---|--|---|--|--|
| | W-1 | W-2 | W-3 | W-4 | W-5 | W-6 | W-7 | W-8 | W-9 | W-10 | W-11 | W-12 | W-13 | W-14 | W-15 | W-16 | W-17 | W-21 | W-20 | W-19 | W-18 | 1 | | | | | |
| 1/23/2014 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | | | | | | |
| 1/31/2014 | 2 | 4 | >25 | 2 | 3.5 | 5 | <2 | <2 | 4.5 | <2 | <2 | 3.5 | 14.5 | 6 | 4 | 3 | 7 | 7.5 | 7 | 3 | 8.5 | | | | | | |
| 2/4/2014 | 2 | 3 | >25 | 3 | 3 | 7 | <2 | 5 | 4 | 2 | <2 | 4 | 11 | 7 | 3 | 3 | 7 | 7 | 7 | 4 | 8.5 | | | | | | |
| 2/12/2014 | <2 | 5 | >25 | 4 | <2 | 11 | 6 | 9 | 7 | <2 | 2 | 6 | 12 | 7 | 8 | 4 | 7.5 | 7 | 8 | 4 | 9 | | | | | | |
| 2/17/2014 | 2 | 6 | 9 | 3 | 2 | 9 | 4 | 8 | 5 | 3 | 3 | 6 | 16 | 8 | 6 | 4 | 8 | 10 | 13 | 4 | 10 | | | | | | |
| 2/26/2014 | 2 | 10 | 9 | 6 | <2 | 12 | 7 | 9.5 | 9 | 3 | 3 | 6 | 13 | 9 | 6 | 3 | 11 | 14 | 7.5 | 4 | 11 | | | | | | |
| 3/3/2014 | 2 | 10 | 10 | 5 | 3 | 12 | 8 | 9 | 4 | 5 | 4 | 7 | 13.5 | 10 | 6 | 6 | 10 | 8 | 9.5 | 5 | 11 | | | | | | |
| 3/18/2014 | 2 | 11 | <2 | 6 | 2 | 16 | 11 | 14 | 9 | 4 | 4 | <2 | 15 | 11 | 17 | 8 | 9 | 15 | 10 | 5 | 11 | | | | | | |
| 5/27/2014 | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | | | | | | |
| 7/9/2014 | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | | | | | | |
| 11/26/2014 | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | | | | | | |
| 2/13/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | | | | | | |
| 3/4/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dete | | | | | | | | | | | | Maraa | | Flaur Date | Deedinge | (0.0600) | | | | | | | | | | | |
| Date | мо | M 20 | Mac | MO | M 07 | M 46 | Ma | мо | M 47 | ME | M 40 | | er AS Wells | | | | MG | M 42 | MA | M 00 | M 40 | M 4 | M 00 | M 44 | MOE | MOA | M 04 |
| | M-8 | M-20 | M-26 | M-2 | M-27 | M-16 | M-3 | M-9 | M-17 | M-5 | M-19 | M-15 | M-7 | M-10 | e Readings M-14 | (scfm) M-18 | M-6 | M-13 | M-4 | M-22 | M-12 | M-1 | M-23 | M-11 | M-25 | M-24 | M-21 |
| 1/23/2014 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7.5 | 0 | 0 | M-15 0 | M-7 6 | | M-14 0 | M-18 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | M-24 0 | 0 |
| 1/23/2014 1/31/2014 | 9 9 | 0 3.5 | 0 <2 | 0 <2 | 0 <2 | 0 4.5 | | 0 5 | 7.5 7.5 | M-5 0 7.5 7 | - | M-15 | M-7 6 5 | M-10 | M-14 0 >25 | | 0 <2 | 0 <2 | 5 5.5 | 0 5 | 0 <2 | 0 11.5 | 0 <2 | 0 <2 | 0 7.5 | 0 4 | |
| 1/23/2014 1/31/2014 2/4/2014 | 9 9 10 | 0 | 0 <2 <2 | 0 <2 <2 | 0 <2 <2 | 0 | 0 3 4 | 0 5 5 | 7.5 | 0 7.5 7 | 0 | M-15 0 6 6 | M-7 6 | M-10 | M-14 0 >25 >25 | M-18 1 <2 | 0 <2 <2 | 0 <2 <2 | 5 | 0 | 0 <2 <2 | 0 11.5 11.5 | 0 <2 <2 | 0 <2 <2 | 0 7.5 5.5 | 0 4 >25 | 0 <2 |
| 1/23/2014 1/31/2014 2/4/2014 2/12/2014 | 9 9 10 10 | 0 3.5 <2 6 | 0 <2 | 0 <2 <2 <2 | 0 <2 <2 <2 | 0 4.5 | 0 3 4 3.5 | 0 5 | 7.5 7.5 | 0 7.5 7 9 | 0 | M-15 0 | M-7 6 5 | M-10 | M-14 0 >25 | M-18 1 <2 2 3 | 0 <2 <2 <2 | 0 <2 | 5 5.5 | 0 5 | 0 <2 <2 <2 <2 | 0 11.5 11.5 13 | 0 <2 | 0 <2 <2 <2 <2 | 0 7.5 5.5 8.5 | 0 4 | 0 <2 7 7 |
| 1/23/2014 1/31/2014 2/4/2014 2/12/2014 2/17/2014 | 9 9 10 10 11 | 0 3.5 <2 6 12 | 0 <2 <2 3 2 | 0 <2 <2 <2 <2 <2 | 0 <2 <2 <2 <2 <2 <2 | 0 4.5 | 0 3 4 | 0 5 5 5 6 | 7.5 7.5 7.5 7 8 | 0 7.5 7 9 10 | 0 | M-15 0 6 5.5 7 | M-7 6 5 6 7 5 | M-10 0 6 7 8 9 | M-14 0 >25 >25 | M-18 1 <2 | 0 <2 <2 | 0 <2 <2 <2 <2 2 | 5 5.5 | 0 5 5 6 | 0 <2 <2 | 0 11.5 11.5 13 14 | 0 <2 <2 <2 <2 2 | 0 <2 <2 <2 <2 <2 | 0 7.5 5.5 | 0 4 >25 | 0 <2 7 7 <2 |
| 1/23/2014 1/31/2014 2/4/2014 2/12/2014 2/17/2014 2/26/2014 | 9 9 10 10 11 12 | 0 3.5 <2 6 12 12 | 0 <2 <2 3 2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 | 0 4.5 | 0 3 4 3.5 3.5 4 | 0 5 5 5 | 7.5 7.5 | 0 7.5 7 9 10 11 | 0 | M-15 0 6 5.5 7 6.5 | M-7 6 5 6 7 | M-10 0 6 7 8 | M-14 0 >25 >25 >25 8 | M-18 1 <2 2 3 <2 | 0 <2 <2 <2 <2 <2 | 0 <2 <2 <2 | 5 5.5 | 0 5 5 6 8 | 0 <2 <2 <2 <2 | 0 11.5 11.5 13 14 12 | 0 <2 <2 <2 <2 2 2 | 0 <2 <2 <2 <2 <2 <2 <2 | 0 7.5 5.5 8.5 5.5 | 0 4 >25 | 0 <2 7 7 |
| 1/23/2014 1/31/2014 2/4/2014 2/12/2014 2/17/2014 2/26/2014 3/3/2014 | 9 9 10 10 11 12 13 | 0 3.5 <2 6 12 12 10 | 0 <2 <2 3 2 <2 <2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 4.5 3.5 4 6 5 | 0 3 4 3.5 | 0 5 5 5 6 | 7.5 7.5 7.5 7 8 8.5 9 | 0 7.5 7 9 10 11 12 | 0 3.5 3 4 5 6 | M-15 0 6 5.5 7 | M-7 6 5 6 7 5 6 7 7 | M-10 0 6 7 8 9 10 | M-14 0 >25 >25 >25 8 9 10 | M-18 1 <2 2 3 <2 | 0 <2 <2 <2 <2 <2 <2 2 2 | 0 <2 <2 <2 2 3 | 5 5.5 6.5 8 7 8 11 | 0 5 6 8 9 9 | 0 <2 <2 <2 <2 | 0 11.5 13 14 12 13 | 0 <2 <2 <2 2 2 2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 7.5 5.5 8.5 5.5 9 8 | 0 4 >25 | 0 <2 7 7 <2 <2 2 |
| 1/23/2014 1/31/2014 2/4/2014 2/12/2014 2/17/2014 2/26/2014 3/3/2014 3/18/2014 | 9 9 10 10 11 12 | 0 3.5 <2 6 12 12 10 11 | 0 <2 <2 3 2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 | 0 4.5 3.5 4 6 5 5 7 | 0 3 4 3.5 3.5 4 | 0 5 5 6 8 7 | 7.5 7.5 7.5 7 8 8.5 | 0 7.5 7 9 10 11 12 13 | 0 3.5 3 4 5 6 5 8 | M-15 0 6 5.5 7 6.5 6.5 | M-7 6 5 6 7 5 | M-10 0 6 7 8 9 10 11 11 | M-14 0 >25 >25 >25 8 9 | M-18 1 <2 2 3 <2 | 0 <2 <2 <2 <2 2 2 2 <2 | 0 <2 <2 2 2 3 3 | 5 5.5 6.5 8 7 8 | 0 5 6 8 9 9 12 | 0 <2 <2 <2 <2 | 0 11.5 11.5 13 14 12 | 0 <2 <2 <2 <2 2 2 | 0 <2 <2 <2 <2 <2 <2 <2 | 0 7.5 5.5 8.5 5.5 9 | 0 4 >25 | 0 <2 7 7 <2 <2 <2 |
| 1/23/2014 1/31/2014 2/4/2014 2/12/2014 2/12/2014 2/26/2014 3/3/2014 3/18/2014 5/27/2014 | 9 9 10 10 11 12 13 13 13 14 | 0 3.5 <2 6 12 12 12 10 11 25 | 0 <2 3 2 <2 <2 <2 <2 <2 <2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 4.5 3.5 4 6 5 | 0 3 4 3.5 3.5 4 | 0 5 5 6 8 7 | 7.5 7.5 7 8 8.5 9 10 | 0 7.5 7 9 10 11 12 13 15 | 0 3.5 3 4 5 6 | M-15 0 6 5.5 7 6.5 6.5 9 | M-7 6 5 6 7 5 6 7 7 | M-10 0 7 8 9 10 11 11 25 | M-14 0 >25 >25 >25 8 9 10 11 25 | M-18 1 <2 2 3 <2 3 4 7 | 0 <2 <2 <2 2 2 2 2 2 2 2 16 | 0 <2 <2 2 3 3 8 | 5 5.5 6.5 8 7 8 11 10 11 | 0 5 6 8 9 9 12 11.5 | 0 <2 <2 <2 <2 3 3 4 | 0 11.5 13 14 12 13 16 16 | 0 <2 <2 <2 2 2 2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 7.5 5.5 8.5 5.5 9 8 11 25 | 0 4 >25 >25 4 4 4 6 | 0 <2 7 7 <2 <2 2 8 |
| 1/23/2014 1/31/2014 2/4/2014 2/12/2014 2/17/2014 2/26/2014 3/3/2014 3/18/2014 5/27/2014 7/9/2014 | 9 9 10 10 11 12 13 13 | 0 3.5 <2 6 12 12 10 11 25 25 | 0 <2 3 2 <2 <2 <2 <2 <2 <2 <2 0 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 4.5 3.5 4 6 5 5 7 | 0 3 4 3.5 3.5 4 4.5 5 7 | 0 5 5 6 8 7 | 7.5 7.5 7 8 8.5 9 10 10 | 0 7.5 7 9 10 11 12 13 | 0 3.5 3 4 5 6 5 8 | M-15 0 6 5.5 7 6.5 6.5 9 8 | M-7 6 5 6 7 5 6 7 7 | M-10 0 6 7 8 9 10 11 11 | M-14 0 >25 >25 >25 8 9 10 11 | M-18 1 2 2 3 <2 3 4 7 0 | 0 <2 <2 <2 2 2 2 2 4 2 5 2 16 13 | 0 <2 <2 2 3 3 8 5 | 5 5.5 6.5 8 7 8 11 10 | 0 5 6 8 9 9 12 | 0 <2 <2 <2 <2 3 3 4 | 0 11.5 13 14 12 13 13 16 | 0 <2 <2 <2 2 2 2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 7.5 5.5 8.5 5.5 9 8 8 11 | 0 4 >25 >25 4 4 4 6 | 0 <2 7 7 <2 <2 2 8 0 |
| 1/23/2014 1/31/2014 2/4/2014 2/12/2014 2/12/2014 2/26/2014 3/3/2014 3/18/2014 5/27/2014 | 9 9 10 11 12 13 13 14 12 | 0 3.5 <2 6 12 12 12 10 11 25 | 0 <2 3 2 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <0 0 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 | 0 4.5 3.5 4 6 5 5 7 6.5 5 5 | 0 3 4 3.5 3.5 4 4.5 5 7 6 | 0 5 5 6 8 7 9 7 7 7 | 7.5 7.5 7 8 8.5 9 10 10 9 | 0 7.5 7 9 10 11 12 13 15 12 | 0 3.5 3 4 5 6 5 8 | M-15 0 6 5.5 7 6.5 6.5 9 8 6 | M-7 6 5 7 5 6 7 8 7 7 7 | M-10 0 7 8 9 10 11 11 25 20 | M-14 0 >25 >25 >25 8 9 10 11 25 25 | M-18 1 2 2 3 <2 3 4 7 0 | 0 <2 <2 <2 2 2 2 2 2 2 2 16 | 0 <2 <2 2 3 3 8 5 5 5 | 5 5.5 6.5 8 7 8 11 10 11 12 | 0 5 6 8 9 9 12 11.5 10 | 0 <2 <2 <2 <2 <2 3 3 4 6 6 4 | 0 11.5 11.5 13 14 12 13 16 16 16 16 | 0 <2 <2 2 2 2 2 2 3 1 1 | 0 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <1 1 | 0 7.5 5.5 8.5 5.5 9 8 11 25 25 | 0 4 >25 >25 4 4 4 6 9 7 | 0 <2 7 7 <2 <2 2 8 0 |

| Date | | | | | | | | | | | | | | | |
|------------|-----|-----|-----|-----|------|-----|------|-----|------|-----|------|-----|------|-----|--|
| | V-6 | V-7 | V-8 | V-9 | V-10 | V-5 | V-11 | V-4 | V-12 | V-3 | V-13 | V-2 | V-14 | V-1 | |
| 1/23/2014 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | |
| 1/31/2014 | 4 | 8 | 6 | <2 | 3 | 5 | 7.5 | 3 | 4 | 3.5 | 7.5 | 10 | 8.5 | 2 | |
| 2/4/2014 | 3.5 | 8 | 5 | <2 | 4 | 4 | 7.5 | 4 | 4 | 4 | 7 | 9.5 | 5 | 5 | |
| 2/12/2014 | 4 | 8 | 8 | <2 | 5 | 6 | 11 | 4 | 5 | 6 | 8 | 10 | 7 | 7 | |
| 2/17/2014 | 4 | 6 | 7 | 2 | 6 | 5 | 9 | 5 | 5 | 6 | 8 | 12 | 2 | 4 | |
| 2/26/2014 | 8 | 9 | 7 | 3 | 8 | 8 | 13.5 | 3.5 | 4 | 6 | 9 | 11 | 8 | 10 | |
| 3/3/2014 | 10 | 10 | 8 | 2 | 10 | <2 | 16.5 | 5 | 5 | 9 | 8 | 12 | 9 | 9 | |
| 3/18/2014 | 4 | 12 | 7 | 4 | 7 | <2 | 21 | 4 | 4 | 12 | 14 | 13 | <2 | 7 | |
| 5/27/2014 | 1 | 18 | 5 | 3 | 8 | 0 | 17 | 2 | 3 | 8 | 8 | 12 | 0 | 6 | |
| 7/9/2014 | 1 | 13 | 4 | 5 | 6 | 0 | 16 | 2 | 2 | 2 | 6 | 12 | 0 | 5 | |
| 11/26/2014 | 3 | 7 | 6 | 0 | 5 | 1 | | 3 | | 8 | 4 | 4 | 3 | | |
| 2/13/2015 | 3 | 7 | 5 | 0 | 4 | 1 | 0 | 2 | 0 | 7 | 5 | 4 | 5 | 0 | |
| 3/4/2015 | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | OL | |

Notes: AS

= SCFM

Air Sparge Standard Cubic Feet per Minute Not Measured =

= = Offline

OL

Operation and Maintenance Log Field Notes PHILLIPS 66 FACILITY #255353 (AOC 1396)

| Date | Time | Name | Comments |
|---------|----------|------|--|
| 1/6/15 | 12:45 PM | ejb | System operational upon arrival/departure. PID readings completed. V-belts on B-701 were replaced. |
| 1/20/15 | 2:00 PM | ejb | System operational upon arrival/departure. System was shut down during vac truck operation. Monthly vapor samples were collected. |
| 2/3/15 | 11:45 AM | ejb | System operational upon arrival/departure. PID readings completed. Insufficient water for pressure readings. System readings taken before wells shut down. B-701 operating at 51% and B-801 operating at 42%. After adjustments B-701 Vac into VLS 89" and B-801 Vac into VLS 74". |
| 2/6/15 | 3:00 PM | ejb | System operational upon arrival/departure. PID readings completed. System readings taken before wells shut down. B-701 operating at 55% and B-801 operating at 43%. |
| 2/10/15 | 2:15 PM | ejb | System operational upon arrival/departure. PID readings of open wells completed. System readings taken before wells shut down or opened. Wells WB1, WA3, WA2, WA1 were opened. B-701 operating at 59% and B-801 operating at 45%. After adjustments B-701 Vac into VLS 77" and B-801 Vac into VLS 80". |
| 2/13/15 | 12:00 PM | ejb | System operational upon arrival/departure. PID readings of open wells completed. System readings taken before wells shut down or opened. Wells WB1, WA3, WA2, WA1 were closed. Wells WC1, WC2, WC3, WB3, WB2 were opened. B-701 operating at 59% and B-801 operating at 45%. After adjustments B-701 Vac into VLS 88" and B-801 Vac into VLS 84". |
| 2/16/15 | 12:30 PM | ejb | System down upon arrival. System restarted. System alarms upon arrival: VFDA-8201 PNL, VFDA-8202 PNL, PWRA-8201 PNL @ 06:13 2/14/15 and FSPF ALM @ 20:17 2/14/15. System went down 2/14/15. PID readings of open wells completed. System readings taken before wells shut down or opened. Wells WC1, WC2, WC3, WB3, WB2, and M18 were closed. Wells M4, M19 and V1 were opened. B-701 operating at 57% and B-801 operating at 44%. After adjustments B-701 Vac into VLS 88" and B-801 Vac into VLS 82". System operational upon departure. |
| 2/25/15 | 9:00 AM | МĴМ | System running on arrival. Monthly samples taken. Skid 801 was shutdown for rebound. |
| 3/4/15 | 11:30 AM | ejb | System running on arrival. PID readings were taken of operating SVE wells. B-701 VFD was moved to 58%. AS readings of half of Mercer wells. |
| 3/12/15 | 3:45 PM | ejb | System running on arrival. PID readings were taken of all Mercer SVE wells. Insufficient water for pressure readings. Well M10 was closed and M4 was partially closed. Wells M1 and M16 were opened. System operational upon departure. |
| 3/18/15 | 12:15 PM | ejb | System running on arrival. PID readings were taken of operating Mercer SVE wells. Monthly water and vapor samples were collected. B-701 VFD was moved to 57%. System operational upon departure. |
| 3/24/15 | 3:00 PM | ejb | (System was shut down on 3/23-3/24 for GWS) System down upon arrival. Sightglasses on VLS were cleaned. AS readings of half of Mercer wells. System operational upon departure. |



 DATE:
 01/05/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

 ARRIVAL TIME:
 12:15

 DEPARTURE TIME:
 14:15

 LUNCH:
 N/A

 MTRL ACQUISITION:
 N/A

 TRAVEL > 100 MILES:
 N/A

PERSONNEL: Nicholas Gerkin

SUBCONTRACTORS: N/A

| | Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | |
|-----------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|------|-----|-----|
| | Hour 1 Hour 2 Hour 3 Hour 4 Hour 5 Hour 6 Hou | | | | | | | | | | | ur 7 | Но | ur 8 | | |
| Name | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm |
| Nicholas Gerkin | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: O&M System Restart

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Wet |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| N | Work Permit(s) | |
| N | Samples Collected | |
| N | Out of Scope Activities | |
| N | Waste Generated | |

WORK START & STOP TIMES

The 701 blower was down upon arrival.

A tailgate safety meeting and site walk were conducted.

The 701 blower belts were found shredded.

The remnants were removed and the 801 blower was temporarily LOTO to identify the belts used.

Belts were ordered, 701 blower was LOTO and the 801 blower was restarted.

The belts will be available tomorrow.

The 801 blower was operational upon departure.



 DATE:
 01/06/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

 ARRIVAL TIME:
 11:10

 DEPARTURE TIME:
 14:00

 LUNCH:
 N/A

 MTRL ACQUISITION:
 N/A

 TRAVEL >100 MILES:
 N/A

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| | Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | |
|-----------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|
| | Hour 1 Hour 2 Hour 3 Hour 4 Hour 5 Hour 6 Hour 7 Hou | | | | | | | | | | | | | ur 8 | | |
| Name | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm |
| Nicholas Gerkin | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: O&M System Restart

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Wet |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| N | Work Permit(s) | |
| N | Samples Collected | |
| N | Out of Scope Activities | |
| Ν | Waste Generated | |

WORK START & STOP TIMES

The 701 blower was LOTO upon arrival.

A tailgate safety meeting and site walk were conducted.

The system was shut down.

The 701 blower belts were replaced, and the guards were replaced.

The system was restarted.

The system operating parameters were recorded.

PID readings were taken on the operating SVE wells.

The system was operational upon departure.

Open Extraction Wells: M1, M3, M4, M6, M7, M8, M9, M11, M13, M14, M15, M16, M17, M18, TSVE3, TEFR1 AIR, TMW65 AIR, TSVE4, TSVE10, TSVE11, TSVE2, TSVE1, TSVE7, TSVE12, V9, V7, V6, V5, V4, TSVE5, TSVE6, TEFR2 AIR, TSVE8, TMW48 AIR



 DATE:
 01/20/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

| ARRIVAL TIME: | 08:00 |
|--------------------|-------|
| DEPARTURE TIME: | 16:00 |
| LUNCH: | N/A |
| MTRL ACQUISITION: | N/A |
| TRAVEL >100 MILES: | N/A |

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| | Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | |
|------|--|------|-----|--------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|
| | Но | ur 1 | Но | Hour 2 | | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | ur 8 |
| Name | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm |
| | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: O&M System Restart

| Y/N/NA | NOTES | COMMENTS |
|--------|---|------------------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Wet |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| N | Work Permit(s) | |
| Y | Samples Collected | Vapor samples collected |
| Y | Out of Scope Activities | Vac truck operation to clear wells |
| N | Waste Generated | |

WORK START & STOP TIMES

The system was operational upon arrival.

A tailgate safety meeting and site walk were conducted with vacuum truck operator.

The system was shut down. And the vacuum truck was connected to B-701 manifold.

@ 9:00 - started on M12 first 2 min was solid water column coming up. By 9:05 mostly air being pulled up, very small amounts of water left.

@ 9:07 - moved to M13 first 3 min mostly water with a little air being pulled up. By 9:13 mostly air being pulled up, with traces of water.

@ 9:14 - Started on M5 mostly water for the first minute. By 9:21 water was basically cleared.

@ 9:25 - Started on M2 water was pulled up to sight glass level but it doesn't appear that much water is actually being removed.

@ 9:36 - moved to M19 a lot of water was pulled up for the first 2 minutes, water was slightly silty. Water was cleared.

Moved quickly through wells M8, M9, M10, very little water was drawn up, wells were clear.

Spent about 15 minutes on M7 and M6 1st minutes on each well pulled significant water up.

M19 water still bubbling in sight glass, couldn't clear all the water.

M1 and M2 also have bubbling water. Stayed on each for another 5 minutes but couldn't completely clear the water.

Wells clear: M4, M5, M14, M13, M15, M12, M11, M17, M18 Wells with some water left: M16, M3, M2, M19

@ 10:35 - switched over to B-801 manifold

@10:43 - started on TSVE3, operated on for about 5 minutes.

@ 10:49 - moved to TEFR1 air ran on for about 6 minutes.

@ 10:55 – moved to TMW65 air, lots of water. Ran on the well for about 10 minutes, removed a lot of water but there was still water bubbling up in the sight glass.

@ 11:04 - moved to TSVE4, solid column of water for the first minute, after that splashing water up into sight glass.

@ 11:15 - moved to V1, pulled up a lot of water for the first 2 minutes. V1 was mostly cleared of water, constant small stream of water.

@ 11:22 moved to V2, pulled up a lot of water.

Wells V1, V2, V7, V9, TMW48, TSVE1, and TSVE7 were cleared.

V4 continuously pulled up a lot of water; could not clear water. Water continuously flowing into the well.

TSVE12 still had some water remaining.

The system was started back up.

@ 12:40 started emptying the vacuum truck back into secondary containment ~1,400gal was removed from wells.

Operating parameters were measured and recorded.

Monthly air samples were collected.

The system was operational upon departure.

Open Extraction Wells: M1, M2, M3, M4, M5, M6, M7, M8, M9, M10, M11, M12, M13, M14, M15, M16, M17, M18, M19, TSVE3, TEFR1 AIR, TMW65 AIR, TSVE4, TSVE10, TSVE11, TSVE2, TSVE1, TSVE7, TSVE12, V9, V7, V6, V5, V4, V3, V2, V1, TSVE5, TSVE6, TEFR2 AIR, TSVE8, TMW48 AIR



 DATE:
 02/03/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

 ARRIVAL TIME:
 11:45

 DEPARTURE TIME:
 16:45

 LUNCH:
 N/A

 MTRL ACQUISITION:
 N/A

 TRAVEL >100 MILES:
 N/A

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | | |
|--|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|-------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | our 8 |
| Name | qty | bpm |
| Nicholas Gerkin | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Cool and wet |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| Ν | Work Permit(s) | |
| N | Samples Collected | |
| Ν | Out of Scope Activities | |
| N | Waste Generated | |

WORK START & STOP TIMES

The system was operational upon arrival.

A tailgate safety meeting and site walk were conducted.

The system operating parameters were recorded.

PID readings were taken of the wells that were currently operating, and then select SVE wells were shut down to try and increase system vac and concentrations.

SVE wells that were closed: M3, M4, M5, M7, M14, M15, TSVE3, TSVE10, TSVE11, TSVE12, TEFR2 Air, V3, V6

SVE well vacuum readings were recorded after wells were closed and blower VFDs were checked to verify that blower motor amps would not exceed the set points.

The system was operational upon departure.

Open Extraction Wells: M1, M6, M8, M9, M10, M11, M12, M13, M16, M17, M18, TEFR1 AIR, TSVE4, TSVE2, TSVE1, TSVE7, V9, V7, V5, V4, V2, V1, TSVE5, TSVE6, TSVE8



| DATE: | 02/06/15 | ARRIVAL TIME: | 14:30 |
|---------------|--------------|--------------------|-------|
| SITE ID: | AOC 1396 | DEPARTURE TIME: | 17:00 |
| P66 PM: | Ed Ralston | LUNCH: | N/A |
| CARDNO ERI #: | 031326 | MTRL ACQUISITION: | N/A |
| CARDNO PM: | Kyle Sattler | TRAVEL >100 MILES: | N/A |
| | - | | |

PERSONNEL: Edward Burnacci, Kaden Reed

SUBCONTRACTORS: N/A

| Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | | |
|--|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | ur 8 |
| Name | qty | bpm |
| | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Cool and wet |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| Ν | Work Permit(s) | |
| N | Samples Collected | |
| Ν | Out of Scope Activities | |
| N | Waste Generated | |

WORK START & STOP TIMES

The system was operational upon arrival. A tailgate safety meeting and site walk were conducted.

The system operating parameters were recorded.

PID readings were taken of the wells that were currently operating, and SVE well V9 was shut down to try and increase system vac and concentrations.

SVE well that was closed: V9

VFDs were ramped up slightly to B-701 set @ 55% and B-801 set @ 43% and blower VFDs were checked to verify that blower motor amps would not exceed the set points.

The system was operational upon departure.

Open Extraction Wells: M1, M6, M8, M9, M10, M11, M12, M13, M16, M17, M18, TEFR1 AIR, TSVE4, TSVE2, TSVE1, TSVE7, V7, V5, V4, V2, V1, TSVE5, TSVE6, TSVE6



 DATE:
 02/10/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

| ARRIVAL TIME: | 14:15 |
|-------------------------------|-------|
| DEPARTURE TIME: | 17:00 |
| LUNCH: | N/A |
| MTRL ACQUISITION: | N/A |
| FRAVEL >100 MILES : | N/A |

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | | |
|--|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | ur 8 |
| Name | qty | bpm |
| | | | - | | | - | | - | | | - | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Warm and clear |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| Ν | Work Permit(s) | |
| N | Samples Collected | |
| Ν | Out of Scope Activities | |
| N | Waste Generated | |

WORK START & STOP TIMES

The system was operational upon arrival. A tailgate safety meeting and site walk were conducted.

realigate baroty mooting and bite wait were benaded

The system operating parameters were recorded.

PID readings were taken of the wells that were currently operating, and SVE wells M1, M16, TEFR1 Air, and V1 were shut down to try and increase system vac and concentrations. Wells TSVE4 and TSVE1 were partially closed as well.

SVE wells that were closed: M1, M16, TEFR1 Air, and V1 SVE wells that were partially closed: TSVE4 and TSVE1 SVE wells that were opened: WB1, WA3, WA2, WA1

VFDs were ramped up slightly to B-701 set @ 59% and B-801 set @ 45% and blower VFDs were checked to verify that blower motor amps would not exceed the set points.

The system was operational upon departure.

Open Extraction Wells: M6, M8, M9, M10, M11, M12, M13, M17, M18, WB1, WA3, WA2, WA1, TSVE4, TSVE2, TSVE1, TSVE7, V7, V5, V4, V2, TSVE5, TSVE6, TSVE8



 DATE:
 02/13/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

| ARRIVAL TIME: | 10:45 |
|--------------------|-------|
| DEPARTURE TIME: | 13:45 |
| LUNCH: | N/A |
| MTRL ACQUISITION: | N/A |
| TRAVEL >100 MILES: | N/A |

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | | |
|--|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | ur 8 |
| Name | qty | bpm |
| | | | - | | | - | | - | | | - | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Overcast and warm |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| Ν | Work Permit(s) | |
| N | Samples Collected | |
| Ν | Out of Scope Activities | |
| N | Waste Generated | |

WORK START & STOP TIMES

The system was operational upon arrival.

A tailgate safety meeting and site walk were conducted.

The system operating parameters were recorded.

PID readings were taken of the wells that were currently operating, and SVE wells M6, M13, and TSVE4 were shut down to try and increase system vac and concentrations. Wells WB1, WA3, WA2 and WA1 were closed to rotate through the Westlake SVE wells. Wells TSVE2, M18 and TSVE1 were partially closed as well.

SVE wells that were closed: M6, M13, TSVE4, WB1, WA3, WA2, and WA1 SVE wells that were partially closed: TSVE2, M18, and TSVE1 SVE wells that were opened: WC1, WC2, WC3, WB3, and WB2

VFDs were not changed, B-701 remained set @ 59% and B-801 @ 45% and blower VFDs were checked to verify that blower motor amps would not exceed the set points.

After wells were closed and opened, B-701 vacuum at VLS was 88" and vacuum at the blower was measured at 86", B-801 vacuum at VLS was 84" and vacuum at the blower was measured at 83".

The system was operational upon departure.

Open Extraction Wells: M8, M9, M10, M11, M12, M17, M18, WB1, WA3, WA2, WA1, TSVE2, TSVE1, TSVE7, V7, V5, V4, V2, TSVE5, TSVE6, TSVE8



 DATE:
 02/16/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

 ARRIVAL TIME:
 11:45

 DEPARTURE TIME:
 14:50

 LUNCH:
 N/A

 MTRL ACQUISITION:
 N/A

 TRAVEL >100 MILES:
 N/A

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | | |
|--|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | ur 8 |
| Name | qty | bpm |
| | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Sunny and clear |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| Ν | Work Permit(s) | |
| N | Samples Collected | |
| Ν | Out of Scope Activities | |
| N | Waste Generated | |

WORK START & STOP TIMES

The system was down upon arrival.

A tailgate safety meeting and site walk were conducted.

System alarms upon arrival: VFDA-8201 PNL@ 06:13 2/14/15, VFDA-8202 PNL@ 06:13 2/14/15, PWRA-8201 PNL@ 06:13 2/14/15, FSPF ALM@ 20:17 2/14/15. Based on the alarms it was concluded that there was a power failure onsite that occurred at 06:13 and the PLC recovered at 20:17 on 2/14/15.

The system was restarted.

The system operating parameters were recorded.

PID readings were taken of the wells that were currently operating and some closed wells, and SVE well M18 was shut down to try and increase system vac and concentrations. Wells WC1, WC2, WC3, WB3 and WB2 were closed after rotating through the Westlake SVE wells. Wells TSVE2 and TSVE1 were partially closed as well.

SVE wells that were closed: M18, WC1, WC2, WC3, WB3 and WB2 SVE wells that were partially closed: TSVE2 and TSVE1 SVE wells that were opened: M4, M19, and V1

VFDs were changed because of closing Westlake wells, B-701 set @ 57% and B-801 @ 44% and blower VFDs were checked to verify that blower motor amps would not exceed the set points.

After wells were closed and opened, B-701 vacuum at VLS was 88" and B-801 vacuum at VLS was 82".

The system was operational upon departure.

Open Extraction Wells: M4, M8, M9, M10, M11, M12, M17, M19, TSVE2, TSVE1, TSVE7, V7, V5, V4, V2, V1, TSVE5, TSVE6, TSVE8



DATE: 02/25/15 SITE ID: AOC 1396 P66 PM: Ed Ralston CARDNO ERI #: 031326 CARDNO PM: Kyle Sattler
 ARRIVAL TIME:
 09:00

 DEPARTURE TIME:
 12:30

 LUNCH:
 N/A

 MTRL ACQUISITION:
 N/A

 TRAVEL >100 MILES:
 N/A

PERSONNEL: Michael Miller

SUBCONTRACTORS: N/A

| Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | | |
|--|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | ur 8 |
| Name | qty | bpm |
| | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Overcast and warm |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| N | Work Permit(s) | |
| N | Samples Collected | |
| Ν | Out of Scope Activities | |
| Ν | Waste Generated | |

WORK START & STOP TIMES

The system was operational upon arrival. A tailgate safety meeting and site walk were conducted.

The system operating parameters were recorded.

Monthly samples were taken.

Skid 801 was shut down for rebound monitoring.

The system was operational upon departure.

Open Extraction Wells: M8, M9, M10, M11, M12, M17, M18, WB1, WA3, WA2, WA1



 DATE:
 03/04/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

| ARRIVAL TIME: | 11:00 |
|-------------------------------|-------|
| DEPARTURE TIME: | 13:00 |
| LUNCH: | N/A |
| MTRL ACQUISITION: | N/A |
| FRAVEL >100 MILES : | N/A |

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| | Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | |
|------|--|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|-------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | our 8 |
| Name | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm |
| | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Sunny and clear |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| N | Work Permit(s) | |
| N | Samples Collected | |
| Ν | Out of Scope Activities | |
| Ν | Waste Generated | |

WORK START & STOP TIMES

The system was operational upon arrival. A tailgate safety meeting and site walk were conducted.

B-801 and Valley AS were taken offline during the last visit.

The system operating parameters were recorded.

PID readings were taken of the wells that were currently operating.

AS readings were taken on half of the Mercer wells.

SVE wells that were closed: None SVE wells that were opened: None

VFD was changed, B-701 set @ 58% blower B-701 VFD was checked to verify that blower motor amps would not exceed the set points.

The system was operational upon departure.

Open Extraction Wells: M4, M8, M9, M10, M11, M12, M17, M19



 DATE:
 03/12/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

| ARRIVAL TIME: | 15:00 |
|--------------------|-------|
| DEPARTURE TIME: | 17:30 |
| LUNCH: | N/A |
| MTRL ACQUISITION: | N/A |
| TRAVEL >100 MILES: | N/A |

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| | Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | |
|------|--|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|-------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | our 8 |
| Name | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm |
| | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Sunny and clear |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| Ν | Work Permit(s) | |
| N | Samples Collected | |
| Ν | Out of Scope Activities | |
| N | Waste Generated | |

WORK START & STOP TIMES

The system was operational upon arrival. A tailgate safety meeting and site walk were conducted.

The system operating parameters were recorded.

PID readings were taken of all Mercer SVE wells.

SVE wells that were closed: M10 SVE wells that were partially closed: M4 SVE wells that were opened: M1, M16

VFD B-701 remained at set @ 58%, blower B-701 VFD was checked to verify that blower motor amps would not exceed the set points.

The system was operational upon departure.

Open Extraction Wells: M1, M4, M8, M9, M11, M12, M16, M17, M19



 DATE:
 03/18/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

 ARRIVAL TIME:
 11:30

 DEPARTURE TIME:
 15:00

 LUNCH:
 N/A

 MTRL ACQUISITION:
 N/A

 TRAVEL >100 MILES:
 N/A

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | | |
|--|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|-------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | our 8 |
| Name | qty | bpm |
| | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Sunny and clear |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| N | Work Permit(s) | |
| Y | Samples Collected | |
| Ν | Out of Scope Activities | |
| Ν | Waste Generated | |

WORK START & STOP TIMES

The system was operational upon arrival. A tailgate safety meeting and site walk were conducted.

The system operating parameters were recorded.

Monthly vapor and water samples were collected. Vapor: 12:25-13:05 Water: 13:30-13:40

Sight glasses on AWS tanks were cleaned.

PID readings were taken of operating Mercer SVE wells.

SVE wells that were closed: None SVE wells that were partially closed: None SVE wells that were opened: None

VFD B-701 was lowered to @ 57%, blower B-701 VFD was checked to verify that blower motor amps would not exceed the set points.

The system was operational upon departure.

Open Extraction Wells: M1, M4, M8, M9, M11, M12, M16, M17, M19



 DATE:
 03/24/15

 SITE ID:
 AOC 1396

 P66 PM:
 Ed Ralston

 CARDNO ERI #:
 031326

 CARDNO PM:
 Kyle Sattler

| ARRIVAL TIME: | 14:00 |
|--------------------|-------|
| DEPARTURE TIME: | 16:00 |
| LUNCH: | N/A |
| MTRL ACQUISITION: | N/A |
| TRAVEL >100 MILES: | N/A |

PERSONNEL: Edward Burnacci

SUBCONTRACTORS: N/A

| ŀ | Heat Stress Management and Fluid Replacement Chart | | | | | | | | | | | | | | | |
|------|--|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|
| | Но | ur 1 | Но | ur 2 | Но | ur 3 | Но | ur 4 | Но | ur 5 | Но | ur 6 | Но | ur 7 | Но | ur 8 |
| Name | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm | qty | bpm |
| | | | | | | | | | | | | | | | | |

Water = recommended 32 ounces per hour / working pulse = 180 - age beats per minute (bpm)

FIELD ACTIVITIES CONDUCTED: Routine System O&M and PID Readings

| Y/N/NA | NOTES | COMMENTS |
|--------|---|-----------------------------|
| Y | Equipment | Hand tools, PID, anemometer |
| N/A | Property Owner/Operator/3 rd Party Notifications | |
| Y | Site Walk/Site Conditions | Overcast |
| Y | Tailgate Safety Meeting Conducted | |
| Y | Equipment Calibrated & Type | PID |
| N/A | 2-at-10 Safety Meeting/Example SPSA | |
| N/A | 2-at-2 Safety Meeting/Example SPSA | |
| Ν | Work Permit(s) | |
| Y | Samples Collected | |
| Ν | Out of Scope Activities | |
| Ν | Waste Generated | |

WORK START & STOP TIMES

The system was down upon arrival. A tailgate safety meeting and site walk were conducted.

The system was shutdown on 3/23-3/24 for groundwater sampling.

The system was restarted.

Sight glasses on AWS tanks were cleaned.

The system operating parameters were recorded.

SVE wells that were closed: None SVE wells that were partially closed: None SVE wells that were opened: None

AS readings were taken on the other half of the Mercer street wells.

The system was operational upon departure.

Open Extraction Wells: M1, M4, M8, M9, M11, M12, M16, M17, M19

| | | | P-66 | | | 1/6/15 |
|-------------------------|--------|-------------|-------------|---------------|------|---------------------|
| 11 | | 023 | 0/ 1-21 | | | |
| CI | Temp | 95.7 | Shid 701 | 5 - | 0.17 | B-701 8111 |
| | Vel | 3660 | Sec. 1 | Vac VLS | 40 | B-801 8212 |
| CZ | Fanp | 94.0 | | Vac bour | 90 | C-2201 8247 |
| 1.0 | vel | 3870 | | temp Dochg | 108 | P-401 Z |
| <u>C</u> 3 | tang | 93.5 | | Press Dschy | 22 | P-501 69 |
| | vel | 4075 | 1-17-1-1-1 | HC blow out | 3.2 | 7-5501 97. |
| $\overline{\mathbf{C}}$ | | | | | | toplicer 7347 |
| Carbon 1 | 2.0 | | Shid 801 | mas" the | 0.2 | transpump 4.3 |
| Curlow 2 | | | | Vac ULS | 76 | |
| out | 0.4 | | | Vac blow | | * B-FOI was loto |
| | | | - | tamp dochy | 97 | upon around |
| Carbon 1 | | | | Prari decig | 22 | * But on 701 |
| Com 2 | 1.0 | 6 | | It's blovent | 0.6 | were replaced |
| out | 0.5 | | | | | * everything reitit |
| <u> </u> | | | AS Shul | tery with | 185 | , |
| Combon 1 | 1.6 | | | press in the | 14 | · I III |
| Carton | 2 0.8 | | | tenp of HX | 58 | - |
| out | 0.4 | | | pres out that | - | American de |
| - | × | | | mas +H20 | 6.0 | |
| 10 m a | PID ru | lys | · · · · · · | | & | |
| | Vac | | | | Vac | ppnu |
| Mb | 62 | Ppru 1.9 | | TSUE 3 | 58 | 1.9 |
| M7 | 60 | 1.0 | | TEFRIAN | 64 | 1.4 |
| Mg | 63 | 0.7 | | Trubs Bar | 57 | 1.9 |
| MB | 63 | 9.0 | | TSUEY | 54 | 0.3 |
| MI | 39 | 0.8 | | TSUE 11 | 52 | 1.0 |
| M3 | 42 | 0.7 | | T30C 10 | 49 | 0.5 |
| MY | 40 | 1.0 | | TSUE 2 | 48 | 0.0 |
| MIY | 44 | 11.0 | | TSUEL | 43 | 0.5 |
| MIJ | 46 | HO SOLA | | TSUE7 | 45 | 0.4 |
| MIS | 45 | 0.6 | | TSUE 12 | 44 |),4 |
| mu | 45 | 7.4 | | Vg | 35 | 6,2 |
| M16 | 5 | 4.6 | | VZ | 38 | 0.4 |
| MIZ | 47 | 9.6 | | VG | 39 | 0.2 |
| MIS | 57 | 4.5 | | VS. | 41 | 0.2 |
| | 1. 1.1 | | | V4 | 47 | 0.6 |
| | 6 L. | | | TSUES | 47 | 0.3 |
| | | | | 53066 | 51 | 0.4 |
| | | | | TSUE 8 | 56 | 01/ |
| | | | | TMW48Ar | 57 | 0.1 |

1/20/15 P-66 west/merc * System apration upon armer * met var - twich aporto ansile System Shit daw, & vac truth corrector to Fol main Shoul on M12 12ts the @ 905 mostly at 900 mound to MIS lots HEO for 3mm & 913 mostly and 907 shad MS mosty H20 for Imm @ 921 air 914 0525 M2 Hzo couldn't be pulled up M19 lots of HED For Zom (SAltz HED actor Clewde 936 mond to M8 notigo 945 M9 no hzo MIU no hzo mare N M7 I more lots of h2 o the are Mb I man lots of her the ave C MIG pulled up theo but still when remany MISMZ bubbly her ~ 5mm each byo stra the @ 1235 mould to trong/volleg mini 1043 TSUE 3, Stugar = 5 min lats has derie 1049 TETRI are lots has store - 6mon 10.55 The 65 mer lots have 2 10 mm still bubling the 1104 TSUE 4 Solid hoo for Imm, Some splowing the offer VI, 1sts Hzo Bar 2mm. Ut marsty dur 145 1122 V2, 10tr of 120 continuous hão Plous - could not clea - Hão Plum Mão well V4TSUE 12 Still some Hy U couldn't clar * Restrict System 1240 stude emptying Vac truck = 1400 gol remove * An simple college Shal Zof may "Hio CI temp D-701 89.4 8445 0.23 VU 3780 71 Var VIS 8546 15-801 CZ tup 88.9 Vcc blow 71 C-2201 8580 4620 vel 2 166 temp discl P-401 C3 tup 88.4 69 pril Isch 25 P-501 UN 4550 At blue out 5.6 102 P-5801 75698 orthe an 6.3 trus prof

Rite in the Rain.

P-66

1/20/15

| | | | 4-66 | | | 110115 |
|-----------|---------------------------------------|-------------|------------|-----------|---------|---|
| 0 | | | | | | |
| CI | 3.8 | Shal 801 | my the | 6.24 | AS Shul | Trupatto 175 |
| C2 | 0.7 | | Vac VIS | 70 | | Press in the 14 |
| ort | 0.4 | | VAC 6600 | 70 | | tup of the 55 |
| F | | | tap dsch | 94 | | prisont the 12.7 |
| CI | 2.6 | | press dich | 25 | | may" his 7.0 |
| 02 | 0.6 | | AC blow of | 1.2 | 1 | |
| 008 | 0.6 | | | | | |
| F | | | | | | |
| CI | 2.6 | | | | | |
| 50 02 | 0.6 | | | | | 4 · · · · · · · · · · · · · · · · · · · |
| our | 0.6 | | | | | |
| L | | | | | | A DECEMBER OF |
| m | 200 | 2 | \sim | | | |
| 1 | | | P-66 | wait /men | | 1/28/15 |
| * only pl | D rules | port L | rue truch | / | | |
| / 1. | Vac | PID | | | Vuc | PID |
| Mb | 46 | 2.9 | | tue3 | 63 | 1.0 |
| MZ | 48 | 11,4 | | TEPRIA | 58 | 0.9 |
| MID | 46 | -1,5 | | The bs | 55 | 1.9 closed |
| Mĝ | 62 | 2.5 | | TSUZ4 | 56 | 1.8 |
| MS | -51 | 8.9 | | TSUEll | 50 | D.6 Labre |
| MI | 42 | 2.5 | | TSUEIO | 55 | O. 6 "redent |
| MZ | 46 | O. I closed | | TSUEZ | 41 | 0.7 |
| M3 | 40 | 1.3 | | TSUE | 34 | 0.7 |
| M4 | . 33 | 0.2 "12 Jus | | TSUE7 | 38 | 0.7 |
| MS | 20 | 0.2 years | | TSUE 12 | 45 | 1,0 |
| M14 | 38 | 0.4 | | V9 | 20 | O.S Widney |
| MIS | 32 | 0.8 | | V7 | 15 | 0.6 |
| MIS | 36 | 0.2 | | VI | 29 | 1,0 |
| MIZ | 61 | 20.5 | | V6- | 25 | 0.2 |
| MH | 32 | 9.5 | | VZ | 15 | 0.6 |
| M16 | 35 | 2,6 | | V5 | 17 | 0.5 |
| MIZ | 80 | 12.0 | | V3 | 35 | 0,6 |
| M18 | 44 | 3.0 | | 14 | 48 | 0,6 |
| MIG | 42 | 0,8 | | BUES | 50 | 0,5 |
| /*/// | 1 | 0 | | TSUE6 | 55 | 0.8 |
| | | Λ | | TOFTR | 50 | 0.7 |
| | | 1. | | TSUBR | 419 | 0,7 |
| | · · · · · · · · · · · · · · · · · · · | | | THW48 | 54 | 0.3 Chur |

2/3-15 P-66 map/mere 87.0 Shad 701 mg, " Hzo CI tenp 0.22 B-701 8778 4010 vel VacULS 13-801 8879 76 C7 75 tomp 85.9 Unc blower C-2201 8914 3420 vel P-401 temp dschg 2 100 C3 69 85.6 Press dischig P- 501 treng 26 P-5501 104 vel 4080 1.7 HC blos at 75992 toblics Carbon 1 1.3 Shul 801 mg " H20 6.24 truns pup nn 1 Cuba 2 0.0 68 Vac ULS out 0.0 Ube blow 66 * Sys operation upon temp dechy 91 arround Cubul 1.1 24 press dody * no the for trans 2 Cutic 2 0.1 Itc blowou pump pairs randys 0.1 out 0.0 * rendry 1 taken befor AS Shid tempor Hx 180 wells closed Cuta 1 1.5 preis he HK 12 B-701 518 0,1 3 Com 2 tenpour HX 54 8-801 422 out O.D 11.5 Prea out HK * Alw ad, 8.5 mag "HEO B-70 1/5 89" B801 Uls 74" Vac PID Vac PID 2.5 "Edical 48 MG 60 Tefr 0.1 O.7 Will dosd 48 56 MZ TSUE4 0.2 O. 4 will dosed 46 MID 6.8 TSVELL 51 0.4 well 62 55 tsuelo Mg 2.1 9.5 52 43 TSUE Z ME 0.3 43 35 MI 2.3 TSVEL 0.5 O. 5 closed 38 M3 42 TSUET 0.3 6.3 Viderd 0.7 well M4 34 Vq 21 0.8 well closed MJ VZ 21 18 0.2 0.6 well MIY 38 30 VI 0.6 MIJ 32 VZ 1.2 16 0,1 1.0 closed MIS 37 15 17 0.2 O. I will 36 MIZ 61 14.9 V3 MI 34 V4 11.5 48 0.4 4.8 MIG 39 50 U.Z TSVES MIZ 51 TSUE 6 55 10.7 0.4 46 3.8 M18 TSUE 8 50 0.7

Rite in the Rain.

| | 1.000 | а — | | P-66 | | 2-0 | 6-15 |
|----------|-------|--------|----------|--------------|------|-------------|------------|
| <u> </u> | tenp | 92.3 | 51 1 701 | 74 | 03- | B-701 | 8854 |
| CI | | | Shul 701 | | 0.20 | | |
| 0.0 | vel | 3570 | | Vac ULS | 82 | B-801 | 8955 |
| C2 | temp | 92.0 | - | Vac blow | 8) | C-2201 | 89.89 |
| 10 | vel | 3880 | | trup dody | 105 | P-401 | 2 |
| C3 | tamp | 91.5 | | Prais diang | 22 | P-501 | 69 |
| | vel | 4120 | | HC blow out | 4.7 | P. 5501 | 106 |
| Г | | | | | | totalico | 76910 |
| Cubel | | | Shul 801 | | 0.22 | trans pup | 4.1 |
| Carlanz | | | - | Vac ULS | 73 | 1. D. I. | |
| 1 or | 1.2 | | _ | Vac blow | 72 | * Syst op | |
| - | | | _ | ting desily | 98 | · astruct | |
| Caronl | 1.6 | | - | press duchs | 22 | * 545 1800 | lys the |
| Curaz | | 1 | 1 | HC Nolow of | 6.Z | before we | lls shitda |
| ot | 1.5 | | | | | | |
| 4 | | | ASBLID | Tenpon HK | 190 | 8-701 @ | 55 |
| Content | 1.9 | | | presi on the | 12 | B-801@ | 13 |
| Cabuz | 1,4 | | | top of the | 60 | * 575 open | - 000- |
| out | | eftir. | | preci atthe | 11.7 | deput | |
| | | | | mys " 1+5 2 | 6.0 | | |
| | Vac | PID | | | vac | PID | |
| MG | 56 | 1.9 | | Tefr | 62 | 0.4 | |
| MID | 54 | 2.5 | | TSUE 4 | 60 | 0.3 | 778 |
| Mg | 62 | 2.7 | 34 | TSUE 2 | 45 | 0.Z | |
| MS | 60 | 4,8 | | TSUEI | 41 | 0.3 | |
| ML | 53 | 3.0 | 1 | TSUE7 | 45 | 0.4 | V |
| MIJ | 55 | 4.5 | | V9 | 15 | O. O closed | |
| MIZ | 62 | 19,3 | | V7 | 22 | 0.0 | |
| MI | 82 | 3,5 | 4 | VI | 36 | 0.4 | |
| MIG | 58 | 2.3 | | VZ | 21 | 0.0 | |
| MIT | 62 | 5.2 | | V5 | 27 | 0.2 | |
| MIS | 60 | 2.0 | | v4 | 35 | 0.1 | 19 X |
| 1 110 | 00 | -14 | | TSUL 5 | 56 | 0.0 | |
| | | | | TSUE 6 | 60 | 0.1 | |
| | | | | TSUE 8 | 61 | 0.1 | |
| | | | | 1200 0 | 61 | ··· / | |
| | | | | | | | |
| | | | | | | | |
| | | | | - | 4 | _ | |
| | | · 、 | | | - X- | | |

| | | - | P-6 | 6 | 2-1 | 0-15 | |
|---------|------|------------------------|---------------------------------------|---------------|------|------------------|-------|
| CI | temp | 99,1 | Shul 701 | Mas "Hao | 55.0 | B-701 | 8949 |
| | vel | 3740 | | Vac VLS | 84 | 13-801 | 9050 |
| CZ | temp | 98.D | | Vac How | 83 | C-2.201 | 9085 |
| | ver | 4000 | 5 403 2 6 - 3000 - 0 | tomp dochy | 111 | P-401 | 2 |
| C3 | temp | 97.4 | and wear | press docus | 23 | P- 501 | 69 |
| | UCY | 4150 | · · · · · · · · · · · · · · · · · · · | 4C blow out | | P-5501 | 108 |
| \sim | | | | | v. (| total | 77556 |
| Carb 1 | 0.4 | | Shul 801 | mag" Heb | 0.22 | true pup | 4.2 |
| 1 Cub Z | 0.0 | 1 | and an and | Vac ULS | 74 | * Sys ape | |
| or | 0.0 | 8 24 | | Vacblow | 73 | arrowil | |
| - | | | | temp dschy | 102 | * Sys read | |
| Culb | 0.5 | | A | press dechy | 23 | before u | |
| 2 Cubz | 0.1 | 9 | 6 | HC blow out | 0.1 | apen | |
| out | 0,0 | | | | | D-7016 | |
| - | | | AS Shul | temp in Hx | 197 | 13-801 C | |
| Curbi | 0.4 | 55 - 130- | kin. | press in HX | 15 | | |
| 3 Curbz | 0.1 | N . N | Set in a | temp out HX | 62 | AFL 201 B-701 | |
| out | 0.0 | 1 | | press out the | 14,2 | 13801 VI | - |
| L | | · ~ . | | mas "Hed | 6.0 | 13 801 01 | |
| | vac | PID | | intras Files | | | |
| WBI | 18 | 0,0 | - | | Vac | PID | i. |
| WAJ | 25 | 4.0 | 20 | TEFPI | | 0.0 chre | 1 |
| WAZ | 62 | 0.3 | -3 × | TSUE4 | 62 | 6.1 will | |
| WRI | 41 | 0,1 | | TSUEZ | 47 | 0.1 | |
| MG | 28 | 2.0 | 14. | TSUEL | 44 | O. O Vadrid | |
| MIO | 28 | 0.1 | 3.16 | TSUE7 | 46 | 0.1 | |
| Mg | 51 | 0.1 | P. | V7 | 23 | 0.1 | |
| MB | 39 | 2.1 | | VI | 38 | 0.0 well | |
| MI | | 0.0 bell 0.0 choice | | VZ | 23 | O. | 2 |
| MIJ | 46 | 0.1 | | VS- | 28 | 0.0 | |
| MIZ | 62 | 1).(| | V4 | 37 | 0.0 | s. |
| MI | 42 | 4.6 | , | TSUES | 58 | 0,1 | |
| MIG | 47 | 0.1 | | TSUE6 | 62 | 0.1 | |
| MIZ | 53 | 6.8 | | TSUE 8 | 61 | 0,(| |
| MIS | 46 | 0,1 | | | w | ·'l | |
| | | | | | | | |
| | | - | | | | | 3 |

Rite in the Rain.

| | | | R-61 | 0 4 | -13-1 | | |
|----------|--------------|------------|-----------|--------------|----------|-------------------|---|
| CI | temp | 95.3 | Short 701 | mm + HDD | 0.24 | B-701 | 9017 |
| | vel | 3950 | | Vac ULS | 75 | B-801 | 9118 |
| CZ | timp | 95.2 | | vac blow | 73 | C-2201 | 9183 |
| 66 | vel | 4060 | | tenp dischy | 105 | P-401 | Z |
| C3 | the | 94.4 | | per ilsung | 24 | P-501 | 69 |
| 0 | vel | 4200 | | HC blow out | 0,2 | P-5501 | 108 |
| | UA | 1200 | | AL DLOD VA | | totalizers | 7-7556 |
| [Carbon] | 0.2 | | Shal SU | muy "Heo | 0.23 | trus pup | n |
| C2 | 0.0 | | 070000000 | Values | 78 | | |
| | 0.0 | | | Vac blow | | * Sys operat | w upan |
| Lout | 0.0 | | | temp dichy | 102 | arried | |
| CI | OrZ | | | presi dechy | | 1000 | |
| | 010 | 1 | | He blow out | 0.1 | * sys rendy | shint/open |
| - CZ | | • | | MC OUS OF | Q+1 | | |
| Love | 0.0 | | AS Shid | + 1 + +++ | 185 | Closed : WI WA | 1, 0043,004 |
| CI | \bigcirc 1 | • | NO ON W | tenp m Hk | 12.5 | | |
| 4 | 0,1 | | | pres in the | | open ! We | |
| 1 CZ | 0,1 | i. | | Tup out the | 58 | wes, we | s, we c |
| 1 UUA | 0,0 | | | pres out the | 11.9 | B-701@ 5 | <u>97.</u> |
| 1 1 12 | | | | may " had | 6.5 | B-801 e 4 | A MARK AND A |
| | Vec | PID | 1 + 2 - 1 | Vac | PID | After adj | |
| WCI | 23 | 0.0 | TSUE4 | | 0.0 well | B-701 VLS | e 88" |
| WCZ | 27 | 0.1 | TSUEZ | 51 | 0.0 men | B-801015 | e 84" |
| WC3 | 45 | 6.2 | tsue! | 40 | Ve Clot | a | Press Q |
| WB3 | 28 | 0.0 | TSVE7 | 50 | 0.1 | V-3 V-13 | 9 7 |
| WBZ | 38 | 4.0 | V7 | 28 | 0.1 | V-2 | 8/4 |
| WBI | | 0.0 well | | 28 | 0.0 | V-14 V-1 | 8 5 |
| WA3 | | 0.0 dusid | | 31 | 010 | M-8 | 1 11 |
| WAZ | | 0.0 with | | 40 | 0.1 | M-20 M-26 | 5 20 |
| WAI | 2 | 0.0 well | TSUES | 61 | 0.0 | M-2 | 5 10 |
| MG | | Oil closed | tsue 6 | 62 | 0,1 | M-27 M-16 | 5 0 |
| MIO | 32 | 0.1 | TSUE 8 | 62 | 0.0 | 1 M-3 | 3 9 |
| Mg | 55 | 0.1 | 1 | AS | | M-9 M-17 | |
| M8 | 46 | 1.0 | | Press | Q | M-5 | 3 3 |
| MIS | | 0.0 child | V-1 | 67 | 3 | M-19 M-15 | 56 |
| MIZ | 70 | 10,6 | 1 V- | | 7 | M - 7 | 5 7 |
| MI | 50 | 3.8 | V | | 5 | M-10 | 208 |
| MIZ | 62 | 4.0 | V- | | 0 | m-14 m-18 | |
| M18 | 55 | O. O Kohu | V- V- | | | M-6 | 10 14 |
| 1 110 | | - IV ICOHL | | -11 3 | 0 | M-13 M-4 | 5 6 |

P-66 0 2-13-15 PC P M-22 5 M-11 6 25 M-12 6 Z 5 M-25 3 7 M-1 4 5 M-24 0 M-23 10 \bigcirc 10 M-21 11 P-66 2-16-15 * System down upon any Alarmy & VFDA - 8201 PNL, VFDA-8202 PNL, PWRA-8201 PNL @ 06:13 2/14/15 and FSPF ALM @ 2017 2/14/15 Bys went down 2/14/15 Syden was restator * * PID rendys of apr wells were taken + Sys range the better wells were apaul or shot CI Shid 701 mi, "Hio 102.1. tup 6.24 B-701 9037 vel 84 3900 9138 Unclus B-801 C2 83 timp 102.2 C-2201 9173 Vac blow 3800 511 P-401 VU 2 temp dschy (3 101.7 23 69 temp P-501 Press Suchy 108 vel 4120 0. HC 660 out P-5501 totalizer 77556 Shul 801 Carm 1 0.2 0.24 may"Hid trans purp 2 Camil O.V 87 Ungells * Not employed who aut 87 0.0 Une blow temp dolly 110 to marken preserve Calal 0.1 22.5 Pres decey Come 0.0 B-701 @ 57% He blou out 0.1 - OUY 0.0B-801 @ 441. Culan 1 6.1 ASSLA 185 tup mitto 3/ CuronZ 0.0 B-701 unclus 88" press in HK 13 DUY 0.0 66 B-801 vac VLS 82" terp of HK Prell out AND (2.) 7.0 my the

Rite in the Rain.

| | | | | P=66 | | 2/16/15 |
|--------|-----|-------------|-------------|----------|-----|----------------|
| wer | Vac | PID | | | PID | |
| Wei | 23 | 0.0 | 7 | MI | 0,0 | |
| UCZ | 27 | 0.0 | | MZ | 0.0 | |
| WC3 | 45 | 0.0 | - closed | M3 | 0.0 | |
| WB3 | 28 | 0.0 | after fully | MS | 0.0 | |
| WBZ | 38 | 0.0 | | M14 | 0.0 | and the second |
| MID | 57 | 0.1 | | MIZ | 0.0 | |
| M9 | 70 | 0.0 | | MIS | 0.0 | pall wells |
| Mg | 62 | 0.1 | | M16 | 0.0 | ArthClosed |
| M4 | 62 | 1.0 | | M18 | 0.0 | 1000 |
| MIZ | 70 | 7.5 | | TSUE 3 | 0.0 | |
| MI | 56 | 6.1 | | TMUK5 | 0.0 | |
| MIT | 70 | 0.1 | | TEFRI | 0.0 | |
| M19 | 70 | 13.2 | | TSUE 4 | 0.0 | |
| TSUEZ | 55 | 0.0 | postroly | TSUE 11 | 0.0 | |
| TSUEI | 25 | 0.6 | losel | TSUE 10 | 0.0 | |
| TSUE7 | 53 | 0.1 | | V6 | 0.0 | |
| U7 | 22 | 0.0 | | V3 | 0.0 | |
| UI | 35 | 0.2 | | TEFR2 | 0.0 | |
| V2 | 23 | 0.1 | 2 O | TMW48 | 0.0 | |
| V5 | 28 | 0.0 | | 17 10 10 | - | - |
| V4 | 39 | 0.0 | 7 | 20 | | |
| TSUES | 60 | 0.1 | | | | |
| | 62 | 0.0 | 24 | | | |
| TSUE 6 | 62 | 0.0 | | | | 56-0 |
| 100.03 | * • | | | | | |
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| * 575 | opum | | wingel | 6 west | 7 | | 4-15 |
|-------|-------|---------------------------------------|---|--------------|-------|----------|------------|
| ~ 373 | Grand | John | annta | | | | |
| CL | tere | 94.7 | Shud 701 | may"/20 | 0.24 | 8-701 | 9420 |
| | vil | 1600 | | Vac VLS | 83 | B-801 | 9353 |
| C2 | ting | 947 | | Vac blow | 82 | C-2201 | 9556 |
| | vei | 1870 | | tong dich | 104 | P-401 | Z |
| C3 | temp | 94,1 | | bloodsun | 15 | P-501 | 69 |
| | uci | 1980 | | He blue our | 1,4 | P-5501 | 108 |
| ~ | | | | | | total | 7792 |
| Curbl | 1.2 | | AS Shal | tenp m Hk | 165 | ton pup | $\sim\sim$ |
| Carb2 | 0.1 | | 12124 I I I I I I I I I I I I I I I I I I I | Press mttx | 10 | * not c | NUL |
| L OUT | 0.0 | | | temp out the | 58 | autor to | man |
| Carbl | 1.1 | | | Pers of HX | 10 | press | |
| Curst | 0.0 | / | | mag " (ted | 3.0 | | |
| OUT | 0.0 | | X | | | 4 | |
| Curbl | 1.5 | | | | | | |
| Curbz | 0.1 | | | | | | |
| Lout | 0.1 | P | | | 2 m | | |
| well | Val | 13.0 | | with | Press | Q | |
| MO | 54 | 0.3 | | M-2 | 5 | 10 | |
| Mag | 70 | 0.2 | | M-16 | 5 | 0 | |
| M8 | 58 | 1.8 | | m-9 | 25 A. | 10 | |
| MY | 50 | 0.0 | | M-17 | 7 | 18 | |
| MIZ | 70. | 8.4 | | M-5 | 3 | 3. | |
| MIL | 47 | 3.3 | | M-10 | 2 | 1 | |
| ACTO | 4 | Marie | | M-14 | 1 | 9 | |
| MIT | 60 | 21 | | M-22 | 6 | 0 | |
| MIG | 70 | 3.7 | | M-1 | 3 | 12 | |
| | | | | M-11 | 3 | D | |
| | | | | | | | |
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| 2.72 | | | | | | | |

Rite in the Rain.

| | | | P-66 | P | | 3.12 | 2.15 | • |
|-----------|------|-------|---------|--------------|-----------------|------------|--|-----|
| | | | | | | | | C |
| <u>C1</u> | temp | 102.4 | Shel 70 | mag "ko | 0.25 | B-701 | 9616 | C |
| | vel | 1725 | | Var VLS | 85 | B-801 | 9353 | C |
| CZ | temp | 102.0 | | Vac bho | 80 | C-2201 | 9752 | - |
| | UC | 1940 | | temp decky | 111 | P-401 | 2 | C |
| C3 | tomp | 101.3 | | pris daus | | P- 501 | 69 | C |
| | vel | 1965 | | He blow at | 1 2 | 7-5501 | 108 | C |
| | | | | | | total | 77927 | - |
| Curbi | 1.4 | | AS Shel | temp on the | 180 | trus presp | .~~~ | C |
| CNDZ | 0.0 | | | press m HK | | * not en | | G |
| out | 0.0 | | | temp out the | 71 | toreal | | 6 |
| Carp | 1.5 | | | press out HX | | | | _ |
| Curbz | 6,0 | | | may "40 | | | | G |
| OUT | 0.1 | 1 | | | , | | | 6 |
| Carb 1 | 1.3 | ary | Vice | 717 | w e 11 | - | | |
| Carb2 | 0.0 | M6 | | 6.0 | | | | (|
| | | 10917 | | 0.3 | | | | . (|
| out | 6.0 | MIO | | 0.0 | Perturis closed | ł | | |
| | | | 70 | 0.1 | elon. | | | |
| | | 19 | 70 | 1.6 | | | | • |
| | | M8- | 56 | 10.1 | opened | | | C |
| | | AN 7 | - | 0.0 | | | | |
| | | M2 | | | | | | |
| | | M3 | 38 | 0.0 | Pertury | | | • |
| | | MY | 06 | | closen | | | |
| | | | | 0.0 | | | | |
| | | M14 | | | | | | |
| | | M13 | | 0.0 | | | | |
| | 1 | MIS | | 0.1 | | | | - |
| | | MIZ | 70 | 8.2 | | | | |
| | | MM | 52 | 1.8 | | | | _ |
| | | MIL | 58 | 1.2 | Openal | | | - (|
| | | MIZ | 64 | 1.\ | | | | - |
| | | M18 | | 1.0 | | | and the second s | |
| | | M19 | 70 | 2.4 | | | | |
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P-66 3-18-12 CI 109.0 Shod 701 teme ma, "120 0.22 B-701 9756 ver 1640 9353 Van ULS B-801 100 CZ tenp 109.0 Val blow 99 9891 C-2201 2040 P-401 117 Z vel temp dschi 03 1083 69 13 P-501 press duchy temp ver 2060 1.2 P-5501 112 HC blow out 79648 totaleur Curol 0.6 AS Shoul trans pup 4.1 temp m 4K Zoo Carb 2 6.0 17 Press m HD * monthy samply N 0.0 58 temp nut the Carp 1 1.2 16.6 un collected PLAS OUT HIS 0.0 Carb 2 2.5 mag Heo * STS openhal upon 008 0.0 armel Catol 1.0 * B-701 VFD mul Curb2 6.0 to 57% out 0,0 PID Welli ULC PID Wills VLL 6.0 70 49 M9 70 M12 0.3 70 0.9 M8 57 MI 59 0.1 MI 64 M16 0,1 40 MY 0.5 70 0.0 M17 MIG 70 0.8 P-66 CI temp 100.2 3-24-15 vel nus "Huo 780 Shal Fol 0.20 CZ 99.8 99 9872 B-70) timp Vac ULS 1850 98 VCC blow 9353 vel 3-801 C3 temp 98.5 C-220) 115 temp dochy 10008 1900 P-401 13 vel 2 press duchy 69 P-50) He bliw out 0.) Carbl 0.1 P-5501 511 CW62 ASShul 6.0 165 79912 temp in HX totalizer out 0.0 8.7 9 trans punp Press MHX Carb O.I temp out HK 60 * Sys shot down Carb7 8.5 0.0 3/23-3/24 Gor GWS priss at the as 0.0 3.5 mug" HO * sys durin upon armin Cub 1 OIL * Sight change chernel Carb2 0.0 * AS Rubys 0.0 OUT

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917 1st Avenue North, Suite 3 Billings, Montana 59101 Telephone: 406-259-1033 Fax: 406-259-1099

Appendix A Laboratory Data



Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

February 02, 2015

Kyle Sattler Cardno ATC 7070 SW Fir Loop Suite 100 Portland, OR 97223

RE: Project: AOC 1396-P66 Westlake/Mercer Pace Project No.: 10294735

Dear Kyle Sattler:

Enclosed are the analytical results for sample(s) received by the laboratory on January 22, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

ENNI GROSS

Jennifer Gross jennifer.gross@pacelabs.com Project Manager

Enclosures

cc: Keith Fox, Cardno ATC





Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

CERTIFICATIONS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926.01 Alaska Certification #: UST-078 Alaska Certification #MN00064 Alabama Certification #40770 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #:14-008r Georgia Certification #: 959 Georgia EPD #: Pace Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137 Mississippi Certification #: Pace Montana Certification #: MT0092 Nevada Certification #: MN_00064 Nebraska Certification #: Pace New Jersey Certification #: MN-002 New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 West Virginia Certification #: 382 West Virginia DHHR #:9952C Wisconsin Certification #: 999407970



SAMPLE SUMMARY

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|-------------|-----------|--------|----------------|----------------|
| 10294735001 | V-DSCHG-1 | Air | 01/20/15 14:45 | 01/22/15 09:35 |
| 10294735002 | V-DSCHG-2 | Air | 01/20/15 14:50 | 01/22/15 09:35 |
| 10294735003 | V-DSCHG-3 | Air | 01/20/15 14:55 | 01/22/15 09:35 |
| 10294735004 | V-INT-1 | Air | 01/20/15 15:10 | 01/22/15 09:35 |
| 10294735005 | V-INT-2 | Air | 01/20/15 15:05 | 01/22/15 09:35 |
| 10294735006 | V-INT-3 | Air | 01/20/15 15:00 | 01/22/15 09:35 |
| 10294735007 | V-INF-1 | Air | 01/20/15 15:15 | 01/22/15 09:35 |
| 10294735008 | V-INF-2 | Air | 01/20/15 15:20 | 01/22/15 09:35 |
| 10294735009 | V-INF-3 | Air | 01/20/15 15:25 | 01/22/15 09:35 |



SAMPLE ANALYTE COUNT

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10294735

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|--------|----------|----------------------|------------|
| 10294735001 | V-DSCHG-1 | TO-15 | DR1 | 6 | PASI-M |
| 10294735002 | V-DSCHG-2 | TO-15 | DR1 | 6 | PASI-M |
| 10294735003 | V-DSCHG-3 | TO-15 | DR1 | 6 | PASI-M |
| 10294735004 | V-INT-1 | TO-15 | DR1 | 6 | PASI-M |
| 10294735005 | V-INT-2 | TO-15 | MJL | 6 | PASI-M |
| 10294735006 | V-INT-3 | TO-15 | DL1 | 6 | PASI-M |
| 10294735007 | V-INF-1 | TO-15 | DL1 | 6 | PASI-M |
| 10294735008 | V-INF-2 | TO-15 | DL1 | 6 | PASI-M |
| 10294735009 | V-INF-3 | TO-15 | DL1 | 6 | PASI-M |



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

| Sample: V-DSCHG-1 | Lab ID: 10 | 294735001 | Collected: 01/20/ | 15 14:45 | Received: 0 | 01/22/15 09:35 N | latrix: Air | |
|--|---------------|----------------|---------------------|----------------------|-------------|--|-------------|-----|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| TO15 MSV AIR | Analytical Me | thod: TO-15 | | | | | | |
| Benzene | ND u | ıg/m3 | 12.6 | 38.9 | | 01/30/15 20:19 | 71-43-2 | A4 |
| Ethylbenzene | ND u | ig/m3 | 34.2 | 38.9 | | 01/30/15 20:19 | 100-41-4 | |
| THC as Gas | 2660 ເ | ig/m3 | 2370 | 38.9 | | 01/30/15 20:19 | | |
| Toluene | ND u | ig/m3 | 149 | 38.9 | | 01/30/15 20:19 | 108-88-3 | |
| n&p-Xylene | ND u | ig/m3 | 68.5 | 38.9 | | 01/30/15 20:19 | 179601-23-1 | |
| o-Xylene | ND u | ıg/m3 | 34.2 | 38.9 | | 01/30/15 20:19 | 95-47-6 | |
| Sample: V-DSCHG-2 | Lab ID: 10 | 294735002 | Collected: 01/20/2 | 15 14:50 | Received: 0 |)1/22/15 09:35 N | fatrix: Air | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| O15 MSV AIR | Analytical Me | thod: TO-15 | | | | | | |
| Benzene | ND u | ıg/m3 | 12.2 | 37.4 | | 01/30/15 20:42 | 71-43-2 | A4 |
| Ethylbenzene | ND u | 0 | 32.9 | 37.4 | | 01/30/15 20:42 | | |
| THC as Gas | 2360 U | | 2270 | 37.4 | | 01/30/15 20:42 | | |
| Foluene | ND u | - | 143 | 37.4 | | 01/30/15 20:42 | 108-88-3 | |
| n&p-Xylene | ND u | - | 65.8 | 37.4 | | 01/30/15 20:42 | 179601-23-1 | |
| p-Xylene | ND u | 0 | 32.9 | 37.4 | | 01/30/15 20:42 | 95-47-6 | |
| | | 5 | | - | | | | |
| Sample: V-DSCHG-3 | Lab ID: 10 | 294735003 | Collected: 01/20/* | 15 14:55 | Received: 0 | 01/22/15 09:35 N | latrix: Air | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| O15 MSV AIR | Analytical Me | thod: TO-15 | | | | | | |
| Benzene | ND u | ıg/m3 | 13.6 | 42 | | 01/30/15 21:28 | 71-43-2 | A4 |
| Ethylbenzene | ND u | • | 37.0 | 42 | | 01/30/15 21:28 | 100-41-4 | |
| THC as Gas | ND u | - | 2550 | 42 | | 01/30/15 21:28 | | |
| Toluene | ND u | - | 161 | 42 | | 01/30/15 21:28 | 108-88-3 | |
| n&p-Xylene | ND u | - | 73.9 | 42 | | 01/30/15 21:28 | 179601-23-1 | |
| p-Xylene | ND u | - | 37.0 | 42 | | 01/30/15 21:28 | 95-47-6 | |
| Sample: V-INT-1 | Lab ID: 10 | 294735004 | Collected: 01/20/* | 15 15:10 | Received: 0 |)1/22/15 09:35 N | fatrix: Air | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| O15 MSV AIR | Analytical Me | thod: TO-15 | | | | | | |
| _ | ND u | ıg/m3 | 10.9 | 33.6 | | 01/30/15 21:05 | 71-43-2 | A4 |
| Benzene | | 0 | 29.6 | 33.6 | | 01/30/15 21:05 | | |
| | ND L | ND ug/m3 | | | | | | |
| Ethylbenzene | | - | 2040 | 33.6 | | 01/30/15 21:05 | | |
| Ethylbenzene THC as Gas | 2100 ເ | ig/m3 | 2040 129 | 33.6 33.6 | | 01/30/15 21:05 | 108-88-3 | |
| Benzene Ethylbenzene THC as Gas Toluene m&p-Xylene | | ig/m3 ig/m3 | 2040 129 59.1 | 33.6 33.6 33.6 | | 01/30/15 21:05 01/30/15 21:05 01/30/15 21:05 | | |

REPORT OF LABORATORY ANALYSIS



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

| Sample: V-INT-2 | Lab ID: 10 | 0294735005 | Collected: 01/20/ | 15 15:05 | Received: | 01/22/15 09:35 | Matrix: Air | |
|-----------------|--------------|--------------|-------------------|----------|-----------|------------------|-------------|-----|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| TO15 MSV AIR | Analytical M | ethod: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 9.4 | 28.95 | | 01/28/15 12:26 | 71-43-2 | A4 |
| Ethylbenzene | ND | ug/m3 | 63.9 | 28.95 | | 01/28/15 12:26 | 100-41-4 | |
| THC as Gas | ND | ug/m3 | 1760 | 28.95 | | 01/28/15 12:26 | ; | |
| Toluene | 37.4 | ug/m3 | 22.3 | 28.95 | | 01/28/15 12:26 | 108-88-3 | |
| m&p-Xylene | ND | ug/m3 | 51.0 | 28.95 | | 01/28/15 12:26 | 179601-23-1 | |
| o-Xylene | ND | ug/m3 | 25.5 | 28.95 | | 01/28/15 12:26 | 95-47-6 | |
| Sample: V-INT-3 | Lab ID: 10 | 0294735006 | Collected: 01/20/ | 15 15:00 | Received: | 01/22/15 09:35 | Matrix: Air | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| TO15 MSV AIR | Analytical M | ethod: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 12.2 | 37.4 | | 01/27/15 00:46 | 71-43-2 | A4 |
| Ethylbenzene | | ug/m3 | 32.9 | 37.4 | | 01/27/15 00:46 | 100-41-4 | |
| THC as Gas | | ug/m3 | 2270 | 37.4 | | 01/27/15 00:46 | i | |
| Foluene | | ug/m3 | 28.8 | 37.4 | | 01/27/15 00:46 | 108-88-3 | |
| n&p-Xylene | | ug/m3 | 65.8 | 37.4 | | 01/27/15 00:46 | 179601-23-1 | |
| p-Xylene | ND | ug/m3 | 32.9 | 37.4 | | 01/27/15 00:46 | 95-47-6 | |
| Sample: V-INF-1 | Lab ID: 10 | 0294735007 | Collected: 01/20/ | 15 15:15 | Received: | 01/22/15 09:35 | Matrix: Air | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| TO15 MSV AIR | Analytical M | ethod: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 11.3 | 34.8 | | 01/27/15 01:08 | 71-43-2 | A4 |
| Ethylbenzene | | ug/m3 | 30.6 | 34.8 | | 01/27/15 01:08 | 100-41-4 | |
| THC as Gas | | ug/m3 | 2120 | 34.8 | | 01/27/15 01:08 | 1 | |
| Foluene | | ug/m3 | 26.8 | 34.8 | | 01/27/15 01:08 | 108-88-3 | |
| n&p-Xylene | | ug/m3 | 61.2 | 34.8 | | 01/27/15 01:08 | 179601-23-1 | |
| p-Xylene | | ug/m3 | 30.6 | 34.8 | | 01/27/15 01:08 | 95-47-6 | |
| Sample: V-INF-2 | Lab ID: 10 | 0294735008 | Collected: 01/20/ | 15 15:20 | Received: | 01/22/15 09:35 N | Matrix: Air | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| FO15 MSV AIR | Analytical M | ethod: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 11.7 | 36 | | 01/27/15 01:30 | 71-43-2 | A4 |
| Ethylbenzene | | ug/m3 | 31.7 | 36 | | 01/27/15 01:30 | | |
| THC as Gas | | ug/m3 | 2190 | 36 | | 01/27/15 01:30 | | |
| Toluene | | ug/m3 | 27.7 | 36 | | 01/27/15 01:30 | | |
| | | | | | | | | |
| m&p-Xylene | ND | ug/m3 | 63.4 | 36 | | 01/27/15 01:30 | 179601-23-1 | |

REPORT OF LABORATORY ANALYSIS



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

| Sample: V-INF-3 | Lab ID: 102947350 | 09 Collected: 01/20/1 | 15 15:25 | Received: 01 | 1/22/15 09:35 N | latrix: Air | |
|-----------------|-----------------------|-----------------------|----------|--------------|-----------------|-------------|------|
| Parameters | Results Un | its Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| TO15 MSV AIR | Analytical Method: TC | 0-15 | | | | | |
| Benzene | ND ug/m3 | 11.7 | 36 | | 01/27/15 00:24 | 71-43-2 | A4 |
| Ethylbenzene | ND ug/m3 | 31.7 | 36 | | 01/27/15 00:24 | 100-41-4 | |
| THC as Gas | 12100 ug/m3 | 2190 | 36 | | 01/27/15 00:24 | | |
| Toluene | ND ug/m3 | 27.7 | 36 | | 01/27/15 00:24 | 108-88-3 | |
| m&p-Xylene | ND ug/m3 | 63.4 | 36 | | 01/27/15 00:24 | 179601-23-1 | |
| o-Xylene | ND ug/m3 | 31.7 | 36 | | 01/27/15 00:24 | 95-47-6 | |



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

METHOD BLANK: 1888553

QC Batch: AIR/22358

Analysis Method:

QC Batch Method: TO-15 Associated Lab Samples: 10294735

5 Analysis Description: 10294735006, 10294735007, 10294735008, 10294735009

TO-15

TO15 MSV AIR Low Level

Matrix: Air

| Associated Lab Samples: | 10294735006, | 1020/735007 | 1020/735008 | 1020/735000 |
|-------------------------|--------------|--------------|--------------|-------------|
| Associated Lab Samples. | 10294735006, | 10294735007, | 10294735008, | 10294735009 |

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|--------------|-------|-----------------|--------------------|----------------|------------|
| Benzene | ug/m3 | ND | 0.32 | 01/27/15 00:02 | |
| Ethylbenzene | ug/m3 | ND | 0.88 | 01/27/15 00:02 | |
| m&p-Xylene | ug/m3 | ND | 1.8 | 01/27/15 00:02 | |
| o-Xylene | ug/m3 | ND | 0.88 | 01/27/15 00:02 | |
| THC as Gas | ug/m3 | ND | 60.8 | 01/27/15 00:02 | |
| Toluene | ug/m3 | ND | 0.77 | 01/27/15 00:02 | |

LABORATORY CONTROL SAMPLE: 1888554

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------|-------|----------------|---------------|--------------|-----------------|------------|
| Benzene | ug/m3 | 32.5 | 33.2 | 102 | 64-139 | |
| Ethylbenzene | ug/m3 | 44.2 | 45.0 | 102 | 71-136 | |
| m&p-Xylene | ug/m3 | 88.3 | 91.9 | 104 | 71-134 | |
| o-Xylene | ug/m3 | 44.2 | 45.6 | 103 | 75-134 | |
| THC as Gas | ug/m3 | 3520 | 3580 | 102 | 66-135 | |
| Toluene | ug/m3 | 38.3 | 44.8 | 117 | 70-129 | |

SAMPLE DUPLICATE: 1888944

| | | 10294733003 | Dup | | Max | |
|--------------|-------|-------------|--------|-----|-----|------------|
| Parameter | Units | Result | Result | RPD | RPD | Qualifiers |
| Benzene | ug/m3 | 2420 | 2260 | 7 | 25 | |
| Ethylbenzene | ug/m3 | ND | ND | | 25 | |
| m&p-Xylene | ug/m3 | ND | ND | | 25 | |
| o-Xylene | ug/m3 | ND | 296J | | 25 | |
| THC as Gas | ug/m3 | 914000 | 841000 | 8 | 25 | |
| Toluene | ug/m3 | 706 | 657 | 7 | 25 | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

Associated Lab Samples:

QC Batch:

AIR/22391 QC Batch Method: TO-15

Analysis Description: 10294735001, 10294735002, 10294735003, 10294735004

TO-15

TO15 MSV AIR Low Level

METHOD BLANK: 1891699

| Matrix: | Air | |
|---------|-----|--|
| | | |

Analysis Method:

| Associated Lab Samples: | 10294735001, 10294735002, 10294735003, 10294 | 735004 |
|-------------------------|--|--------|
| | Diani, D. | |

| المائدة | | | | |
|---------|----------------------------------|--|--|---|
| Units | Result | Limit | Analyzed | Qualifiers |
| ug/m3 | ND | 0.32 | 01/30/15 12:35 | |
| ug/m3 | ND | 0.88 | 01/30/15 12:35 | |
| ug/m3 | ND | 1.8 | 01/30/15 12:35 | |
| ug/m3 | ND | 0.88 | 01/30/15 12:35 | |
| ug/m3 | ND | 60.8 | 01/30/15 12:35 | |
| ug/m3 | ND | 3.8 | 01/30/15 12:35 | |
| | ug/m3 ug/m3 ug/m3 ug/m3 | ug/m3 ND ug/m3 ND ug/m3 ND ug/m3 ND | ug/m3 ND 0.88 ug/m3 ND 1.8 ug/m3 ND 0.88 ug/m3 ND 0.88 ug/m3 ND 60.8 | ug/m3ND0.8801/30/1512:35ug/m3ND1.801/30/1512:35ug/m3ND0.8801/30/1512:35ug/m3ND60.801/30/1512:35 |

LABORATORY CONTROL SAMPLE: 1891700

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------|-------|----------------|---------------|--------------|-----------------|------------|
| Benzene | ug/m3 | 32.5 | 27.7 | 85 | 64-139 | |
| Ethylbenzene | ug/m3 | 44.2 | 48.6 | 110 | 71-136 | |
| m&p-Xylene | ug/m3 | 88.3 | 95.6 | 108 | 71-134 | |
| o-Xylene | ug/m3 | 44.2 | 48.3 | 109 | 75-134 | |
| THC as Gas | ug/m3 | 3520 | 2830 | 81 | 66-135 | |
| Toluene | ug/m3 | 38.3 | 29.7 | 78 | 70-129 | |

SAMPLE DUPLICATE: 1892169

| | | 10295195005 | Dup | | Max | |
|--------------|-------|-------------|--------|-----|-----|------------|
| Parameter | Units | Result | Result | RPD | RPD | Qualifiers |
| Benzene | ug/m3 | 0.85 | 0.84 | 1 | 25 | |
| Ethylbenzene | ug/m3 | ND | ND | | 25 | |
| m&p-Xylene | ug/m3 | ND | 1.1J | | 25 | |
| o-Xylene | ug/m3 | ND | ND | | 25 | |
| THC as Gas | ug/m3 | 245 | 244 | 1 | 25 | |
| Toluene | ug/m3 | ND | .63J | | 25 | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

| ace Flujeci NU | 10294755 | |
|----------------|----------|--|
| | | |

| QC Batch: | AIR/22399 | | Analysis Meth | hod: T(| D-15 | |
|--------------------|--------------------|-------|---------------|--------------|-------------------|------------|
| QC Batch Method: | TO-15 | | Analysis Des | cription: TO | D15 MSV AIR Low I | _evel |
| Associated Lab Sar | mples: 10294735005 | | | | | |
| METHOD BLANK: | 1892232 | | Matrix: | Air | | |
| Associated Lab Sar | nples: 10294735005 | | | | | |
| | | | Blank | Reporting | | |
| Parar | neter | Units | Result | Limit | Analyzed | Qualifiers |
| Benzene | ua/ | m3 | | 0.32 | 01/27/15 20:09 | |

| Falameter | Units | Result | LIIIII | Analyzeu | Quaimers |
|--------------|-------|--------|--------|----------------|----------|
| Benzene | ug/m3 | ND | 0.32 | 01/27/15 20:09 | |
| Ethylbenzene | ug/m3 | ND | 2.2 | 01/27/15 20:09 | |
| m&p-Xylene | ug/m3 | ND | 1.8 | 01/27/15 20:09 | |
| o-Xylene | ug/m3 | ND | 0.88 | 01/27/15 20:09 | |
| THC as Gas | ug/m3 | ND | 60.8 | 01/27/15 20:09 | |
| Toluene | ug/m3 | ND | 0.77 | 01/27/15 20:09 | |
| | | | | | |

LABORATORY CONTROL SAMPLE: 1892233

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------|-------|----------------|---------------|--------------|-----------------|------------|
| Benzene | ug/m3 | 32.5 | 34.6 | 106 | 64-139 | |
| Ethylbenzene | ug/m3 | 44.2 | 45.7 | 103 | 71-136 | |
| m&p-Xylene | ug/m3 | 88.3 | 91.0 | 103 | 71-134 | |
| o-Xylene | ug/m3 | 44.2 | 45.7 | 104 | 75-134 | |
| THC as Gas | ug/m3 | 3520 | 3780 | 107 | 66-135 | |
| Toluene | ug/m3 | 38.3 | 41.5 | 108 | 70-129 | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

A4 Sample was transferred from a sampling bag into a Summa Canister within 48 hours of collection.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294735

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytica Batch |
|-------------|-----------|-----------------|-----------|-------------------|--------------------|
| 10294735001 | V-DSCHG-1 | | AIR/22391 | | |
| 10294735002 | V-DSCHG-2 | TO-15 | AIR/22391 | | |
| 10294735003 | V-DSCHG-3 | TO-15 | AIR/22391 | | |
| 10294735004 | V-INT-1 | TO-15 | AIR/22391 | | |
| 10294735005 | V-INT-2 | TO-15 | AIR/22399 | | |
| 10294735006 | V-INT-3 | TO-15 | AIR/22358 | | |
| 10294735007 | V-INF-1 | TO-15 | AIR/22358 | | |
| 10294735008 | V-INF-2 | TO-15 | AIR/22358 | | |
| 10294735009 | V-INF-3 | TO-15 | AIR/22358 | | |

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CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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| Required Client Information: | Required Protect Information: | Invoice Information: | |
|---|--|-----------------------------------|---|
| Company: Cardno ATC | Report To: Kyle Sattler | Attention: | |
| Address: 7070 SW Fir Loop, Suite 100 | Capy To: Keith Fox | Company Name: | |
| Tigard, OR 97223 | | Addreas: | 。 一是他的现在分词是这些人的。其实是,Regulatory Agency 的复数分子生活的。我的问题: 同 |
| Email Tec lyle.sattler@cardro.com | Pundrase Order No. 03132603B | Pace Quote Reference: | PSCAA |
| Phone: 503 430 6696 Fax | Chant Project ID: AOC 1396 - P66 Westlake/Mercer | Pace Project Manager: Jenni Gross | |
| Requested Due Date/TAT: 10 Day (Standard) | Container Order Number: | Pace Profile # | WA |
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| | | | | | | Appinoide commerces | | | | V-INF-3 | V-INF-2 | V-INF-1 | V-INT-3 | V-INT-2 | V-INT-1 | V-DSCHG-3 | V-DSCHG-2 | V-DSCHG-1 | E Day (Standerd) | -1 | | 7070 SW Fir Loop, Suite 100 | - 14 |
| | | | - | Ma | | | | | | | | | | | | | | | AATRIX CODE (see valid codes to lot) BAMPLE TYPE (G=GRAB C=COMP) | Cliant Project ID: AOC 1396 - P66 Westlake/Mercer | Punchase Order No. | Copy To: | Report To: Kyle Sattler |
| | | | | | t | 10 | - | \square | | AR G | AR G | AR G | AR G | AR G | AR G | ARG | AR G | AR G | MATRIX CODE (see valial codes to lot) | ₽ | ŝ | ŝ | ŝ |
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| or SAMPLE | | AND SIGNA | | 1-16-15 | | bate | | | | | 15:20 | 5 15:15 | T | 5 15.05 | 5 15:10 | 5 14:55 | 5 14;50 | 5 14:45 | | Mercer | | | |
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| Pa | ce Analytical * | | Document | No.: | i i | Issuing Author Pace Minnesota Qua | ity: | |
| Air Sample Condition C Upon Receipt | Ilent Name: ATC - | | | roject # | " WO# | : 102947 | | |
| — | Fed Ex UPS Commercial Pace 779 S33 288 | USPS | []Clie | nt | 102947 | 35 | | |
| Custody Seal on Cooler/E | Box Present? Ves | No | Seals Inta | nct? [| | Optional: Proj. Due Date | e: Proj. Name: | |
| Packing Material: | _ | | 1 | <u> </u> |]Other: | Te | mp Blank rec: 🗍 Ye | |
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| Chain of Custody Relingui | | Z Yes | | | 3. | | | |
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| Short Hold Time Analysis Rush Turn Around Time I | | Yes | | | 7. | <u></u> | | |
| Sufficient Volume? | requesteur | Tes | | | 8. | | | |
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| Correct Containers Used? | | | | | 9. | | | |
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| Sample Labels Match COO | Lf | / Yes | No | | 12. | | | |
| Samples Received: | | | | | | | | |
| Cani | isters | | Flow Co | ontrollers | 5 | Sta | nd Alone G | |
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| Project Manager Reviews Note: Whenever there is a dis | EUN | | samples, a | conv of t | Date: | UI 122/16 | INR Certification Office | fie out |



Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

March 03, 2015

Kyle Sattler Cardno ATC 7070 SW Fir Loop Suite 100 Portland, OR 97223

RE: Project: AOC 1396-P-66 Westlake/Mercer Pace Project No.: 10298020

Dear Kyle Sattler:

Enclosed are the analytical results for sample(s) received by the laboratory on February 27, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

JENNI GROSS

Jennifer Gross jennifer.gross@pacelabs.com Project Manager

Enclosures

cc: Keith Fox, Cardno ATC





Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

CERTIFICATIONS

Project: AOC 1396-P-66 Westlake/Mercer

Pace Project No.: 10298020

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926.01 Alaska Certification #: UST-078 Alaska Certification #MN00064 Alabama Certification #40770 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #:14-008r Georgia Certification #: 959 Georgia EPD #: Pace Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137 Mississippi Certification #: Pace Montana Certification #: MT0092 Nevada Certification #: MN_00064 Nebraska Certification #: Pace New Jersey Certification #: MN-002 New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 West Virginia Certification #: 382 West Virginia DHHR #:9952C Wisconsin Certification #: 999407970



SAMPLE SUMMARY

Project: AOC 1396-P-66 Westlake/Mercer

Pace Project No.: 10298020 Lab ID **Date Collected Date Received** Sample ID Matrix V-DSCHG-1 10298020001 Air 02/25/15 09:30 02/27/15 09:55 10298020002 V-DSCHG-2 Air 02/25/15 09:35 02/27/15 09:55 10298020003 V-DSCHG-3 Air 02/25/15 09:40 02/27/15 09:55 10298020004 V-INT-1 Air 02/25/15 09:45 02/27/15 09:55 10298020005 V-INT-2 02/25/15 09:50 Air 02/27/15 09:55 10298020006 V-INT-3 Air 02/25/15 09:55 02/27/15 09:55 10298020007 V-INF-1 02/25/15 10:00 02/27/15 09:55 Air 02/27/15 09:55 10298020008 V-INF-2 Air 02/25/15 10:05 10298020009 V-INF-3 Air 02/25/15 10:10 02/27/15 09:55



SAMPLE ANALYTE COUNT

Project:AOC 1396-P-66 Westlake/MercerPace Project No.:10298020

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|-----------|----------|----------------------|------------|
| 10298020001 | V-DSCHG-1 | TO-15 | MJL | 6 | PASI-M |
| 10298020002 | V-DSCHG-2 | TO-15 | MJL | 6 | PASI-M |
| 10298020003 | V-DSCHG-3 | TO-15 | MJL | 6 | PASI-M |
| 10298020004 | V-INT-1 | TO-15 | MJL | 6 | PASI-M |
| 10298020005 | V-INT-2 | TO-15 | MJL | 6 | PASI-M |
| 10298020006 | V-INT-3 | TO-15 | MJL | 6 | PASI-M |
| 10298020007 | V-INF-1 | TO-15 | MJL | 6 | PASI-M |
| 10298020008 | V-INF-2 | TO-15 | MJL | 6 | PASI-M |
| 10298020009 | V-INF-3 | TO-15 | MJL | 6 | PASI-M |



Project: AOC 1396-P-66 Westlake/Mercer

Pace Project No.: 10298020

| Sample: V-DSCHG-1 | Lab ID: 1029 | 98020001 | Collected: 02/25/ | 15 09:30 | Received: (| 02/27/15 09:55 N | latrix: Air | |
|--|--|--|--|---|-------------------------|--|---|-----------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| O15 MSV AIR | Analytical Meth | od: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 11.0 | 33.8 | | 03/01/15 23:54 | 71-43-2 | A4 |
| Ethylbenzene | ND | ug/m3 | 29.7 | 33.8 | | 03/01/15 23:54 | 100-41-4 | |
| THC as Gas | ND | ug/m3 | 2060 | 33.8 | | 03/01/15 23:54 | | |
| Foluene | ND | ug/m3 | 26.0 | 33.8 | | 03/01/15 23:54 | 108-88-3 | |
| n&p-Xylene | ND | ug/m3 | 59.5 | 33.8 | | 03/01/15 23:54 | 179601-23-1 | |
| p-Xylene | ND | ug/m3 | 29.7 | 33.8 | | 03/01/15 23:54 | 95-47-6 | |
| Sample: V-DSCHG-2 | Lab ID: 1029 | 98020002 | Collected: 02/25/ | 15 09:35 | Received: (| 02/27/15 09:55 N | latrix: Air | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| O15 MSV AIR | Analytical Meth | od: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 11.0 | 33.8 | | 03/01/15 21:58 | 71-43-2 | A4 |
| Ethylbenzene | ND | ug/m3 | 29.7 | 33.8 | | 03/01/15 21:58 | 100-41-4 | |
| THC as Gas | 2530 | ug/m3 | 2060 | 33.8 | | 03/01/15 21:58 | | |
| oluene | ND | ug/m3 | 26.0 | 33.8 | | 03/01/15 21:58 | 108-88-3 | |
| n&p-Xylene | ND | ug/m3 | 59.5 | 33.8 | | 03/01/15 21:58 | | |
| -Xylene | ND | ug/m3 | 29.7 | 33.8 | | 03/01/15 21:58 | | |
| | | | | | | | | |
| | | | | | | | | |
| Sample: V-DSCHG-3 | Lab ID: 1029 | 98020003 | Collected: 02/25/ | 15 09:40 | Received: (| 02/27/15 09:55 N | latrix: Air | |
| Sample: V-DSCHG-3 Parameters | Lab ID: 1029 | 98020003 Units | Collected: 02/25/ | 15 09:40 DF | Received: (Prepared | 02/27/15 09:55 N | latrix: Air CAS No. | Qua |
| Parameters | | Units | | | | | | Qua |
| Parameters O15 MSV AIR | Results | Units | Report Limit | | | | CAS No. | Qua |
| Parameters O15 MSV AIR Benzene | Analytical Meth | Units od: TO-15 | Report Limit | DF 32.56 | | Analyzed | CAS No. 71-43-2 | |
| Parameters CO15 MSV AIR Benzene Ethylbenzene | Results Analytical Meth ND | Units lod: TO-15 ug/m3 | Report Limit 10.6 | DF 32.56 | | Analyzed 03/01/15 23:10 | CAS No. 71-43-2 | |
| Parameters TO15 MSV AIR Benzene Ethylbenzene "HC as Gas | Results Analytical Meth ND ND | Units lod: TO-15 ug/m3 ug/m3 | Report Limit 10.6 28.7 | DF 32.56 32.56 | | Analyzed 03/01/15 23:10 03/01/15 23:10 | CAS No. 71-43-2 100-41-4 | |
| Parameters CO15 MSV AIR Benzene Ethylbenzene HC as Gas Foluene | Results Analytical Meth ND ND ND | Units nod: TO-15 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 | DF 32.56 32.56 32.56 | | Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 | CAS No. 71-43-2 100-41-4 108-88-3 | |
| Parameters CO15 MSV AIR Benzene Ethylbenzene HC as Gas Toluene n&p-Xylene | Results Analytical Meth ND ND ND ND | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 25.1 57.3 | DF 32.56 32.56 32.56 32.56 | | Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 | |
| Sample: V-DSCHG-3 Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Foluene n&p-Xylene p-Xylene Sample: V-INT-1 | Results Analytical Meth ND ND ND ND ND | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 25.1 57.3 | DF 32.56 32.56 32.56 32.56 32.56 32.56 | Prepared | Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 | |
| Parameters CO15 MSV AIR Benzene Ethylbenzene HC as Gas Toluene n&p-Xylene Xylene | Results Analytical Meth ND ND ND ND ND ND | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 25.1 57.3 28.7 | DF 32.56 32.56 32.56 32.56 32.56 32.56 | Prepared | Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 | |
| Parameters CO15 MSV AIR Benzene Ethylbenzene HC as Gas Toluene n&p-Xylene -Xylene Sample: V-INT-1 Parameters | Results Analytical Meth ND ND ND ND ND ND ND | Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 25.1 57.3 28.7 Collected: 02/25/ | DF 32.56 32.56 32.56 32.56 32.56 32.56 32.56 | Prepared Received: (| Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 | A4 |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene D-Xylene D-Xylene TO15 MSV AIR TO15 MSV AIR | Results Analytical Meth ND ND <td< td=""><td>Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3</td><td>Report Limit 10.6 28.7 1980 25.1 57.3 28.7 Collected: 02/25/* Report Limit</td><td>DF 32.56 32.56 32.56 32.56 32.56 32.56 15 09:45 DF</td><td>Prepared Received: (</td><td>Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 02/27/15 09:55 M Analyzed</td><td>CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 fatrix: Air CAS No.</td><td>A4 Qua</td></td<> | Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 25.1 57.3 28.7 Collected: 02/25/* Report Limit | DF 32.56 32.56 32.56 32.56 32.56 32.56 15 09:45 DF | Prepared Received: (| Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 02/27/15 09:55 M Analyzed | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 fatrix: Air CAS No. | A4 Qua |
| Parameters CO15 MSV AIR Benzene Ethylbenzene HC as Gas foluene h&p-Xylene -Xylene Cample: V-INT-1 Parameters CO15 MSV AIR Benzene | Results Analytical Meth ND Analytical Meth ND | Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 25.1 57.3 28.7 Collected: 02/25/ Report Limit 11.0 | DF 32.56 32.56 32.56 32.56 32.56 32.56 15 09:45 DF 33.8 | Prepared Received: (| Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 02/27/15 09:55 M Analyzed 03/01/15 22:26 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 Matrix: Air CAS No. 71-43-2 | A4 |
| Parameters CO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene Comple: V-INT-1 Parameters CO15 MSV AIR Benzene Ethylbenzene | Results Analytical Meth ND Analytical Meth ND | Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 25.1 57.3 28.7 Collected: 02/25/ Report Limit 11.0 29.7 | DF 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 | Prepared Received: (| Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 02/27/15 09:55 M Analyzed 03/01/15 22:26 03/01/15 22:26 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 Matrix: Air CAS No. 71-43-2 | A4 Qua |
| Parameters CO15 MSV AIR Benzene Ethylbenzene HC as Gas foluene n&p-Xylene -Xylene Comple: V-INT-1 Parameters CO15 MSV AIR Benzene Ethylbenzene HC as Gas | Results Analytical Meth ND Analytical Meth ND | Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 25.1 57.3 28.7 Collected: 02/25/ Report Limit 11.0 29.7 2060 | DF 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 | Prepared Received: (| Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 02/27/15 09:55 M Analyzed 03/01/15 22:26 03/01/15 22:26 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 Matrix: Air CAS No. 71-43-2 100-41-4 | A4 Qua |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Foluene n&p-Xylene b-Xylene Bample: V-INT-1 | Results Analytical Meth ND Analytical Meth ND | Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 10.6 28.7 1980 25.1 57.3 28.7 Collected: 02/25/ Report Limit 11.0 29.7 | DF 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 32.56 | Prepared Received: (| Analyzed 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 03/01/15 23:10 02/27/15 09:55 M Analyzed 03/01/15 22:26 03/01/15 22:26 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 Matrix: Air CAS No. 71-43-2 100-41-4 108-88-3 | A4 Qua |

REPORT OF LABORATORY ANALYSIS



Project: AOC 1396-P-66 Westlake/Mercer

Pace Project No.: 10298020

| Lab ID: 1029 | 8020005 | Collected: 02/25/ | 15 09:50 | Received: (| 02/27/15 09:55 N | /latrix: Air | |
|-------------------|---|--|--|---|---|---|--|
| Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| Analytical Metho | od: TO-15 | | | | | | |
| ND | ug/m3 | 10.6 | 32.56 | | 03/01/15 22:48 | 71-43-2 | A4 |
| ND | ug/m3 | 28.7 | 32.56 | | 03/01/15 22:48 | 100-41-4 | |
| ND | ug/m3 | 1980 | 32.56 | | 03/01/15 22:48 | | |
| ND | ug/m3 | 25.1 | 32.56 | | 03/01/15 22:48 | 108-88-3 | |
| 115 | - | 57.3 | 32.56 | | 03/01/15 22:48 | 179601-23-1 | |
| 46.7 | ug/m3 | 28.7 | 32.56 | | 03/01/15 22:48 | 95-47-6 | |
| Lab ID: 1029 | 8020006 | Collected: 02/25/ | 15 09:55 | Received: (|)2/27/15 09:55 N | Aatrix: Air | |
| Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| Analytical Metho | od: TO-15 | | | | | | |
| ND | ug/m3 | 10.6 | 32,56 | | 03/01/15 23:32 | 71-43-2 | A4 |
| | 0 | | | | | - | |
| | 0 | | | | | 100 41 4 | |
| | - | | | | | 108-88-3 | |
| | - | | | | | | |
| | - | | | | | | |
| | ug/mo | 20.7 | 52.50 | | 00/01/10 20.02 | 55 1 0 | |
| Lab ID: 1029 | 8020007 | Collected: 02/25/7 | 15 10:00 | Received: (|)2/27/15 09:55 N | Atrix: Air | |
| Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| Analytical Metho | od: TO-15 | | | | | | |
| ND | ug/m3 | 9.4 | 28.8 | | 03/02/15 00:16 | 71-43-2 | A4 |
| ND | ug/m3 | 25.3 | 28.8 | | 03/02/15 00:16 | 100-41-4 | |
| ND | ug/m3 | 1750 | 28.8 | | 03/02/15 00:16 | | |
| ND | ug/m3 | 22.2 | 28.8 | | 03/02/15 00:16 | 108-88-3 | |
| ND | ug/m3 | 50.7 | 28.8 | | 03/02/15 00:16 | 179601-23-1 | |
| ND | ug/m3 | 25.3 | 28.8 | | 03/02/15 00:16 | 95-47-6 | |
| Lab ID: 1029 | 8020008 | Collected: 02/25/ | 15 10:05 | Received: (|)2/27/15 09:55 N | Atrix: Air | |
| Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| Analytical Metho | od: TO-15 | · | | | | | |
| - | | 7 / | 22 0 | | 03/01/15 21.36 | 71-43-2 | A4 |
| | 0 | | | | | | ~+ |
| | - | | | | | | |
| | - | | | | | | |
| | - | | | | | | |
| | 110/~~2 | | <u> </u> | | 02/01/15 01:00 | 170604 00 4 | |
| ND 32.3 | ug/m3 ug/m3 | 40.3 20.2 | 22.9 22.9 | | 03/01/15 21:36 03/01/15 21:36 | | |
| | Results Analytical Method ND ND ND ND ND ND ND Itab ID: 115 46.7 Lab ID: ND ND | Analytical Method: TO-15 ND ug/m3 ND ug/m3 ND ug/m3 ND ug/m3 115 ug/m3 46.7 ug/m3 46.7 ug/m3 46.7 ug/m3 Analytical Method: TO-15 ND ug/m3 ND ug/m | Results Units Report Limit Analytical Method: TO-15 ND ug/m3 10.6 ND ug/m3 28.7 ND ug/m3 1980 ND ug/m3 25.1 115 ug/m3 25.7 ND ug/m3 25.1 115 ug/m3 57.3 46.7 ug/m3 28.7 Results Units Report Limit Analytical Method: TO-15 Report Limit Analytical Method: TO-15 ND ug/m3 ND ug/m3 28.7 ND ug/m3 26.1 ND ug/m3 26.1 ND ug/m3 26.7 ND ug/m3 26.7 ND ug/m3 26.7 ND ug/m3 27.3 | Results Units Report Limit DF Analytical Method: TO-15 ND ug/m3 10.6 32.56 ND ug/m3 1980 32.56 ND ug/m3 25.1 32.56 ND ug/m3 25.1 32.56 ND ug/m3 25.1 32.56 115 ug/m3 57.3 32.56 46.7 ug/m3 57.3 32.56 Ade.7 ug/m3 57.3 32.56 Results Units Report Limit DF Analytical Method: TO-15 ND ug/m3 28.7 32.56 ND ug/m3 10.6 32.56 ND ug/m3 28.7 32.56 ND ug/m3 28.7 32.56 ND ug/m3 28.7 32.56 ND ug/m3 28.7 32.56 ND ug/m3 25.1 32.56 ND ug/m3 25.1 32.56 ND ug/m3 25.3 <t< td=""><td>Results Units Report Limit DF Prepared Analytical Method: TO-15 ND ug/m3 10.6 32.56 32.56 ND ug/m3 1980 32.56 32.56 32.56 ND ug/m3 1980 32.56 32.56 32.56 ND ug/m3 28.7 32.56 Results 97.7 32.56 46.7 ug/m3 28.7 32.56 Received: 0 97.7 Analytical Method: TO-15 ND ug/m3 10.6 32.56 97.7</td><td>Results Units Report Limit DF Prepared Analyzed Analytical Method: TO-15 ND ug/m3 10.6 32.56 03/01/15 22:48 ND ug/m3 1980 32.56 03/01/15 22:48 ND ug/m3 1980 32.56 03/01/15 22:48 ND ug/m3 25.1 32.56 03/01/15 22:48 ND ug/m3 57.3 32.56 03/01/15 22:48 46.7 ug/m3 28.7 32.56 03/01/15 22:48 Add.7 ug/m3 28.7 32.56 03/01/15 22:48 Add.7 ug/m3 28.7 32.56 03/01/15 22:49 Analytical Method: TO-15 ND ug/m3 10.6 32.56 03/01/15 23:32 ND ug/m3 25.1 32.56 03/01/15 23:32 ND 03/01/15 23:32 ND ug/m3 25.1 32.56 03/01/15 23:32 ND 03/01/15 23:32 ND ug/m3 25.3 28.8 03/02/15 00:16 ND</td><td>Results Units Report Limit DF Prepared Analyzed CAS No. Analytical Method: TO-15 ND ug/m3 10.6 32.56 03/01/15 22:48 71-43-2 ND ug/m3 28.7 32.56 03/01/15 22:48 100-41-4 ND ug/m3 25.6 03/01/15 22:48 108-88-3 115 ug/m3 25.7 32.56 03/01/15 22:48 178-88-3 46.7 ug/m3 28.7 32.56 03/01/15 22:48 95-47-6 Lab ID: 10298020006 Collected: 02/25/15 09:55 Matrix: Air Results Units Report Limit DF Prepared Analyzed CAS No. Analytical Method: TO-15 ND ug/m3 10.6 32.56 03/01/15 23:32 10-41-4 ND ug/m3 28.7 32.56 03/01/15 23:32 10-46-4 ND ug/m3 25.6 03/01/15 23:32 108-88-3 ND ug/m3 25.3 28.6 03/02/15 00:16 <</td></t<> | Results Units Report Limit DF Prepared Analytical Method: TO-15 ND ug/m3 10.6 32.56 32.56 ND ug/m3 1980 32.56 32.56 32.56 ND ug/m3 1980 32.56 32.56 32.56 ND ug/m3 28.7 32.56 Results 97.7 32.56 46.7 ug/m3 28.7 32.56 Received: 0 97.7 Analytical Method: TO-15 ND ug/m3 10.6 32.56 97.7 | Results Units Report Limit DF Prepared Analyzed Analytical Method: TO-15 ND ug/m3 10.6 32.56 03/01/15 22:48 ND ug/m3 1980 32.56 03/01/15 22:48 ND ug/m3 1980 32.56 03/01/15 22:48 ND ug/m3 25.1 32.56 03/01/15 22:48 ND ug/m3 57.3 32.56 03/01/15 22:48 46.7 ug/m3 28.7 32.56 03/01/15 22:48 Add.7 ug/m3 28.7 32.56 03/01/15 22:48 Add.7 ug/m3 28.7 32.56 03/01/15 22:49 Analytical Method: TO-15 ND ug/m3 10.6 32.56 03/01/15 23:32 ND ug/m3 25.1 32.56 03/01/15 23:32 ND 03/01/15 23:32 ND ug/m3 25.1 32.56 03/01/15 23:32 ND 03/01/15 23:32 ND ug/m3 25.3 28.8 03/02/15 00:16 ND | Results Units Report Limit DF Prepared Analyzed CAS No. Analytical Method: TO-15 ND ug/m3 10.6 32.56 03/01/15 22:48 71-43-2 ND ug/m3 28.7 32.56 03/01/15 22:48 100-41-4 ND ug/m3 25.6 03/01/15 22:48 108-88-3 115 ug/m3 25.7 32.56 03/01/15 22:48 178-88-3 46.7 ug/m3 28.7 32.56 03/01/15 22:48 95-47-6 Lab ID: 10298020006 Collected: 02/25/15 09:55 Matrix: Air Results Units Report Limit DF Prepared Analyzed CAS No. Analytical Method: TO-15 ND ug/m3 10.6 32.56 03/01/15 23:32 10-41-4 ND ug/m3 28.7 32.56 03/01/15 23:32 10-46-4 ND ug/m3 25.6 03/01/15 23:32 108-88-3 ND ug/m3 25.3 28.6 03/02/15 00:16 < |

REPORT OF LABORATORY ANALYSIS



Project: AOC 1396-P-66 Westlake/Mercer

Pace Project No.: 10298020

| Sample: V-INF-3 | Lab ID: 102 | 98020009 | Collected: 02/25/1 | 5 10:10 | Received: 02 | 2/27/15 09:55 N | latrix: Air | |
|-----------------|----------------|------------|--------------------|---------|--------------|-----------------|-------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| TO15 MSV AIR | Analytical Met | hod: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 11.7 | 36 | | 03/01/15 21:14 | 71-43-2 | A4 |
| Ethylbenzene | ND | ug/m3 | 31.7 | 36 | | 03/01/15 21:14 | 100-41-4 | |
| THC as Gas | 3340 | ug/m3 | 2190 | 36 | | 03/01/15 21:14 | | |
| Toluene | ND | ug/m3 | 27.7 | 36 | | 03/01/15 21:14 | 108-88-3 | |
| m&p-Xylene | ND | ug/m3 | 63.4 | 36 | | 03/01/15 21:14 | 179601-23-1 | |
| o-Xylene | ND | ug/m3 | 31.7 | 36 | | 03/01/15 21:14 | 95-47-6 | |



| C Batch: AIR/22 | 2619 | Analysis Me | ethod: T | O-15 | | |
|------------------------|--|-----------------------|----------------|-------------|--------------|--------------|
| C Batch Method: TO-15 | 5 | Analysis De | scription: T | O15 MSV AIR | Low Level | |
| ssociated Lab Samples: | 10298020001, 10298020002 10298020008, 10298020009 | | 10298020004, 1 | 0298020005, | 10298020006, | 10298020007, |
| ETHOD BLANK: 190917 | 4 | Matrix | : Air | | | |
| ssociated Lab Samples: | 10298020001, 10298020002 10298020008, 10298020009 | | 10298020004, 1 | 0298020005, | 10298020006, | 10298020007, |
| | | Blank | Reporting | | | |
| Parameter | Units | Result | Limit | Analyze | d Quali | fiers |
| enzene | ug/m3 | ND | 0.32 | 03/01/15 13 | 3:57 | |
| thylbenzene | ug/m3 | ND | | 03/01/15 13 | | |
| i&p-Xylene | ug/m3 | ND | | 03/01/15 13 | | |
| -Xylene | ug/m3 | ND | | | | |
| HC as Gas oluene | ug/m3 ug/m3 | ND ND | | | | |
| | ug, mo | | 0.17 | | 5.01 | |
| ABORATORY CONTROL S | SAMPLE: 1909175 | | | | | |
| | | Spike | LCS | LCS | % Rec | |
| Parameter | Units | Conc. | Result | % Rec | Limits | Qualifiers |
| enzene | ug/m3 | 32.5 | 37.3 | 115 | 64-139 | |
| nylbenzene | ug/m3 | 44.2 | 51.9 | 118 | 71-136 | |
| &p-Xylene | ug/m3 | 88.3 | 103 | 117 | 71-134 | |
| Kylene | ug/m3 | 44.2 | 51.7 | 117 | 75-134 | |
| HC as Gas | ug/m3 | 3520 | 3670 | 104 | 66-135 | |
| bluene | ug/m3 | 38.3 | 43.5 | 114 | 70-129 | |
| AMPLE DUPLICATE: 190 | 09440 | 40007070004 | | | | |
| Parameter | Units | 10297676001 Result | Dup Result | RPD | Max RPD | Qualifiers |
| enzene | ug/m3 | 0.86 | 0.1.0 | | 14 | 25 |
| nylbenzene | ug/m3 | ND | | | | 25 |
| p-Xylene | ug/m3 | ND | | | | 25 |
| ylene | ug/m3 | ND | | | _ | 25 |
| C as Gas | ug/m3 | 484 | | | 5 | 25 |
| luene | ug/m3 | 115 | 110 | | 5 | 25 |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS



QUALIFIERS

Project: AOC 1396-P-66 Westlake/Mercer

Pace Project No.: 10298020

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

A4 Sample was transferred from a sampling bag into a Summa Canister within 48 hours of collection.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AOC 1396-P-66 Westlake/Mercer

Pace Project No.: 10298020

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch | |
|-------------|-----------|-----------------|-----------|-------------------|---------------------|--|
| 10298020001 | V-DSCHG-1 | TO-15 | AIR/22619 | | | |
| 10298020002 | V-DSCHG-2 | TO-15 | AIR/22619 | | | |
| 10298020003 | V-DSCHG-3 | TO-15 | AIR/22619 | | | |
| 10298020004 | V-INT-1 | TO-15 | AIR/22619 | | | |
| 10298020005 | V-INT-2 | TO-15 | AIR/22619 | | | |
| 10298020006 | V-INT-3 | TO-15 | AIR/22619 | | | |
| 10298020007 | V-INF-1 | TO-15 | AIR/22619 | | | |
| 10298020008 | V-INF-2 | TO-15 | AIR/22619 | | | |
| 10298020009 | V-INF-3 | TO-15 | AIR/22619 | | | |

| PaceAralytica | |
|---------------|--|
| i B | |

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

0248020

| | | Γ | Τ | | Τ | | 191 | 12 | | 10 | | | | | 5 | 4 | 3 | 2 | | EM# | Company: Address: | Soction A Required |
|-----------------------|--------------------|---------------------------|---|----------|--------|--------|--|-----------|----------|------------|-------------|----------------------------|----------------------|------------|------------|-------------|--------------|-------------|-------------|--|---|-----------------------------------|
| | | | | | | | A State of the substant of the | | | | V-INF-3 | V-INF-2 | V-INF-1 | V-INT-3 | V-INT-2 | V-INT-1 | V-DSCHG-3 | V-DSCHG-2 | V-DSCHG-1 | Tigard, OR 97/223 kyle.sattler@cardno.com 503 430 6696 Fax 10 Day (Standard) Che Date/TAT: 10 Day (Standard) Che Character per box. (A-Z, 0-9 1, -) Sample ids must to unique | Cardno ATC 7070 SW Fir Loon, Suite 100 | ទ |
| | | | | 1 | | | | | | | | | | | ~ | 4 | | > | | ATRIX CODE (see valid codes to isft) ATRIX CODE (see valid codes to i | Report To: Kyle Sattler Copy To: Keith Fox | Section B Required Proje |
| | | | | ¢ | Ľ | | IKOU | | | \vdash | AR G | AR G | AR G | AR G | AR G | AR G | AR G | ARG | AR G | ATRIX CODE (see valid codes to left) | N S S | ct Info |
| | | | | | Ø | | THE RELINCUISTED BY JAFFIL ATION | | | | | | | | | | | | | START 0 | attler | rmation: |
| SIGNA | PRINT | SAMPLER WAR AND SUDATIONS | | • | Q | | VIELLATION | | | | ß | ß | B | 8 | 8 | 8 | 8 | B | 8 | л осцество В | | |
| SIGNATURE of SAMPLER: | Name of Su | MEAD | | | の下っ | | | | | | 02/25/15 10 | 02/25/15 10 | 102/25/15 | 02/25/15 8 | 02/25/15 8 | 02/25/15 9. | 02/25/15 8: | 02/25/15 8: | 02/25/15 8: | END BUILDER | | |
| MPLE | WPLE | | | | 512-6 | | INTE | | | | 10:10 | 10 10 10 10 10 | 10 10 10 10 | 9.55 | 88 | 9.45 | 8.6 | 9:3S | 9. 30 | | | |
| | 77 | i)ki | | | - I | | | | | ╋ | N | 2 | N | N | N | N | | - | | AMPLE TEMP AT COLLECTION | 83 | : ₹₹\$ |
| Ê | | | | | 1997 | | | - | ┢ | ┼─ | × | × | × | × | × | × | 1× | × | × | OF CONTAINERS Pace Quele Reference: Pace Quele Reference: Pace Profile S: 5 Pace Quele Reference: Pace Q | Attention: Company Name: | Section C Involce Information: |
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| \square | Document Nam Air Sampia Condition U | | Document Revised: 26Dec2013 Page 1 of 1 | | | | | | |
|---|--|---|--|--|--|--|--|--|--|
| Pace Analytical* | Document No F-MN-A-105-res | .: | Issuing Authority: Pace Minnesota Quality Office | | | | | | |
| Air Sample Condition Upon Receipt Courier: KFed Ex UPS Commercial Pace Tracking Number: 6779 5333 | Proj | | 1029802 | 0 | | | | | |
| Custody Seal on Cooler/Box Present? | No Seals intact | ? | Optional: Proj. Due Date: | Proj. Name: | | | | | |
| Packing Material: Bubble Wrap | Bags Foam None | Other: | Temp | Blank rec: 🔲 Yes 🛱 No | | | | | |
| Temp. (TO17 and TO13 samples only) ('C): Temp should be above freezing to 6'C Correction Fa Type of ice Received Blue Wet Wallone | Corrected Temp (*C): | Thermom. Used: Date & Initials of Po | B888A912167504 B888A9132521491 erson Examining Contents: | 72337080 180512447 15 2/27/15 | | | | | |
| | | | Comments: | | | | | | |
| Chain of Custody Present? | | N/A 1 | | <u></u> | | | | | |
| Chain of Custody Filled Out? | | N/A 2. | · | | | | | | |
| Chain of Custody Relinquished? | | N/A 3. | | | | | | | |
| Sampler Name and/or Signature on COC? | | N/A 4. | | | | | | | |
| Samples Arrived within Hold Time? | | N/A 5. | hr - TBug | | | | | | |
| Short Hold Time Analysis (<72 hr)? | | | <u>rii - 104.9</u> | | | | | | |
| Rush Turn Around Time Requested? | | N/A 7. | ····· | <u></u> <u></u> _ | | | | | |
| Sufficient Volume? | | <u>]N/A 8.</u> | | | | | | | |
| Correct Containers Used? | |]N/A 9. | | | | | | | |
| -Pace Containers Used? | | N/A | | <u></u> | | | | | |
| Containers Intact? | Yes No | N/A 10. | | | | | | | |
| Media: Tedlar | <u> </u> | 11, | | <u></u> | | | | | |
| Sample Labels Match COC? | | N/A 12. | | ······································ | | | | | |
| Samples Received: | | | | | | | | | |
| Canisters | Flow Can | trollers | Stand | Alone G | | | | | |
| Sample Number Can ID | Sample Number | Can ID | Sample Number | Can ID | | | | | |
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| CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No Person Contacted: Date/Time: | | | | | | | | | |
| Comments/Resolution: | | | | | | | | | |
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| Project Manager Review: | | Date: | | | | | | | |

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

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Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

March 24, 2015

Kyle Sattler Cardno ATC 7070 SW Fir Loop Suite 100 Portland, OR 97223

RE: Project: AOC 1396-P66 Westlake/Mercer Pace Project No.: 10300007

Dear Kyle Sattler:

Enclosed are the analytical results for sample(s) received by the laboratory on March 19, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

JENNI GROSS

Jennifer Gross jennifer.gross@pacelabs.com Project Manager

Enclosures

cc: Keith Fox, Cardno ATC





Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

CERTIFICATIONS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300007

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926.01 Alaska Certification #: UST-078 Alaska Certification #MN00064 Alabama Certification #40770 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #:14-008r Georgia Certification #: 959 Georgia EPD #: Pace Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137 Mississippi Certification #: Pace Montana Certification #: MT0092 Nevada Certification #: MN_00064 Nebraska Certification #: Pace New Jersey Certification #: MN-002 New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 West Virginia Certification #: 382 West Virginia DHHR #:9952C Wisconsin Certification #: 999407970



SAMPLE SUMMARY

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300007

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|-------------|-----------|--------|----------------|----------------|
| 10300007001 | V-DSCHG-1 | Air | 03/18/15 12:25 | 03/19/15 09:30 |
| 10300007002 | V-DSCHG-2 | Air | 03/18/15 12:30 | 03/19/15 09:30 |
| 10300007003 | V-DSCHG-3 | Air | 03/18/15 12:35 | 03/19/15 09:30 |
| 10300007004 | V-INT-1 | Air | 03/18/15 12:50 | 03/19/15 09:30 |
| 10300007005 | V-INT-2 | Air | 03/18/15 12:45 | 03/19/15 09:30 |
| 10300007006 | V-INT-3 | Air | 03/18/15 12:40 | 03/19/15 09:30 |
| 10300007007 | V-INF-1 | Air | 03/18/15 12:55 | 03/19/15 09:30 |
| 10300007008 | V-INF-2 | Air | 03/18/15 13:00 | 03/19/15 09:30 |
| 10300007009 | V-INF-3 | Air | 03/18/15 13:05 | 03/19/15 09:30 |



SAMPLE ANALYTE COUNT

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10300007

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|--------|----------|----------------------|------------|
| 10300007001 | V-DSCHG-1 | TO-15 | AH2 | 6 | PASI-M |
| 10300007002 | V-DSCHG-2 | TO-15 | AH2 | 6 | PASI-M |
| 10300007003 | V-DSCHG-3 | TO-15 | AH2 | 6 | PASI-M |
| 10300007004 | V-INT-1 | TO-15 | AH2 | 6 | PASI-M |
| 10300007005 | V-INT-2 | TO-15 | AH2 | 6 | PASI-M |
| 10300007006 | V-INT-3 | TO-15 | AH2 | 6 | PASI-M |
| 10300007007 | V-INF-1 | TO-15 | AH2 | 6 | PASI-M |
| 10300007008 | V-INF-2 | TO-15 | AH2 | 6 | PASI-M |
| 10300007009 | V-INF-3 | TO-15 | AH2 | 6 | PASI-M |



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300007

| Sample: V-DSCHG-1 | Lab ID: 103 | 00007001 | Collected: 03/18/ | 15 12:25 | Received: 0 | 03/19/15 09:30 N | latrix: Air | |
|---|--|--|--|--|-------------------------|--|---|-----------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| TO15 MSV AIR | Analytical Meth | nod: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 3.3 | 10.12 | | 03/23/15 13:04 | 71-43-2 | 2M |
| Ethylbenzene | ND | ug/m3 | 44.7 | 10.12 | | 03/23/15 13:04 | 100-41-4 | |
| THC as Gas | 2720 | ug/m3 | 615 | 10.12 | | 03/23/15 13:04 | | |
| Toluene | 10.2 | ug/m3 | 7.8 | 10.12 | | 03/23/15 13:04 | 108-88-3 | |
| m&p-Xylene | ND | ug/m3 | 17.8 | 10.12 | | 03/23/15 13:04 | 179601-23-1 | |
| p-Xylene | ND | ug/m3 | 44.7 | 10.12 | | 03/23/15 13:04 | 95-47-6 | |
| Sample: V-DSCHG-2 | Lab ID: 103 | 00007002 | Collected: 03/18/ | 15 12:30 | Received: 0 | 03/19/15 09:30 N | latrix: Air | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| TO15 MSV AIR | Analytical Meth | nod: TO-15 | | | | | - | _ |
| Benzene | ND | ug/m3 | 8.6 | 26.6 | | 03/23/15 13:26 | 71-43-2 | 2M |
| Ethylbenzene | ND | ug/m3 | 117 | 26.6 | | 03/23/15 13:26 | | |
| THC as Gas | 3470 | ug/m3 | 1620 | 26.6 | | 03/23/15 13:26 | | |
| Toluene | 29.5 | ug/m3 | 20.5 | 26.6 | | 03/23/15 13:26 | 108-88-3 | |
| n&p-Xylene | ND | ug/m3 | 46.8 | 26.6 | | 03/23/15 13:26 | | |
| p-Xylene | ND | ug/m3 | 117 | 26.6 | | 03/23/15 13:26 | | |
| | | ug/mo | | 20.0 | | 00,20,10 10.20 | | |
| | | | | | | | | |
| Sample: V-DSCHG-3 | Lab ID: 103 | 00007003 | Collected: 03/18/ | 15 12:35 | Received: 0 | 03/19/15 09:30 N | latrix: Air | |
| Sample: V-DSCHG-3 Parameters | Lab ID: 103 Results | 00007003 Units | Collected: 03/18/* Report Limit | 15 12:35 DF | Received: 0 Prepared | 03/19/15 09:30 N Analyzed | latrix: Air CAS No. | Qua |
| Parameters | | Units | | | | | | Qua |
| Parameters | Results | Units | | | | | CAS No. | Qua 2M |
| Parameters TO15 MSV AIR Benzene | Results Analytical Meth | Units nod: TO-15 | Report Limit | DF | | Analyzed | CAS No. 71-43-2 | |
| Parameters TO15 MSV AIR Benzene Ethylbenzene | Results Analytical Meth ND | Units nod: TO-15 ug/m3 | Report Limit | DF 16.8 | | Analyzed 03/23/15 13:48 | CAS No. 71-43-2 | |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas | Results Analytical Meth ND ND | Units nod: TO-15 ug/m3 ug/m3 | Report Limit 5.5 74.2 | DF 16.8 16.8 | | Analyzed 03/23/15 13:48 03/23/15 13:48 | CAS No. 71-43-2 100-41-4 | |
| Parameters CO15 MSV AIR Benzene Ethylbenzene HC as Gas Toluene | Results Analytical Meth ND ND 2240 | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 5.5 74.2 1020 | DF 16.8 16.8 16.8 | | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 | CAS No. 71-43-2 100-41-4 108-88-3 | |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene | Results Analytical Meth ND ND 2240 ND | Units nod: TO-15 ug/m3 ug/m3 ug/m3 | Report Limit 5.5 74.2 1020 12.9 | DF 16.8 16.8 16.8 16.8 | | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 | |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene b-Xylene | Results Analytical Meth ND ND 2240 ND ND ND | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 5.5 74.2 1020 12.9 29.6 | DF 16.8 16.8 16.8 16.8 16.8 16.8 | Prepared | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 | |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene b-Xylene | Results Analytical Meth ND ND 2240 ND ND ND ND | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 5.5 74.2 1020 12.9 29.6 74.2 | DF 16.8 16.8 16.8 16.8 16.8 16.8 | Prepared | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 | |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene Sample: V-INT-1 Parameters | Results Analytical Meth ND 2240 ND ND ND ND ND | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 00007004 Units | Report Limit 5.5 74.2 1020 12.9 29.6 74.2 Collected: 03/18/* | DF 16.8 16.8 16.8 16.8 16.8 16.8 | Prepared Received: 0 | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 | 2M |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene D-Xylene D-Xylene TO15 MSV AIR TO15 MSV AIR | Results Analytical Meth ND ND 2240 ND ND ND ND ND ND ND ND | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 nod: TO-15 | Report Limit 5.5 74.2 1020 12.9 29.6 74.2 Collected: 03/18/* Report Limit | DF 16.8 16.8 16.8 16.8 16.8 16.8 | Prepared Received: 0 | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. | 2M |
| Parameters CO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene Comple: V-INT-1 Parameters CO15 MSV AIR Benzene | Results Analytical Meth ND ND 2240 ND ND ND ND ND ND ND ND ND ND ND ND ND | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 o00007004 Units nod: TO-15 ug/m3 | Report Limit 5.5 74.2 1020 12.9 29.6 74.2 Collected: 03/18/* Report Limit 5.5 | DF 16.8 16.8 16.8 16.8 16.8 15 12:50 DF 16.8 | Prepared Received: 0 | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. 71-43-2 | 2M Qua |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene Bample: V-INT-1 Parameters TO15 MSV AIR Benzene Ethylbenzene | Results Analytical Meth ND ND 2240 ND ND ND ND ND Results Analytical Meth 19.4 ND | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 5.5 74.2 1020 12.9 29.6 74.2 Collected: 03/18/* Report Limit 5.5 74.2 | DF 16.8 16.8 16.8 16.8 16.8 15 12:50 DF 16.8 16.8 | Prepared Received: 0 | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 14:10 03/23/15 14:10 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. 71-43-2 | 2M Qua |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene Bample: V-INT-1 Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas | Results Analytical Meth ND ND 2240 ND ND ND ND ND Results Analytical Meth 19.4 ND 3310 | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 5.5 74.2 1020 12.9 29.6 74.2 Collected: 03/18/* Report Limit 5.5 74.2 | DF 16.8 16.8 16.8 16.8 16.8 15 12:50 DF 16.8 16.8 16.8 16.8 16.8 | Prepared Received: 0 | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 14:10 03/23/15 14:10 03/23/15 14:10 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. 71-43-2 100-41-4 | 2M |
| TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene m&p-Xylene p-Xylene Sample: V-INT-1 | Results Analytical Meth ND ND 2240 ND ND ND ND ND Results Analytical Meth 19.4 ND | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 5.5 74.2 1020 12.9 29.6 74.2 Collected: 03/18/* Report Limit 5.5 74.2 | DF 16.8 16.8 16.8 16.8 16.8 15 12:50 DF 16.8 16.8 | Prepared Received: 0 | Analyzed 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 13:48 03/23/15 14:10 03/23/15 14:10 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. 71-43-2 100-41-4 108-88-3 | 2M Qua |

REPORT OF LABORATORY ANALYSIS

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Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300007

| Sample: V-INT-2 | Lab ID: 1030 | 00007005 | Collected: 03/18/1 | 5 12:45 | Received: 0 | 03/19/15 09:30 N | latrix: Air | |
|--|--|---|---|---|-------------|--|---|-----------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| TO15 MSV AIR | Analytical Meth | od: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 5.5 | 16.8 | | 03/23/15 14:31 | 71-43-2 | 1M |
| Ethylbenzene | ND | ug/m3 | 74.2 | 16.8 | | 03/23/15 14:31 | 100-41-4 | |
| THC as Gas | 1500 | ug/m3 | 1020 | 16.8 | | 03/23/15 14:31 | | |
| Toluene | 15.0 | ug/m3 | 12.9 | 16.8 | | 03/23/15 14:31 | 108-88-3 | |
| m&p-Xylene | ND | ug/m3 | 29.6 | 16.8 | | 03/23/15 14:31 | | |
| p-Xylene | ND | ug/m3 | 74.2 | 16.8 | | 03/23/15 14:31 | | |
| | | | | | | | | |
| Sample: V-INT-3 | Lab ID: 1030 | 00007006 | Collected: 03/18/1 | 5 12:40 | Received: 0 | 03/19/15 09:30 N | latrix: Air | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| TO15 MSV AIR | Analytical Meth | od: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 6.8 | 21 | | 03/23/15 15:04 | 71-43-2 | 2M |
| Ethylbenzene | ND | ug/m3 | 92.7 | 21 | | 03/23/15 15:04 | 100-41-4 | |
| THC as Gas | ND | ug/m3 | 1280 | 21 | | 03/23/15 15:04 | | |
| Toluene | 28.4 | ug/m3 | 16.2 | 21 | | 03/23/15 15:04 | 108-88-3 | |
| | | - | | 21 | | | | |
| n&p-Xylene | ND | ug/m3 | 37.0 | | | 03/23/15 15:04 | | |
| o-Xylene | ND | ug/m3 | 92.7 | 21 | | 03/23/15 15:04 | 95-47-6 | |
| Sample: V-INF-1 | Lab ID: 1030 | 0007007 | Collected: 03/18/1 | 5 12:55 | Received: 0 |)3/19/15 09:30 N | latrix: Air | |
| | Lab ID. 1030 | 0007007 | | | | | | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| Parameters | | Units | | DF | Prepared | | | Qua |
| Parameters | Results Analytical Meth | Units od: TO-15 | Report Limit | | Prepared | Analyzed | CAS No. | · |
| Parameters TO15 MSV AIR Benzene | Results Analytical Meth ND | Units lod: TO-15 ug/m3 | Report Limit | 18.7 | Prepared | Analyzed 03/23/15 15:25 | CAS No. 71-43-2 | Qua |
| Parameters TO15 MSV AIR Benzene Ethylbenzene | Results Analytical Meth ND ND | Units lod: TO-15 ug/m3 ug/m3 | Report Limit 6.1 82.5 | 18.7 18.7 | Prepared | Analyzed 03/23/15 15:25 03/23/15 15:25 | CAS No. 71-43-2 | · |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas | Results Analytical Meth ND ND 1970 | Units nod: TO-15 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 | 18.7 18.7 18.7 | Prepared | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 | CAS No. 71-43-2 100-41-4 | · |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Foluene | Results Analytical Meth ND ND 1970 23.1 | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 14.4 | 18.7 18.7 18.7 18.7 18.7 | Prepared | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 | CAS No. 71-43-2 100-41-4 108-88-3 | · |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene | Results Analytical Meth ND ND 1970 23.1 44.4 | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 14.4 32.9 | 18.7 18.7 18.7 18.7 18.7 18.7 | Prepared | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 | · |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene | Results Analytical Meth ND ND 1970 23.1 | Units nod: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 14.4 | 18.7 18.7 18.7 18.7 18.7 | Prepared | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 | · |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene m&p-Xylene p-Xylene | Results Analytical Meth ND ND 1970 23.1 44.4 | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 14.4 32.9 | 18.7 18.7 18.7 18.7 18.7 18.7 18.7 | | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 | · |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene b-Xylene | Results Analytical Meth ND ND 1970 23.1 44.4 ND | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 14.4 32.9 82.5 | 18.7 18.7 18.7 18.7 18.7 18.7 18.7 | | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 | · |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene b-Xylene Bample: V-INF-2 Parameters | Results Analytical Meth ND ND 1970 23.1 44.4 ND Lab ID: 1030 | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 Units | Report Limit 6.1 82.5 1140 14.4 32.9 82.5 | 18.7 18.7 18.7 18.7 18.7 18.7 18.7 5 13:00 | Received: 0 | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 | 1M |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene D-Xylene D-Xylene TO15 MSV AIR TO15 MSV AIR | Results Analytical Meth ND ND 1970 23.1 44.4 ND Lab ID: 1030 Results Analytical Meth ND | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 Units | Report Limit 6.1 82.5 1140 14.4 32.9 82.5 | 18.7 18.7 18.7 18.7 18.7 18.7 18.7 5 13:00 | Received: 0 | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. | 1M |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene D-Xylene D-Xylene TO15 MSV AIR Benzene | Results Analytical Meth ND ND 1970 23.1 44.4 ND Lab ID: 1030 Results Analytical Meth | Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 14.4 32.9 82.5 Collected: 03/18/1 Report Limit | 18.7 18.7 18.7 18.7 18.7 18.7 5 13:00 DF | Received: 0 | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 09:30 M Analyzed | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. 71-43-2 | 1M Qua |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene D-Xylene D-Xylene TO15 MSV AIR Benzene Ethylbenzene | Results Analytical Meth ND ND 1970 23.1 44.4 ND Lab ID: 1030 Results Analytical Meth ND | Units ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 14.4 32.9 82.5 Collected: 03/18/1 Report Limit 5.8 | 18.7 18.7 18.7 18.7 18.7 18.7 5 13:00 DF | Received: 0 | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/19/15 09:30 M Analyzed 03/23/15 15:47 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. 71-43-2 | 1M Qu |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene n&p-Xylene D-Xylene D-Xylene D-Xylene TO15 MSV AIR Benzene Ethylbenzene THC as Gas | Results Analytical Meth ND ND 1970 23.1 44.4 ND Lab ID: 1030 Results Analytical Meth ND ND ND | Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 14.4 32.9 82.5 Collected: 03/18/1 Report Limit 5.8 79.5 | 18.7 18.7 18.7 18.7 18.7 18.7 5 13:00 DF 18 18 18 | Received: 0 | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/19/15 09:30 M Analyzed 03/23/15 15:47 03/23/15 15:47 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. 71-43-2 100-41-4 | 1M Qu |
| Parameters TO15 MSV AIR Benzene Ethylbenzene THC as Gas Toluene m&p-Xylene o-Xylene Sample: V-INF-2 | Results Analytical Meth ND ND 1970 23.1 44.4 ND Lab ID: 1030 Results Analytical Meth ND ND 2300 | Units ud: TO-15 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 ug/m3 | Report Limit 6.1 82.5 1140 14.4 32.9 82.5 Collected: 03/18/1 Report Limit 5.8 79.5 1090 | 18.7 18.7 18.7 18.7 18.7 18.7 5 13:00 DF 18 18 18 18 18 18 | Received: 0 | Analyzed 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:25 03/23/15 15:47 03/23/15 15:47 03/23/15 15:47 03/23/15 15:47 | CAS No. 71-43-2 100-41-4 108-88-3 179601-23-1 95-47-6 latrix: Air CAS No. 71-43-2 100-41-4 108-88-3 | 1M Qua |

REPORT OF LABORATORY ANALYSIS

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Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300007

| Sample: V-INF-3 | Lab ID: 103 | 00007009 | Collected: 03/18/1 | 5 13:05 | Received: 03 | 8/19/15 09:30 N | latrix: Air | |
|-----------------|----------------|------------|--------------------|---------|--------------|-----------------|-------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| TO15 MSV AIR | Analytical Met | hod: TO-15 | | | | | | |
| Benzene | ND | ug/m3 | 5.7 | 17.4 | | 03/23/15 16:09 | 71-43-2 | 1M |
| Ethylbenzene | ND | ug/m3 | 76.8 | 17.4 | | 03/23/15 16:09 | 100-41-4 | |
| THC as Gas | 2290 | ug/m3 | 1060 | 17.4 | | 03/23/15 16:09 | | |
| Toluene | 14.8 | ug/m3 | 13.4 | 17.4 | | 03/23/15 16:09 | 108-88-3 | |
| m&p-Xylene | 38.3 | ug/m3 | 30.6 | 17.4 | | 03/23/15 16:09 | 179601-23-1 | |
| o-Xylene | ND | ug/m3 | 76.8 | 17.4 | | 03/23/15 16:09 | 95-47-6 | |



| Project: | | | estlake/Mercer | | | | | | | |
|--------------------|--------|---------|---------------------------------------|-------------|--------------|--------|-------------|------------|-----------|---------|
| Pace Project No.: | 103000 | 007 | | | | | | | | |
| QC Batch: | AIR/2 | 2808 | | Analysis I | Method: | тс | D-15 | | | |
| QC Batch Method: | TO-1 | 5 | | Analysis I | Description: | тс | D15 MSV AIR | Low Level | | |
| Associated Lab San | nples: | | 001, 10300007002, 008, 10300007009 | 10300007003 | 3, 103000070 |)4, 10 | 0300007005, | 1030000700 | 06, 10300 | 007007, |
| METHOD BLANK: | 192355 | 53 | | Mat | rix: Air | | | | | |
| Associated Lab San | nples: | | 001, 10300007002, 008, 10300007009 | 10300007003 | 3, 103000070 | 04, 10 | 0300007005, | 1030000700 | 06, 10300 | 007007, |
| | | | | Blank | Reportir | g | | | | |
| Paran | neter | | Units | Result | Limit | | Analyzed | d Qu | alifiers | |
| Benzene | | | ug/m3 | N | ID | 0.32 | 03/23/15 10 |):24 | | • |
| Ethylbenzene | | | ug/m3 | Ν | 1D | 4.4 | 03/23/15 10 |):24 | | |
| m&p-Xylene | | | ug/m3 | Ν | 1D | 1.8 | 03/23/15 10 |):24 | | |
| o-Xylene | | | ug/m3 | Ν | 1D | 4.4 | 03/23/15 10 |):24 | | |
| THC as Gas | | | ug/m3 | N | 1D | 60.8 | 03/23/15 10 |):24 | | |
| Toluene | | | ug/m3 | Ν | ID | 0.77 | 03/23/15 10 |):24 | | |
| | | SAMPLE: | 1923554 | | | | | | | |
| | | | | Spike | LCS | | LCS | % Rec | | |
| Paran | neter | | Units | Conc. | Result | ç | % Rec | Limits | Qua | lifiers |
| Benzene | | | ug/m3 | 32.5 | 37.3 | | 115 | 64-13 | | |
| Ethylbenzene | | | ug/m3 | 44.2 | 54.1 | | 122 | 71-13 | 36 | |
| m&p-Xylene | | | ug/m3 | 88.3 | 105 | | 119 | 71-13 | 34 | |
| o-Xylene | | | ug/m3 | 44.2 | 54.5 | | 123 | 75-13 | 34 | |
| THC as Gas | | | ug/m3 | 3520 | 3640 | | 103 | 66-13 | 35 | |
| Toluene | | | ug/m3 | 38.3 | 44.3 | | 116 | 70-12 | 29 | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300007

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

- 1M Sample was transferred from a sampling bag into a Summa Canister within 72 hours of collection
- 2M Sample was transferred from a sampling bag into a Summa Canister within 72 hours of collection.



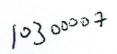
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10300007

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|-----------|-------------------|---------------------|
| 10300007001 | V-DSCHG-1 | TO-15 | AIR/22808 | | |
| 10300007002 | V-DSCHG-2 | TO-15 | AIR/22808 | | |
| 10300007003 | V-DSCHG-3 | TO-15 | AIR/22808 | | |
| 10300007004 | V-INT-1 | TO-15 | AIR/22808 | | |
| 10300007005 | V-INT-2 | TO-15 | AIR/22808 | | |
| 10300007006 | V-INT-3 | TO-15 | AIR/22808 | | |
| 10300007007 | V-INF-1 | TO-15 | AIR/22808 | | |
| 10300007008 | V-INF-2 | TO-15 | AIR/22808 | | |
| 10300007009 | V-INF-3 | TO-15 | AIR/22808 | | |

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



| Section Require | A d Client Information: | Section Required | | ct Info | ormation: | | | | | | ion C ice In | ; iforma | ation: | | | | | | | | | | | | Γ | Pa | ge : | 1 | Of | 1 |
|--------------------|--|--------------------------------------|---------------------------|-----------------------------|-----------------|-------------------|-------------------|----------|---------------------------|----------|-----------------|-------------|--------|----------------|----------|----------|---------------|--|-----------|--------|------------|----------------|------------|-------|------|-------|------------------|----------------------|--------------------------------|----------------|
| Compar | y: Cardno ATC | Report To | _ | A DESCRIPTION OF THE OWNER. | attler | | | | | Atter | - | | | | - | | | | | - | | | | | - | | 1 | | | |
| Address | 7070 SW Fir Loop, Suite 100 | Сору То | | eith F | | | | | | Com | pany | Name | | | - | | | | | | | | | | | | | | | |
| | Tigard, OR 97223 | | | | | | | | | Adda | ess: | | | | | | 0.15 | | 1.1.1 | | 35 | | | 0.50 | R | egula | tory A | gency | | |
| Email To | | Purchase | Order | No. | 031326 | 603B | | | | Pace | Quo | te Ref | erence |) : | 1999 | | | | | | | | | | | | SCAA | | | |
| Phone: | 503 430 6696 Fax: | Client Pr | oject ID | : AC | C 1396 | - P66 V | Vestlake | Mercer | | Pace | Proje | ect Ma | anage | : | Jen | ni Gr | OSS | | 1 | 5.00 | 1 | 4242 | X:13 | 2.35 | 12 | State | Loca | tion | | S./ (7) |
| Request | ed Due Date/TAT: 10 Day (Standard) | Containe | r Order | Numb | ber, | | | | | Pace | Profi | ile #: | | | | | | | | | | | | | | | WA | | | |
| | SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique Ar Other Tissue | ng Wabar DW WT Wabar WW t P | (see valid codes to left) | | ST | COLL | ECTED | ۹D | SAMPLE TEMP AT COLLECTION | ITAINERS | bev | P | rese | | | | Analyses Test | and the state of t | | equest | | | Eiter | | N) | | I Chlorine (Y/N) | | | |
| ITEM# | | | MATRIX CODE | - | DATE | TIME | DATE | TIME | SAMPLE T | | - | H2SO4 | P | NaOH | Na2S203 | Methanol | Anal | - | | | | | | | | | Residual | 6 | 01 | |
| 1 | V-DSCHG-1 | | A | _ | | | 03/18/15 | 12:25 | | | x | - | + | | • | - | - | x | \square | - | - | | | + | ++ | + | - | 2 | - 1 | |
| 2 | V-DSCHG-2 | 1000 | A | RG | | | 03/18/15 | 12:30 | | 3 | х | | | | | | | X | | | | | | | | | | 0 | 1 | |
| 3 | V-DSCHG-3 | | A | RG | | | 03/18/15 | 12:35 | | 2 | x | | | | | | | x | | | | | | | | | | Ö | 03 | |
| A | V-INT-1 | | | RG | | | 03/18/15 | 12:50 | | 2 | x | | | | | | | x | | | | | | T | П | | ٦ | 0 | 54 | |
| A COLUMN AND A | | | _ | - | | | | | | | | + | + | | | | - | | + | | + | | ti i | + | | - | - | | 55 | |
| 5. | V-INT-2 | | _ | RG | | | 03/18/15 | 12:45 | | | x | + | - | | | - | - | × | + | - | - | | | - | + | + | - | | | |
| 6 | V-INT-3 | | A | RG | | | 03/18/15 | 12:40 | | 2 | x | | | | | | | X | | | _ | | | 1 | | _ | 1 | | 26 | _ |
| 7 | V-INF-1 | | A | RG | | | 03/18/15 | 12:55 | | 2 | x | | | | | | | X | | | | | | | | | | D | 07 | |
| 8 | V-INF-2 | | A | - | | | 03/18/15 | 13:00 | | 2 | x | | | | | | | x | | | | | | | | | | 0 | 28 | |
| 2 | | | - | - | | | | | | | - | + | + | | | - | - | | + | + | - | + | | +- | ++ | + | - | 2 | 09 | |
| 9 | V-INF-3 | | A | RG | | | D3/18/15 | 13:05 | | 2 | x | - | - | | | - | - | X | | - | - | | - | + | + | -+- | - | | 09 | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TANK | | | | - | | | | | | | | | | | | | | | | | | | Í | | | | | | | |
| 12 | | | 133.374 | Ciertiniae | Sector Sector S | 1 | 1463-1464 A. 1983 | ENTER AN | 1 | 7.45 | - | 228 53 | 424.9 | 1000 | Sarata a | - | | Sec. | 195-7-5 | Deelas | UNCE UN | Steel and | | 2 2.2 | TIME | 580 S | No. or the | CARADIE | CONDITIO | ie - C |
| | ADDITIONAL COMMENTS | | RELI | NQUIS | SHED BY | AFFILIA | TION | DAT | | 記録 | IME | | | A | CCE | PTED | BJ/7 | 治罪 | | N | | | ATE | | LINE | 2.4 | | SAMPLE | CONDITION | |
| | | | | | | | | | | | 57.1 | | Ali | st | 1 | T | ~ | - | F | AVI | 5 | 8-1- | 8-15 | 11 | 545 | 5 12 | 26,1 | A/ | N | 14 |
| | | | | | | - | | | | | | - | A | A | μ. | | 20 | | | THE | - | | 1 | - | | _ | | N | TT | 11 |
| | | to | all a | TO S | 2 | PAC | E | 3/14 | 15 | 112 | OO | | 1 | ~ | n | M | 40 | 24 | - | | | 31 | 415 | 0 | 930 | 1 | Ams | N | 14 | Y |
| | | | - | | | | | | | | | | 1 | | | 181 | 1 | | | | | | | T | | | | | | ł. |
| | | | | | | | | | | - | 4 | | | 1920 | 100 | | | - | 0.00 | | 201 20-1 | - | | +- | | + | | - | - | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | - | | | - |
| | | | | | | SAMPLE | | NDSICK | AT | RE | | 1.1 | 1000 | | Se la | 24S | W. S.C. | | | A-3 | | No. | T AND | | | 2 for | | Ice | Custody Sealed Cooler (Y/N) | t |
| | | | | | | The second second | 一力一方和 | | 1 | 100 | 75- | | | 這種 | SIG | TLD SIL | | | Chis of | | Selectory. | and the second | interior C | 1.00 | | 142 | 0 | 6 | Sea | Inte |
| | | | | | | PR | INT Name | OF SAMPL | EK: | 1 | 1 | 1 | > | • | | | E | ward | Burna | acci | | | | | | | TEMP In C | Received on (Y/N) | ody er () | Samples Intact |
| | | | | | | SIC | NATURE | of SAMPL | ER | 1 | R | 1 | > | | | | | | DATE | Signe | ed: | | | 8/201 | - | | EW | Recei (Y/N) | Cust | am |

-

| Sample Condition Upon Receipt Courier: | mercial Pace 795333(6) Present? Yes Wrap Bubble Ba only) (*C): o 6*C Correction Factor | USPS Other: No ags Foam Corrected Temp or: | Seals In | ient tact? | Thermom. Use | Pace Minn #:103 | ij. Due Date: Temp | D7 Proj. Name: Blank rec: □Ye | s Zik |
|---|---|---|----------|---------------|---------------------------------------|-------------------------------------|-----------------------|--------------------------------------|---------|
| Upon Receipt Courier: Fed E: Commarking Number: S7 Ustody Seal on Cooler/Box Packing Material: Bubble mp. (TO17 and TO13 samples of emp should be above freezing to be of ice Received Blue Chain of Custody Present? | ATC - OR ix $\Box UPS$ mercial $\Box Pace$ 79533(6) Present? $\Box Yes$ Wrap $\Box Bubble Bac mly) (*C): \Box506°C Correction Factor$ | Other: No ags Foam Corrected Temp or: | Seals In | ient tact? | 10300 | Detional: Pro | ij. Due Date: Temp | Proj. Name: Blank rec: Ye | s |
| racking Number:S 7 ustody Seal on Cooler/Box P cking Material:Bubble imp. (TO17 and TO13 samples of emp should be above freezing to pe of ice ReceivedBlue Chain of Custody Present? | $795333(6)$ Present? Yes Wrap $Bubble Bases$ unly) (*C): $$ $o 6^{\circ}C$ Correction Factor | No No ags Foam Corrected Temp or: | | | Other: | | Temp | Blank rec: Ye | s Tak |
| cking Material: Bubble mp. (TO17 and TO13 samples of emp should be above freezing to pe of ice Received Blue Chain of Custody Present? | Wrap Bubble Ba | ags Foam Corrected Temp or: | | | Other: | | Temp | Blank rec: Ye | s 🕅 |
| mp. (TO17 and TO13 samples of emp should be above freezing to pe of ice Received Blue Chain of Custody Present? | only) (°C): | Corrected Temp or: | (°C): | one | | B88091216 | | | s |
| emp should be above freezing to pe of ice Received Blue Chain of Custody Present? | o 6°C Correction Facto | or: | | 6 | Thermom. Use | B88491216 | 7504 | | - 18.1. |
| | | | | | Date & Initials | d: B88A91325 of Person Examining | 21491 | □72337080 □80512447 R_314 | |
| Chain of Custody Filled Out? | | Yes | No | □n/A | 1. | | | | |
| | | Yes | No | □N/A | 2. | | | | |
| Chain of Custody Relinquished | 1? . | Yes | No | N/A. | 3. | | | | |
| Sampler Name and/or Signatur | re on COC? | Yes | No | □N/A | 4. | | | | |
| Samples Arrived within Hold Ti | | Yes | No | N/A | 5. 6. T-C | D.C. | | | |
| Short Hold Time Analysis (<72 | | Yes | No | | 6. 7-12 | | | | |
| Rush Turn Around Time Reque Sufficient Volume? | estear | Yes Yes | | | 8. | | | | |
| Correct Containers Used? | | Yes | No | | 9. | | | | |
| -Pace Containers Used? | | Yes | No | | | · . | | | |
| Containers Intact? | | Yes | No | □n/A | 10. V - 1 | NT-2 | flat | | |
| Media: arbit | | | • | | 11. | | | | |
| Sample Labels Match COC? |) | Yes | No | □N/A | 12. | | | | |
| Samples Received: | | | | | | | | | |
| Canisters | S | | Flow | Controller | 5 | | Stand A | Alone G | |
| Sample Number | Can ID | Sample N | umber | · · | Can ID | Sample | Number | Can ID | |
| | | | | | | | | | |
| | | | | | · · · · · · · · · · · · · · · · · · · | | ١ | | |
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| | | | | | | | | | |
| | | | | | | | | | |
| LIENT NOTIFICATION/RESOL Person Contacted | | | | | Date/Time: _ | | | ∐Yes ØNo | |
| Person Contacted Comments/Resolution | n: Two Tedla | is per se | imple | e, or | e remo | uns for | V-INT | -2 | |
| | | | 4 | | | | | | |
| | | | | | | | | | |

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

January 28, 2015

Kyle Sattler Cardno ATC 7070 SW Fir Loop Suite 100 Portland, OR 97223

RE: Project: AOC 1396-P66 Westlake/Mercer Pace Project No.: 10294897

Dear Kyle Sattler:

Enclosed are the analytical results for sample(s) received by the laboratory on January 23, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

JENNI GROSS

Jennifer Gross jennifer.gross@pacelabs.com Project Manager

Enclosures

cc: Keith Fox, Cardno ATC





Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

CERTIFICATIONS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294897

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926.01 Alaska Certification #: UST-078 Alaska Certification #MN00064 Alabama Certification #40770 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #:14-008r Georgia Certification #: 959 Georgia EPD #: Pace Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137 Mississippi Certification #: Pace Montana Certification #: MT0092 Nevada Certification #: MN_00064 Nebraska Certification #: Pace New Jersey Certification #: MN-002 New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 West Virginia Certification #: 382 West Virginia DHHR #:9952C Wisconsin Certification #: 999407970



SAMPLE SUMMARY

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294897

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|-------------|-----------|--------|----------------|----------------|
| 10294897001 | W-DSCHG | Water | 01/21/15 11:50 | 01/23/15 09:45 |
| 10294897002 | W-OUT-WC1 | Water | 01/21/15 11:55 | 01/23/15 09:45 |
| 10294897003 | W-INF-WS1 | Water | 01/21/15 12:00 | 01/23/15 09:45 |



SAMPLE ANALYTE COUNT

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10294897

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|----------|----------|----------------------|------------|
| 10294897001 | W-DSCHG | NWTPH-Gx | LLC | 2 | PASI-M |
| | | EPA 8260 | AJC | 7 | PASI-M |
| 10294897002 | W-OUT-WC1 | NWTPH-Gx | LLC | 2 | PASI-M |
| | | EPA 8260 | AJC | 7 | PASI-M |
| 10294897003 | W-INF-WS1 | NWTPH-Gx | LLC | 2 | PASI-M |
| | | EPA 8260 | AJC | 7 | PASI-M |



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294897

| Sample: W-DSCHG | Lab ID: 102948970 | 01 Collected: 01/21/ | 15 11:50 | Received: 0 | 1/23/15 09:45 N | Aatrix: Water | |
|--|-----------------------|----------------------|----------|-------------|-----------------|---------------|-----|
| Parameters | Results Un | its Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| NWTPH-Gx GCV | Analytical Method: NV | VTPH-Gx | | | | | |
| TPH as Gas Surrogates | ND ug/L | 100 | 1 | | 01/27/15 02:34 | | |
| a,a,a-Trifluorotoluene (S) | 87 %. | 50-150 | 1 | | 01/27/15 02:34 | 98-08-8 | |
| 8260 MSV UST | Analytical Method: EF | PA 8260 | | | | | |
| Benzene | ND ug/L | 1.0 | 1 | | 01/25/15 13:55 | 71-43-2 | |
| Ethylbenzene | ND ug/L | 1.0 | 1 | | 01/25/15 13:55 | 100-41-4 | |
| Toluene | ND ug/L | 1.0 | 1 | | 01/25/15 13:55 | 108-88-3 | |
| Xylene (Total) | ND ug/L | 3.0 | 1 | | 01/25/15 13:55 | 1330-20-7 | |
| Surrogates | | | | | | | |
| 1,2-Dichloroethane-d4 (S) | 101 %. | 75-125 | 1 | | 01/25/15 13:55 | | |
| Toluene-d8 (S) | 103 %. | 75-125 | 1 | | 01/25/15 13:55 | | |
| 4-Bromofluorobenzene (S) | 104 %. | 75-125 | 1 | | 01/25/15 13:55 | 460-00-4 | |
| Sample: W-OUT-WC1 | Lab ID: 102948970 | 02 Collected: 01/21/ | 15 11:55 | Received: 0 | 1/23/15 09:45 N | Atrix: Water | |
| Parameters | Results Un | its Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| NWTPH-Gx GCV | Analytical Method: NV | VTPH-Gx | | | | | |
| TPH as Gas Surrogates | ND ug/L | 100 | 1 | | 01/27/15 02:55 | | |
| a,a,a-Trifluorotoluene (S) | 88 %. | 50-150 | 1 | | 01/27/15 02:55 | 98-08-8 | |
| 8260 MSV UST | Analytical Method: EF | PA 8260 | | | | | |
| Benzene | ND ug/L | 1.0 | 1 | | 01/25/15 14:12 | 71-43-2 | |
| Ethylbenzene | ND ug/L | 1.0 | 1 | | 01/25/15 14:12 | 100-41-4 | |
| Foluene | ND ug/L | 1.0 | 1 | | 01/25/15 14:12 | 108-88-3 | |
| Kylene (Total) | ND ug/L | 3.0 | 1 | | 01/25/15 14:12 | 1330-20-7 | |
| <i>Surrogates</i> 1,2-Dichloroethane-d4 (S) | 101 %. | 75-125 | 1 | | 01/25/15 14:12 | 17060-07-0 | |
| Toluene-d8 (S) | 104 %. | 75-125 | 1 | | 01/25/15 14:12 | | |
| 4-Bromofluorobenzene (S) | 103 %. | 75-125 | 1 | | 01/25/15 14:12 | | |
| | | | · | | 0 | | |
| Sample: W-INF-WS1 | Lab ID: 102948970 | 03 Collected: 01/21/ | 15 12:00 | Received: 0 | 1/23/15 09:45 N | Aatrix: Water | |
| Parameters | Results Un | its Report Limit | DF | Prepared | Analyzed | CAS No. | Qua |
| NWTPH-Gx GCV | Analytical Method: NV | VTPH-Gx | | | | | |
| TPH as Gas Surrogates | 827 ug/L | 100 | 1 | | 01/27/15 03:15 | | |
| a,a,a-Trifluorotoluene (S) | 89 %. | 50-150 | 1 | | 01/27/15 03:15 | 98-08-8 | |
| 3260 MSV UST | Analytical Method: EF | PA 8260 | | | | | |
| Benzene | 10.2 ug/L | 1.0 | 1 | | 01/25/15 14:28 | 71-43-2 | |
| Ethylbenzene | 11.4 ug/L | 1.0 | 1 | | 01/25/15 14:28 | 100 /1 / | |

REPORT OF LABORATORY ANALYSIS

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Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294897

| Sample: W-INF-WS1 | Lab ID: | 10294897003 | Collected: 01/21/1 | 5 12:00 | Received: 0' | 1/23/15 09:45 N | Aatrix: Water | |
|-------------------------------------|------------|-----------------|--------------------|---------|--------------|-----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 8260 MSV UST | Analytical | Method: EPA 826 | 60 | | | | | |
| Toluene | 82. | 1 ug/L | 1.0 | 1 | | 01/25/15 14:28 | 108-88-3 | |
| Xylene (Total) <i>Surrogates</i> | 86. | 2 ug/L | 3.0 | 1 | | 01/25/15 14:28 | 1330-20-7 | |
| 1,2-Dichloroethane-d4 (S) | 9 | 9 %. | 75-125 | 1 | | 01/25/15 14:28 | 17060-07-0 | |
| Toluene-d8 (S) | 10 | 3 %. | 75-125 | 1 | | 01/25/15 14:28 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 10 | 6 %. | 75-125 | 1 | | 01/25/15 14:28 | 460-00-4 | |



| | AOC 1396-P66 \ | Westlake/Mercer | | | | | | | | | |
|--------------------------------------|----------------|--------------------------|----------------|---------------|---------------------------|-----------|---------------|------------------|------|------------|------------|
| Pace Project No.: | 10294897 | | | | | | | | | | |
| QC Batch: | GCV/13263 | | Analys | s Method | l: N\ | WTPH-G | iх | | | | |
| QC Batch Method: | NWTPH-Gx | | Analys | s Descrip | otion: N | WTPH-G | ax Water | | | | |
| Associated Lab Samp | oles: 1029489 | 97001, 10294897002, | 10294897 | 003 | | | | | | | |
| METHOD BLANK: | 1888116 | | N | latrix: Wa | ater | | | | | | |
| Associated Lab Samp | oles: 1029489 | 97001, 10294897002, | 10294897 | 003 | | | | | | | |
| | | | Blank | F | Reporting | | | | | | |
| Parame | eter | Units | Result | | Limit | Ana | alyzed | Qualif | iers | | |
| TPH as Gas | | ug/L | | ND | 100 | 01/27/ | 15 01:54 | | | | |
| a,a,a-Trifluorotoluene | (S) | %. | | 90 | 50-150 | 01/27/ | 15 01:54 | | | | |
| LABORATORY CON | | & LCSD: 1888118 Units | Spike Conc. | LCS Result | 1888119 LCSD Result | LCS | LCSD % Rec | % Rec Limits | RPD | Max RPD | Qualifiers |
| | | | | | | | | | | | |
| TPH as Gas a,a,a-Trifluorotoluene | (S) | ug/L %. | 1000 | 104 | 0 1010 | 104 94 | - | 65-125 50-150 | | 3 20 | |
| MATRIX SPIKE SAM | PLE: | 1889758 | | | | | | | | | |
| | | | 1029462 | 28004 | Spike | MS | | MS | % | Rec | |
| Parame | eter | Units | Resu | ult | Conc. | Resu | lt | % Rec | Li | mits | Qualifiers |
| TPH as Gas | | ug/L | | 207 | 1000 | | 1140 | 9 | 3 | 50-150 | |
| a,a,a-Trifluorotoluene | (S) | %. | | | | | | 8 | 7 | 50-150 | |
| SAMPLE DUPLICATE | E: 1889757 | | | | | | | | | | |
| | | | 10294628 | | Dup | | | Max | | | |
| Parame | eter | Units | Result | : | Result | RF | D | RPD | Q | ualifiers | |
| TPH as Gas | | ug/L | į | 5650 | 5660 | | 0 | | 30 | | |
| a,a,a-Trifluorotoluene | (0) | %. | | 93 | 99 | | 7 | | | | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294897

QC Batch: MSV/30216 QC Batch Method: EPA 8260 Analysis Method:

Analysis Description: 8260 MSV UST-WATER

Matrix: Water

EPA 8260

Associated Lab Samples: 10294897001, 10294897002, 10294897003

METHOD BLANK: 1887831

| Associated Lab Samples: | 10294897001, 10294897002 | , 10294897003 | | | |
|---------------------------|--------------------------|---------------|-----------|----------------|------------|
| | | Blank | Reporting | | |
| Parameter | Units | Result | Limit | Analyzed | Qualifiers |
| Benzene | ug/L | ND | 1.0 | 01/25/15 12:49 | |
| Ethylbenzene | ug/L | ND | 1.0 | 01/25/15 12:49 | |
| Toluene | ug/L | ND | 1.0 | 01/25/15 12:49 | |
| Xylene (Total) | ug/L | ND | 3.0 | 01/25/15 12:49 | |
| 1,2-Dichloroethane-d4 (S) | %. | 99 | 75-125 | 01/25/15 12:49 | |
| 4-Bromofluorobenzene (S) | %. | 102 | 75-125 | 01/25/15 12:49 | |
| Toluene-d8 (S) | %. | 102 | 75-125 | 01/25/15 12:49 | |

LABORATORY CONTROL SAMPLE: 1887832

| | | Spike | LCS | LCS | % Rec | |
|---------------------------|-------|-------|--------|-------|--------|------------|
| Parameter | Units | Conc. | Result | % Rec | Limits | Qualifiers |
| Benzene | ug/L | 20 | 20.2 | 101 | 42-143 | |
| Ethylbenzene | ug/L | 20 | 18.2 | 91 | 75-125 | |
| Toluene | ug/L | 20 | 18.5 | 92 | 74-125 | |
| Xylene (Total) | ug/L | 60 | 57.8 | 96 | 75-125 | |
| 1,2-Dichloroethane-d4 (S) | %. | | | 102 | 75-125 | |
| 4-Bromofluorobenzene (S) | %. | | | 103 | 75-125 | |
| Toluene-d8 (S) | %. | | | 103 | 75-125 | |

| MATRIX SPIKE SAMPLE: | 1888143 | | | | | | |
|---------------------------|---------|-------------|-------|--------|-------|--------|------------|
| | | 10294897001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| Benzene | ug/L | ND | 20 | 23.3 | 117 | 30-150 | |
| Ethylbenzene | ug/L | ND | 20 | 20.9 | 105 | 55-139 | |
| Toluene | ug/L | ND | 20 | 21.4 | 107 | 52-148 | |
| Xylene (Total) | ug/L | ND | 60 | 65.0 | 108 | 54-144 | |
| 1,2-Dichloroethane-d4 (S) | %. | | | | 98 | 75-125 | |
| 4-Bromofluorobenzene (S) | %. | | | | 102 | 75-125 | |
| Toluene-d8 (S) | %. | | | | 105 | 75-125 | |

SAMPLE DUPLICATE: 1888144

| Parameter | Units | 10294897002 Result | Dup Result | RPD | Max RPD | Qualifiers |
|-------------------------|--------------|-----------------------|---------------|-----|------------|------------|
| | | | ND | | | |
| Benzene Ethylbenzene | ug/L ug/L | ND | ND | | 30 30 | |
| Toluene | ug/L | ND | ND | | 30 | |
| Xylene (Total) | ug/L | ND | ND | | 30 | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294897

| SAMPLE DUPLICATE: 1888144 | | | | | | |
|---------------------------|-------|-------------|--------|-----|-----|------------|
| | | 10294897002 | Dup | | Max | |
| Parameter | Units | Result | Result | RPD | RPD | Qualifiers |
| 1,2-Dichloroethane-d4 (S) | %. | 101 | 104 | 3 | | |
| 4-Bromofluorobenzene (S) | %. | 103 | 105 | 1 | | |
| Toluene-d8 (S) | %. | 104 | 103 | 1 | | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10294897

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10294897

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|-----------|-------------------|---------------------|
| 10294897001 | W-DSCHG | NWTPH-Gx | GCV/13263 | | |
| 10294897002 | W-OUT-WC1 | NWTPH-Gx | GCV/13263 | | |
| 10294897003 | W-INF-WS1 | NWTPH-Gx | GCV/13263 | | |
| 10294897001 | W-DSCHG | EPA 8260 | MSV/30216 | | |
| 10294897002 | W-OUT-WC1 | EPA 8260 | MSV/30216 | | |
| 10294897003 | W-INF-WS1 | EPA 8260 | MSV/30216 | | |

| | | | | | 1.1 | 12 | 11- | 10 | | 8 | 1 | 5. 6 35 | 10 | 4 | - 33 | 2 | | ITEM# | | Racuest | Phone: | | Address | Compan | Section A Required | - |
|------------------------------|-----------|---------|--------------|--------|--------------------|----------|-----|--------------|------------|------------|---|----------------|------------|------------------|----------|----------|----------|--|--|----------------------------------|--|---|--------------------------------------|---------------|--|---|
| | | | | | A SLIBBIO TWOILDER | · · · | | | | | | | | | | | W-DSCHG | SAMPLE ID One Charactor por box. (A-Z, 0-9), -) Sample lds must be unique | | ad Due Date/TAT 10 Day (Standam) | 503 430 6696 Fax | Ilgard, UK 97223 | Address: 7070 SW Fir Loop, Suite 100 | v: Cardno ATC | A d Client Information: | |
| | | Æ | c Jenni | | Sec. | | | | | | | | | | ~ | 3 | 4 | The supervised of the supervis | | | Cient Project 10: AOC 1396 - P66 Westlake/Menter | | Copy Ta: | | Saction B Required Project Information: | |
| | | $ _{c}$ | 5. | | No. | - | ╎ | ┢ | ╢─ | ┢ | | ┢ | | - | MT G | _ | мце | MATRIX CODE (see vaEd codes to left) BAMPLE TYPE (G=GRAB C=COMP) | | | A | | Cetth F | vie S | 호 돌 | |
| | | | | | | | | | | | | | | | | | 01/21/15 | DATE | | \$ | C 1396 - | 22222000 | Keith Fox | attler | mation | |
| 60 TO 10 | <u>بر</u> | | 8 | | 目 | _ | - | | | | | - | - | | 12:00 | 1:56 | 11:50 | | ┝ | - | | - | ┢ | | | |
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| Burnacci DATE Signed: | | | ľ | Phil | | - | | ╉ | ┿ | + | + | - | | - | - | | ┟── | | | | | | | | | s mu |
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| | | + | <u>w</u> | Pr - | \$ | - | Т | Τ- | Т | T - | 1 | Т | Т | T | 1 | | | Residual Chlorine (Y/N) | | | | 100 | | | | ~ |
| Raceived on Ice (Y/N) | | | 1 | | | | | | | | | | | | 2 | 2 | 20 | | | | | NA CO | 19-19 () · · · · | | - | 22 |
| Custody Seal Cocler (Y/N) | | | 4 | | SANDIE CONDITIONS | | | | | | | | | | ψ | ocn | 5 | | | | | | | | ð. | اصب الملها- |
| Samples Inte (Y/N) | ا س | | . 1 | 1 | 1 . | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | | 1.11 | 1 | 1 | 11 | 1 | | | |

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| Pace Analy | tical [®] | Sample | e Condi Do | ument N tion Upo icument I N-L-213-r | n Receip No.: | t Form | | nent Revised: Page 1 of Issuing Autho Minnesota Qu | 1 | |
|---|-------------------------|--|---------------|---|------------------|----------------------------|--------|---|---|-----------|
| Client Name Upon Receipt | A | | - | P | roject # | · W |)#:1 | 1029 | 4897 | |
| urier: DFed Ex Commercial DPace racking Number: <u>6179</u> | DUPS Speed 5330 9 | | SPS ther: | | ent | | 94897 | | | |
| ustody Seal on Cooler/Box Prese | nt? ØYes | No | 56 | eals Intac | #? 🛛 | res 🔲 No | Option | al: Proj. Du | e Date: Pr | oj. Name: |
| acking Material: Bubble Wra | ap "ØBubbl | e Bags [| None | | her: | | | Temp Bla | ank? 🛛 Yes | |
| rermom. Used: DB88A913051641 boler Temp Read (°C): <u>2.1</u> | BBBA91 Cooler Te | 12167504 132521491 mp Correcte on Factor: | ed (*C): | | | | | ue Frozen?. | n ice, cooling pr Yes i ents: <u>1</u> ~2 | No 🖂 🕅 |
| | | | 12.1 | | | | | Comments | | 3-15 |
| Chain of Custody Present? | | | Ves | ∏No | | 1. | | | | |
| Chain of Custody Filled Out? | | · · · · | Ves | No | | 2. | | | | |
| Chain of Custody Relinguished? | | _ | Pres | | | 3. | | | | |
| Sampler Name and/or Signature o | n COC? | | Elves | No | <u>_</u> | 4. | | | <u> </u> | |
| Samples Arrived within Hold Time | ? | | Ves | | | 5. | | | | |
| Short Hold Time Analysis (<72 hr) | 1 | | Yes | | | 6. | | | | |
| Rush Turn Around Time Requeste | :d? | | ∏Yes | (2No | | 7. | | | | |
| Sufficient Volume? | | | Aves | □ No | _ <u>_</u> | 8 | | | | |
| Correct Containers Used? | | | V ves | No | | 9. | | | | |
| -Pace Containers Used? | | | Pres, | No. | - <u>2</u> | | | | | |
| Containers Intact? | | | Yes | No | | <u>10</u> . | | | | |
| Filtered Volume Received for Diss | olved Tests? | | □ Yes | No | <u> </u> | 11. | | | | |
| Sample Labels Match COC? | | | ØYes | No | | 12. | | | | |
| -Includes Date/Time/ID/Analysi All containers needing acid/base p . checked? | | e been | □Yes | No | | 13. | | H ₂ SO ₄ | ПизОн | нсі |
| All containers needing preservatio compliance with EPA recommenda (HNO ₃ , H ₂ SO ₄ , <u>H</u> Cl<2; NaOH >9 Sui | ation? | | □Yes | ⊡No | N/A | Sample # | | | | |
| Exceptions: OA Coliform, TDC, O DRO/8015 (water) DOC | | | Ves | ∐ No | | Initial when completed: | | | t of added ervative: | |
| Headspace in VOA Viais (>6mm)? | | | □Yes | | | 14. | | | <u> </u> | |
| Trip Blank Present? | | | □Yes | N N0 | NA | 15. | | | | |
| Trip Blank Custody Seals Present? | | | □Yes | No | N/A | | | | | |
| Pace Trip Blank Lot # (if purchased | l): | | | | | | | | | |
| LIENT NOTIFICATION/RESOLUTIO | N | <u></u> | | | | | Fiel | d Data Reguli | red? Yes | No |
| Person Contacted: | | | | | Da | te/Time: | | | | · |
| Comments/Resolution: | | | | | | | | ······································ | | |
| | | | | | | | | | | |

Note: Whenever there is a discrepancy affecting florit) Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out a hold, incorrect preservative, out of temp, incorrect sontainers)



Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

March 13, 2015

Kyle Sattler Cardno ATC 7070 SW Fir Loop Suite 100 Portland, OR 97223

RE: Project: AOC 1396-P66 Westlake/Mercer Pace Project No.: 10298090

Dear Kyle Sattler:

Enclosed are the analytical results for sample(s) received by the laboratory on February 27, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

JENNI GROSS

Jennifer Gross jennifer.gross@pacelabs.com Project Manager

Enclosures

cc: Keith Fox, Cardno ATC





Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

CERTIFICATIONS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10298090

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926.01 Alaska Certification #: UST-078 Alaska Certification #MN00064 Alabama Certification #40770 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #:14-008r Georgia Certification #: 959 Georgia EPD #: Pace Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137 Mississippi Certification #: Pace Montana Certification #: MT0092 Nevada Certification #: MN_00064 Nebraska Certification #: Pace New Jersey Certification #: MN-002 New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 West Virginia Certification #: 382 West Virginia DHHR #:9952C Wisconsin Certification #: 999407970



SAMPLE SUMMARY

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10298090

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|-------------|-----------|--------|----------------|----------------|
| 10298090001 | W-DSCHG | Water | 02/25/15 09:10 | 02/27/15 09:55 |
| 10298090002 | W-OUT-WC1 | Water | 02/25/15 09:15 | 02/27/15 09:55 |
| 10298090003 | W-INF-WS1 | Water | 02/25/15 09:20 | 02/27/15 09:55 |



SAMPLE ANALYTE COUNT

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10298090

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|----------|----------|----------------------|------------|
| 10298090001 | W-DSCHG | NWTPH-Gx | LLC | 2 | PASI-M |
| | | EPA 8260 | AJC | 7 | PASI-M |
| 10298090002 | W-OUT-WC1 | NWTPH-Gx | LLC | 2 | PASI-M |
| | | EPA 8260 | AJC | 7 | PASI-M |
| 10298090003 | W-INF-WS1 | NWTPH-Gx | LLC | 2 | PASI-M |
| | | EPA 8260 | AJC | 7 | PASI-M |



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10298090

| Sample: W-DSCHG | Lab ID: 102 | 98090001 | Collected: 02/25/1 | 5 09:10 | Received: (| 02/27/15 09:55 | Matrix: Water | |
|--|-----------------|-------------|--------------------|---------|-------------|----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| NWTPH-Gx GCV | Analytical Meth | nod: NWTP | H-Gx | | | | | |
| TPH as Gas Surrogates | ND | ug/L | 100 | 1 | | 03/05/15 20:3 | 2 | |
| a,a,a-Trifluorotoluene (S) | 89 | %. | 50-150 | 1 | | 03/05/15 20:3 | 2 98-08-8 | |
| 8260 MSV UST | Analytical Meth | nod: EPA 82 | 260 | | | | | |
| Benzene | ND | ug/L | 1.0 | 1 | | 03/04/15 06:1 | 6 71-43-2 | |
| Ethylbenzene | ND | ug/L | 1.0 | 1 | | 03/04/15 06:1 | 6 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 03/04/15 06:1 | 6 108-88-3 | |
| Xylene (Total) | ND | ug/L | 3.0 | 1 | | 03/04/15 06:1 | 6 1330-20-7 | |
| Surrogates | 102 | %. | 75-125 | 1 | | 03/04/15 06:1 | 6 17060-07-0 | |
| 1,2-Dichloroethane-d4 (S) | 102 | %. | 75-125 | 1 | | 03/04/15 06:1 | | |
| Toluene-d8 (S) 4-Bromofluorobenzene (S) | 100 | %. %. | 75-125 | 1 | | 03/04/15 06:1 | | |
| 4-Bromoliuorobenzene (3) | 100 | 70. | 75-125 | I | | 03/04/13 00.1 | 6 460-00-4 | |
| Sample: W-OUT-WC1 | Lab ID: 102 | 98090002 | Collected: 02/25/1 | 5 09:15 | Received: (| 02/27/15 09:55 | Matrix: Water | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| NWTPH-Gx GCV | Analytical Meth | nod: NWTP | H-Gx | | | | | |
| TPH as Gas Surrogates | ND | ug/L | 100 | 1 | | 03/05/15 20:5 | 3 | |
| a,a,a-Trifluorotoluene (S) | 89 | %. | 50-150 | 1 | | 03/05/15 20:5 | 3 98-08-8 | |
| 8260 MSV UST | Analytical Meth | nod: EPA 82 | 260 | | | | | |
| Benzene | ND | ug/L | 1.0 | 1 | | 03/04/15 06:3 | 1 71-43-2 | |
| Ethylbenzene | ND | ug/L | 1.0 | 1 | | 03/04/15 06:3 | 1 100-41-4 | |
| Toluene | ND | ug/L | 1.0 | 1 | | 03/04/15 06:3 | 1 108-88-3 | |
| Xylene (Total) | ND | ug/L | 3.0 | 1 | | 03/04/15 06:3 | 1 1330-20-7 | |
| Surrogates | 00 | 0/ | 75 405 | 4 | | 00/04/45 00:0 | 4 47000 07 0 | |
| 1,2-Dichloroethane-d4 (S) | 98 | %. | 75-125 | 1 | | | 1 17060-07-0 | |
| Toluene-d8 (S) | 101 | %. | 75-125 | 1 | | 03/04/15 06:3 | | |
| 4-Bromofluorobenzene (S) | 108 | %. | 75-125 | 1 | | 03/04/15 06:3 | 1 460-00-4 | |
| Sample: W-INF-WS1 | Lab ID: 102 | 98090003 | Collected: 02/25/1 | 5 09:20 | Received: (| 02/27/15 09:55 | Matrix: Water | |
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| NWTPH-Gx GCV | Analytical Meth | nod: NWTP | H-Gx | | | | | |
| TPH as Gas Surrogates | ND | ug/L | 100 | 1 | | 03/05/15 21:1 | 3 | |
| a,a,a-Trifluorotoluene (S) | 87 | %. | 50-150 | 1 | | 03/05/15 21:1 | 3 98-08-8 | |
| 8260 MSV UST | Analytical Meth | nod: EPA 82 | 260 | | | | | |
| Benzene | ND | ug/L | 1.0 | 1 | | 03/04/15 06:4 | 6 71-43-2 | |
| | | | | | | 00/04/45 00.4 | 0 400 44 4 | |

REPORT OF LABORATORY ANALYSIS

1.0 1

ND

ug/L

Ethylbenzene

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03/04/15 06:46 100-41-4



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10298090

| Sample: W-INF-WS1 | Lab ID: 1 | 10298090003 | Collected: 02/25/1 | 5 09:20 | Received: 02 | 2/27/15 09:55 I | Matrix: Water | |
|---------------------------|--------------|-----------------|--------------------|---------|--------------|-----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 8260 MSV UST | Analytical M | /lethod: EPA 82 | 260 | | | | | |
| Toluene | ND | ug/L | 1.0 | 1 | | 03/04/15 06:46 | 108-88-3 | |
| Xylene (Total) | ND | ug/L | 3.0 | 1 | | 03/04/15 06:46 | 1330-20-7 | |
| Surrogates | | | | | | | | |
| 1,2-Dichloroethane-d4 (S) | 102 | %. | 75-125 | 1 | | 03/04/15 06:46 | 17060-07-0 | |
| Toluene-d8 (S) | 99 | %. | 75-125 | 1 | | 03/04/15 06:46 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 104 | %. | 75-125 | 1 | | 03/04/15 06:46 | 460-00-4 | |



| , | 1396-P66 West 8090 | lake/Mercer | | | | | | | | | |
|----------------------------|-----------------------|-----------------|-----------|-----------|---------------|----------|----------------------|----------|-----|------------|------------|
| | :V/13418 | | - | s Method | | VTPH-G | x | | | | |
| QC Batch Method: NV | /TPH-Gx | | Analysis | s Descrip | otion: NV | VTPH-G | x Water | | | | |
| Associated Lab Samples: | 10298090007 | 1, 10298090002, | 102980900 | 03 | | | | | | | |
| METHOD BLANK: 1910 | 0690 | | М | atrix: Wa | ater | | | | | | |
| Associated Lab Samples: | 10298090007 | 1, 10298090002, | | | | | | | | | |
| Devenueter | | Linita | Blank | | Reporting | A | ام م س | Qualify | | | |
| Parameter | | Units | Result | | Limit | | lyzed | Qualifie | ers | | |
| TPH as Gas | | ug/L %. | | ND 90 | 100 50-150 | | 15 11:26 15 11:26 | | | | |
| a,a,a-Trifluorotoluene (S) | | 70. | | 90 | 50-150 | 03/05/ | 15 11.20 | | | | |
| METHOD BLANK: 1910 | 0691 | | M | atrix: Wa | ater | | | | | | |
| Associated Lab Samples: | 10298090007 | 1, 10298090002, | 102980900 | 03 | | | | | | | |
| | | | Blank | F | Reporting | | | | | | |
| Parameter | | Units | Result | | Limit | Ana | lyzed | Qualifie | ers | | |
| TPH as Gas | | ug/L | | ND | 100 | | 5 15:08 | | _ | | |
| a,a,a-Trifluorotoluene (S) | | %. | | 88 | 50-150 | 03/05/^ | 5 15:08 | | | | |
| LABORATORY CONTRO | L SAMPLE & LC | SD: 1910692 | | | 1910693 | | | | | | |
| | | | Spike | LCS | LCSD | LCS | LCSD | % Rec | | Max | |
| Parameter | | Units | Conc. | Result | Result | % Rec | % Rec | Limits | RPD | RPD | Qualifiers |
| TPH as Gas | | ug/L | 1000 | 107 | 0 999 | 107 | 100 | 65-125 | | 6 20 | |
| a,a,a-Trifluorotoluene (S) | | %. | | | | 95 | 84 | 50-150 | | | |
| MATRIX SPIKE SAMPLE | : 19 | 911697 | | | | | | | | | |
| | | | 1029777 | 1002 | Spike | MS | | MS | | % Rec | |
| Parameter | | Units | Resu | lt | Conc. | Resul | t | % Rec | | Limits | Qualifiers |
| TPH as Gas | | ug/L | | 9050 | 20000 | 2 | 9300 | 101 | | 50-150 | |
| a,a,a-Trifluorotoluene (S) | | %. | | | | | | 98 | 3 | 50-150 | |
| SAMPLE DUPLICATE: | 1911698 | | | | | | | | | | |
| | | | 102977710 | | Dup | | | Max | | | |
| Parameter | | Units | Result | | Result | RP | D | RPD | | Qualifiers | |
| TPH as Gas | | ug/L | 6 | 780 | 6670 | | 2 | | 30 | | |
| a,a,a-Trifluorotoluene (S) | | %. | | 89 | 90 | | 1 | | | | |
| SAMPLE DUPLICATE: | 1911699 | | | | | | | | | | |
| | | | 10297771 | 004 | Dup | | | Max | | | |
| Parameter | | Units | Result | | Result | RP | D | RPD | | Qualifiers | |
| TPH as Gas | | ug/L | 27 | 300 | 25000 | | 9 | | 30 | | |
| a,a,a-Trifluorotoluene (S) | | %. | | 90 | 88 | | 2 | | | | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Matrix: Water

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10298090

| QC Batch: | MSV/30634 |
|------------------|-----------|
| QC Batch Method: | EPA 8260 |

Analysis Method:

EPA 8260 Analysis Description: 8260 MSV UST-WATER

10298090001, 10298090002, 10298090003 Associated Lab Samples:

METHOD BLANK: 1910258

| Associated Lab Samples: | 10298090001, 10298090002, 2 | 0298090003 | | | |
|---------------------------|-----------------------------|------------|-----------|----------------|------------|
| | | Blank | Reporting | | |
| Parameter | Units | Result | Limit | Analyzed | Qualifiers |
| Benzene | ug/L | ND | 1.0 | 03/04/15 05:03 | |
| Ethylbenzene | ug/L | ND | 1.0 | 03/04/15 05:03 | |
| Toluene | ug/L | ND | 1.0 | 03/04/15 05:03 | |
| Xylene (Total) | ug/L | ND | 3.0 | 03/04/15 05:03 | |
| 1,2-Dichloroethane-d4 (S) | %. | 97 | 75-125 | 03/04/15 05:03 | |
| 4-Bromofluorobenzene (S) | %. | 106 | 75-125 | 03/04/15 05:03 | |
| Toluene-d8 (S) | %. | 99 | 75-125 | 03/04/15 05:03 | |

LABORATORY CONTROL SAMPLE: 1910259

| | | Spike | LCS | LCS | % Rec | |
|---------------------------|-------|-------|--------|-------|--------|------------|
| Parameter | Units | Conc. | Result | % Rec | Limits | Qualifiers |
| Benzene | ug/L | 20 | 22.5 | 113 | 42-143 | |
| Ethylbenzene | ug/L | 20 | 20.5 | 102 | 75-125 | |
| Toluene | ug/L | 20 | 22.6 | 113 | 74-125 | |
| Xylene (Total) | ug/L | 60 | 66.3 | 110 | 75-125 | |
| 1,2-Dichloroethane-d4 (S) | %. | | | 99 | 75-125 | |
| 4-Bromofluorobenzene (S) | %. | | | 102 | 75-125 | |
| Toluene-d8 (S) | %. | | | 99 | 75-125 | |

MATRIX SPIKE SAMPLE:

1911388

| Parameter | Units | 10297995001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---------------------------|-------|-----------------------|----------------|--------------|-------------|-----------------|------------|
| Benzene | ug/L | ND | 20 | 21.2 | 106 | 30-150 | |
| Ethylbenzene | ug/L | ND | 20 | 19.1 | 95 | 55-139 | |
| Toluene | ug/L | ND | 20 | 20.8 | 104 | 52-148 | |
| Xylene (Total) | ug/L | ND | 60 | 61.6 | 103 | 54-144 | |
| 1,2-Dichloroethane-d4 (S) | %. | | | | 101 | 75-125 | |
| 4-Bromofluorobenzene (S) | %. | | | | 104 | 75-125 | |
| Toluene-d8 (S) | %. | | | | 99 | 75-125 | |

SAMPLE DUPLICATE: 1911389

| | | 10297995002 | Dup | | Max | |
|----------------|-------|-------------|--------|-----|-----|------------|
| Parameter | Units | Result | Result | RPD | RPD | Qualifiers |
| Benzene | ug/L | ND | ND | | 30 | |
| Ethylbenzene | ug/L | ND | ND | | 30 | |
| Toluene | ug/L | ND | ND | | 30 | |
| Xylene (Total) | ug/L | ND | ND | | 30 | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10298090

| SAMPLE DUPLICATE: 1911389 | | 10297995002 | Dup | | Max | |
|---------------------------|-------|-------------|--------|-----|-----|------------|
| Parameter | Units | Result | Result | RPD | RPD | Qualifiers |
| 1,2-Dichloroethane-d4 (S) | %. | 103 | 102 | 1 | | |
| 4-Bromofluorobenzene (S) | %. | 109 | 109 | 0 | | |
| Toluene-d8 (S) | %. | 100 | 98 | 2 | | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10298090

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10298090

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|-----------|-------------------|---------------------|
| 10298090001 | W-DSCHG | NWTPH-Gx | GCV/13418 | _ | |
| 10298090002 | W-OUT-WC1 | NWTPH-Gx | GCV/13418 | | |
| 10298090003 | W-INF-WS1 | NWTPH-Gx | GCV/13418 | | |
| 10298090001 | W-DSCHG | EPA 8260 | MSV/30634 | | |
| 10298090002 | W-OUT-WC1 | EPA 8260 | MSV/30634 | | |
| 10298090003 | W-INF-WS1 | EPA 8260 | MSV/30634 | | |

PaceAntylica

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CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

| Section | | | Section B | | | | | | | | Secti | ion C | : | | | | | | | | | | | | | | Г | _ | | | | |
|----------------|----------|---|---|--------------------------|-----------------|-----------------------|----------------|--|----------|---------------------------|-------------------------|-------------|--------|------------------|-----------|-----------|----------|---|---------------------|-------------|--------------|---------------|------------------|--------------|-------------------|---------------|-------|----------------|------------------------|------------------------|--------------------------------|-------------------------|
| | | nt Information: | Required P | _ | | | | | | | | | form | tion: | _ | | | | | | | | | | | | | Pag | 0: | 1 | Of | 1 |
| Compa Addms | | Cardno ATC | Roport To; | | | attier | | | | _ | Atten | _ | | | | _ | | | | | | | | | | | | $\overline{}$ | n | 200 | 90 | |
| Address | <u>x</u> | 7070 SW Fir Loop, Sulte 100 Tigard, OR 97223 | Copy To: | _Ke | ith F | XOX | | | | _ | Comp | | Name | : | | | | | | | | | | | | | | - | | | | |
| Ernail T | D: | kyle.sattler@cardno.com | Purchase O | rder h | ło | 0313260 | 178 | | | | | | te Rel | | | | | | | | | ŀ | KCIW | | | | | 63. 4 7 | | | | |
| Phone: | - | 503 430 6696 Fax | Client Proje | | | | | estlake/ | Aercer | _ | _ | _ | ct Ma | _ | | Jer | nni G | Gross | | | | | Store / Location | | | | | | and a second second | | | |
| Reques | ted Du | Date/TAT: 10 Day (Standard) | Container C | | | | | | | | Pace Profile # 33332 #1 | | | | | Ť | | - | | | | | NA | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 1 | 1.2 | ÷. | Róqu | Sted 7 | (iiiiy) | is Fi | tén d | (INN) | 1420 | | 1.13 | 1. | | |
| | | | | | | | COLLE | | | | | | P | rese | vali | ves | | | NNY | | | | | | | | | | 20.5 | A. | | |
| | | | CODE | | | | | | | | | | | | | | | | | _ | | | | | | | | | | | | |
| 1 | | One Character per how Water | WT | 2 | | STA | RI | Eł | ш. | | | | | | | | | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | 5 | ğ | | | | | | | | | | | | |
| | | (ArZ, 0-9 / , -) Product | P | 9 | 1 | | | | | | | | | | | | | | | Ϋ́. | ₹ | | | | | | | | | | | |
| | | Sample ids must be unique Solvaoid | SL OL WP AR OT | (soe valid codes to tof) | (G=GRAB C=COMP) | | | | | <u>a</u> | | | | | | | | | - Antilyees (est.) | <u>کام</u> | | | | | | | | | | | | [|
| | | Wipe | WP | 8 | ğ | | | | | BARPLE TEMP AT COLLECTION | | | | | | | | | | ZI: | 2 | | | | | | | | 6 | | | 1 |
| | | Air Other | AR OT | 1 | ŝ | | | | | 쿬 | | | | | | | 1 1 | | ξÌ | 삗 | 5 | | | 1 | | | | | Rosidual Chlorho (YAI) | | | |
| | | These | 18 | | | | | | | Ĕ | 8 | | | | | | |) | ΞÌ | | Anarysis | | | | | | | | ٤ | | | |
| | | | | 붲 | ۲ ۲ | | | | | 8 | N. | 8 | | | | | 11 | | <u></u> | Ž I Ž | | | | | | | | | R | | | |
| 2 | | | | MATRIX CODE | BANPLE TYPE | | | | | 5 | S OF CONTAINERS | Urpreserved | • _ | | | Na29203 | Methanol | | 斍(| <u>9</u> < | ₹ | | | | | | | | ą | | | |
| ITEM | | | | Ĕ | ۲, E | | | | | ŝ | К, | ŝ. | HX804 | ş | NaOH | 28 | 8 | See. | 51, | EIS | | | | | | | | | 볋 | | | |
| | | | | <u>∎</u> | 9 | DATE | TIME | DATE | TIME | 2 | - | 5 : | | 토 | Ž | Ŵ | Ξ | 8 | <u>- 1</u> | = 1ŭ | ī _ | \vdash | _ | | \square | | _ | - | 5 | <u> </u> | | |
| | w-c | SCHG | | W | G | 02/25/15 | 9:10 | | | | 3 | | | X | | | | | L | × | | | | | | | | | | <u> </u> | | |
| 2 | w-c | UT-WC1 | | WT | G | 02/25/15 | 9:15 | | | | 3 | | | X | | | | | | x | | | | | | | | | | 003 | ድ | |
| 3.5 | W.1 | F-WS1 | | WT | ß | 02/25/15 | 9:20 | | | | 3 | | | x | | | | | Γ | x | | ТΤ | | Г | | | T | Т | 1 | 00 | 3 | |
| 6 | | | | | | | | | | | | \uparrow | + | | | | | | F | <u> </u> | | | | | | | - | + | 1 | نشكنه | | |
| 1514 | | | | | | | | | | - | | + | + | - | | | | - | ŀ | - | -+ | ╋━┢ | +- | + | ┝─╢ | -+ | + | ╉── | 1 | | | |
| 5.5 | | | | - | \square | | | | \vdash | - | | + | | | | _ | ┨──┨ | | ┢ | | | + | | + | | \rightarrow | + | + | 4 | | | |
| - 5 | | | | | <u> </u> | | | | | _ | | _ | | | | | | | H | | | ↓ ↓ | | | | | | - | | | | |
| 7. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| ······ | | | | ╋ | H | | | | | | | -† | | | \square | | \vdash | | ŀ | + | + | ++ | + | + | \square | | -1- | + | 1 | · | | |
| - :10 | | · · · | | ╋ | \vdash | <u> </u> | | | ┠╂ | | ┝╍╋ | - | + | ╋ | \vdash | | ┝─┥ | \mathbf{H} | ┢ | + | | + | | + | + | \dashv | _ | + | \mathbf{I} | | | |
| <u>11</u> | | | | - | \square | | | | | _ | -+ | | | | | L | ┝╌┥ | | ┢ | - | — | ++ | + | + | \square | | _ | | 4 | ļ | · | |
| . 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | ADDITIONAL COMMENTS | | ELIN | | REDBEL | UTILIAT | ion - | CATE | 55 | A | WE | | | A | ĊĊĔ | PIE | D BY | AF | Ξų. | DON | | | DAT | E st . | . T | îne - | | 1 | SAMPLE (| ONDITIO | 5 |
| | | n - na mana ang ang ang ang ang ang ang ang ang | 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 | | | | | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | | ~~~~ | | | | | / | _/ | | | | | | ለፖኮ | | | | 1. | | T ₁ | S | U | N | 4 |
| <u> </u> | | | | _ | | | | | | 4 | | | 12 | τ¢. | 10 | | Ë | - | | | _ r 1 | ¥E. | _ p : | <u>. X</u> . | Ö | | 130 | _ | _ | ٣_ | | -7 |
| | | | | | | | | | | | | | | Hh | محل | - سرھا | fu | ん | - | | | | Z | 27 | שן | °15 | 5 | 3 | .3 | V | $ \mathcal{N} $ | IV |
| | | | | | | | | | | 1 | | | \neg | | T | | بتب ال | | | | | | | - | | | | | | | | / |
| <u> </u> | | | | | | | | | | | | | | | | | | | | | | | _ | | _ | | | + | | | | <u> </u> |
| l | | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | |
| • | | | | | _ | | SAMPLE | RIAME | NIT STAT | TÜ | RE C | | | 1 | 21S-) | 1 | а | | 1.0 | | | | a .: | 1.5 | - 3 | <i>.</i> | | | | | 8 | τ |
| | | | | | | | | NT Name | | | Cés, | 1.1 | 2.5.9 | 35 [] | | | 4/. | | 99 til | 17 | | | 1.1 | | 10.00 | <u> </u> | | Ξ. | ບ່ | 8 | Custody Sealed Cooler (Y/N) | Samplas Intact (Y/N) |
| | | | | | | | | | | | | , | | | | | | | Mic | | Milar | _ | | | | • | | | <u>ا</u> ۽ | N) | 85 | 881 |
| | | | | | | SIGNATURE of SAMPLER: | | | | | Л | n.] | 1r | • | | | | | | D/ | ATE SI | gned: | | | 2/25/ | 2015 | | | TEMP in C | Received (to (Y/N) | | Ĩ. |
| | | | | | | | | | | | | | | | | | | | | | 00 | _ <u> 45 </u> | | | | | | | | | | |

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| Pace Analytica | | Sample Condi | | n Receip | t Form | Docu | ment Revised: 28 Page 1 of 1 | | |
|---|---------------------------------------|---------------------------------------|------------------------|---------------------|----------------------------|-------------------------------|---------------------------------------|--------------------------|----------|
| | u | - | ocument / N-L-213-r | | | Pace | Issuing Authority Minnesota Qualit | | |
| Ample Condition Client Name: Upon Receipt (Condition) purier: ØFed Ex]Commercial Pace Tracking Number: 5779 5333 | ATT, DUPS DSpeeDee 3 0736 | USPS | P. | roject # :nt | ¹ WO | #:1(| 02980 | 90 | |
| Custody Seal on Cooler/Box Present? | XYes 🗆 |]No Se | als Intac | 17 M | /es □No | Option | al: Proj. Due D | ate: Pro | j. Name: |
| acking Material: 🔀 Bubble Wrap | Bubble Ba | | | har | | | Temp Blank | 7 XYes | |
| nermom. Used: B88A9130516413 | 1200001210 1200001210 100001210 | 7504 Dune | of Ice: | 'Sewet | []Blue | None | Samples on ice | | |
| ocler Temp Read (°C): <u>3.3</u> mp should be above freezing to 6°C | Cooler Temp (Correction F | Corrected (*C): actor: <u>+0</u> . | 3.4 | Date | Bi and initials (| ological Tiss of Person Ex | sue Frozen? | Yes []N s: <u>Ang</u> | |
| Chain of Custody Present? | | D eres | N o | | 1. | | wwnith ng hillion | | |
| Chain of Custody Filled Out? | | KiYes | | Ŭ | 2. | | | · · · | |
| Chain of Custody Relinguished? | | Yes | | <u> </u> | 3. | | | | |
| Sampler Name and/or Signature on Co | 502 | Yes | | Ü | 4. | | | | |
| Samples Arrived within Hold Time? | | X Yes | | | 5. | | | | |
| Short Hold Time Analysis (<72 hr)? | | []Yes | DON0 | <u> </u> | 6. | | | | |
| Rush Turn Around Time Requested? | | []Yes | 5JK10 | Ü | 7. | | | | <u> </u> |
| Sufficient Volume? | | XYes | | τ <u>ά</u> | 8. | | | | |
| Correct Cantainers Used? | | 2 Yes | | ال | 9. | | | | |
| -Pace Containers Used? | | | | ٣ ٣ | | • | | | |
| Containers Intact? | | | | <u> </u> | 10. | | | • | |
| Filtered Volume Received for Dissolve | d Tests? | □Yes | | X | 11. | | | | |
| Sample Labels Match COC? | · • | XYes | | | 12. | | | | |
| -Includes Date/Time/ID/Analysis A All containers needing acid/base prese | | | | | | | | | |
| checked? All containers needing preservation ar compliance with EPA recommendation | re found to be in n? | ∐Yes | | N/A N/A | 13. Sample # | []HNO3 | <u></u> H₂SO₄ [|]NaOH | Пнсі |
| (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH >9 Sulfide Exceptions: VOA, Collform, TOC, Oil ar DRO/8015 (water) DOC | , NaOH>12 Cyani nd Grease, | ide) []Yes | ΣΝο | 170 | Initial when completed: | | Lot # of preserva | | |
| Headspace in VOA Vials (>6mm)? | | Yes | No | XX NA | 14. | | | | |
| Trip Blank Present? | | □Yes | []No | | 15. | | | | |
| Trip Blank Custody Seals Present? Pace Trip Blank Lot # (if purchased): | | ∏Yes | | Det N/A | | | | | |
| IENT NOTIFICATION/RESOLUTION Person Contacted: Comments/Resolution: | | | | Da | te/Time: | | id Data Requiradi | | ZN0 |
| | | | | | | | · · · · · · · · · · · · · · · · · · · | | |
| oject Manager Review: | NGUS | 8 | | | Date: | 3 | 3 15 | | |



Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

March 31, 2015

Kyle Sattler Cardno ATC 7070 SW Fir Loop Suite 100 Portland, OR 97223

RE: Project: AOC 1396-P66 Westlake/Mercer Pace Project No.: 10300059

Dear Kyle Sattler:

Enclosed are the analytical results for sample(s) received by the laboratory on March 19, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

JENNI GROSS

Jennifer Gross jennifer.gross@pacelabs.com Project Manager

Enclosures

cc: Keith Fox, Cardno ATC





Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

CERTIFICATIONS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300059

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926.01 Alaska Certification #: UST-078 Alaska Certification #MN00064 Alabama Certification #40770 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #:14-008r Georgia Certification #: 959 Georgia EPD #: Pace Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137 Mississippi Certification #: Pace Montana Certification #: MT0092 Nevada Certification #: MN_00064 Nebraska Certification #: Pace New Jersey Certification #: MN-002 New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 West Virginia Certification #: 382 West Virginia DHHR #:9952C Wisconsin Certification #: 999407970



SAMPLE SUMMARY

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300059

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|-------------|-----------|--------|----------------|----------------|
| 10300059001 | W-DSCHG | Water | 03/18/15 13:30 | 03/19/15 09:30 |
| 10300059002 | W-OUT-WC1 | Water | 03/18/15 13:35 | 03/19/15 09:30 |
| 10300059003 | W-INF-WS1 | Water | 03/18/15 13:40 | 03/19/15 09:30 |



SAMPLE ANALYTE COUNT

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10300059

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|----------|----------|----------------------|------------|
| 10300059001 | W-DSCHG | NWTPH-Gx | LLC | 2 | PASI-M |
| | | EPA 8260 | DJB | 7 | PASI-M |
| 10300059002 | W-OUT-WC1 | NWTPH-Gx | LLC | 2 | PASI-M |
| | | EPA 8260 | DJB | 7 | PASI-M |
| 10300059003 | W-INF-WS1 | NWTPH-Gx | LLC | 2 | PASI-M |
| | | EPA 8260 | DJB | 7 | PASI-M |



ANALYTICAL RESULTS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300059

Sample: W-DSCHG Lab ID: 10300059001 Collected: 03/18/15 13:30 Received: 03/19/15 09:30 Matrix: Water Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual Analytical Method: NWTPH-Gx **NWTPH-Gx GCV** TPH as Gas ND ug/L 100 1 03/30/15 14:23 Surrogates a,a,a-Trifluorotoluene (S) 96 %. 50-150 1 03/30/15 14:23 98-08-8 8260 MSV UST Analytical Method: EPA 8260 ND 03/24/15 23:02 71-43-2 Benzene ug/L 1.0 1 Ethylbenzene ND ug/L 1.0 03/24/15 23:02 100-41-4 1 Toluene ND 03/24/15 23:02 108-88-3 ug/L 1.0 1 Xvlene (Total) ND ug/L 3.0 1 03/24/15 23:02 1330-20-7 Surrogates 94 75-125 03/24/15 23:02 17060-07-0 1,2-Dichloroethane-d4 (S) %. 1 Toluene-d8 (S) 101 %. 75-125 1 03/24/15 23:02 2037-26-5 4-Bromofluorobenzene (S) 106 %. 75-125 03/24/15 23:02 460-00-4 1 Sample: W-OUT-WC1 Lab ID: 10300059002 Collected: 03/18/15 13:35 Received: 03/19/15 09:30 Matrix: Water DF Parameters Results Units Report Limit Prepared Analyzed CAS No. Qual **NWTPH-Gx GCV** Analytical Method: NWTPH-Gx TPH as Gas ND 100 03/30/15 14:02 ug/L 1 Surrogates a,a,a-Trifluorotoluene (S) 97 %. 50-150 1 03/30/15 14:02 98-08-8 Analytical Method: EPA 8260 8260 MSV UST Benzene ND ug/L 1.0 1 03/24/15 23:18 71-43-2 Ethylbenzene ND ug/L 1.0 1 03/24/15 23:18 100-41-4 Toluene ND ug/L 1.0 03/24/15 23:18 108-88-3 1 Xylene (Total) ND ug/L 3.0 03/24/15 23:18 1330-20-7 1 Surrogates 1,2-Dichloroethane-d4 (S) 95 %. 75-125 03/24/15 23:18 17060-07-0 1 Toluene-d8 (S) 101 %. 75-125 1 03/24/15 23:18 2037-26-5 4-Bromofluorobenzene (S) 108 %. 75-125 1 03/24/15 23:18 460-00-4 Sample: W-INF-WS1 Lab ID: 10300059003 Collected: 03/18/15 13:40 Received: 03/19/15 09:30 Matrix: Water Results Report Limit DF CAS No. Qual Parameters Units Prepared Analyzed Analytical Method: NWTPH-Gx **NWTPH-Gx GCV** TPH as Gas ND 100 03/30/15 17:52 ug/L 1 Surrogates a,a,a-Trifluorotoluene (S) 98 %. 50-150 1 03/30/15 17:52 98-08-8 8260 MSV UST Analytical Method: EPA 8260 ND 03/24/15 23:35 71-43-2 Benzene ug/L 1.0 1

REPORT OF LABORATORY ANALYSIS

1.0

1

ND

ug/L

Ethylbenzene

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03/24/15 23:35 100-41-4



ANALYTICAL RESULTS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300059

| Sample: W-INF-WS1 | Lab ID: 1 | 10300059003 | Collected: 03/18/1 | 5 13:40 | Received: 03 | 3/19/15 09:30 N | Matrix: Water | |
|-------------------------------------|--------------|----------------|--------------------|---------|--------------|-----------------|---------------|------|
| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
| 8260 MSV UST | Analytical M | Method: EPA 82 | 260 | | | | | |
| Toluene | ND |) ug/L | 1.0 | 1 | | 03/24/15 23:35 | 108-88-3 | |
| Xylene (Total) <i>Surrogates</i> | ND |) ug/L | 3.0 | 1 | | 03/24/15 23:35 | 1330-20-7 | |
| 1,2-Dichloroethane-d4 (S) | 97 | % . | 75-125 | 1 | | 03/24/15 23:35 | 17060-07-0 | |
| Toluene-d8 (S) | 101 | %. | 75-125 | 1 | | 03/24/15 23:35 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 107 | %. | 75-125 | 1 | | 03/24/15 23:35 | 460-00-4 | |



| Project: AOC 1 Pace Project No.: 10300 | 396-P66 Westlake/Mercer 059 | | | | | | | | | |
|---|--------------------------------|-----------------|-----------|-------------------|-------------|----------|-------------|-----|-------------|------------|
| QC Batch: GCV | /13536 | Analysi | s Method | : N\ | NTPH-G | x | | | | |
| QC Batch Method: NWT | PH-Gx | Analysi | s Descrip | tion: N\ | NTPH-G | x Water | | | | |
| Associated Lab Samples: | 10300059001, 10300059002 | | | | | | | | | |
| METHOD BLANK: 19267 | 75 | М | atrix: Wa | ter | | | | | | |
| Associated Lab Samples: | 10300059001, 10300059002 | | | | | | | | | |
| Parameter | Units | Blank Result | | eporting Limit | Ana | llyzed | Qualifie | ers | | |
| TPH as Gas | ug/L | | ND | 100 | 03/30/ | 15 05:29 | | | | |
| a,a,a-Trifluorotoluene (S) | %. | | 97 | 50-150 | 03/30/ | 15 05:29 | | | | |
| METHOD BLANK: 19267 | 76 | M | atrix: Wa | ter | | | | | | |
| Associated Lab Samples: | 10300059001, 10300059002 | | | | | | | | | |
| | | Blank | R | eporting | | | | | | |
| Parameter | Units | Result | | Limit | Ana | lyzed | Qualifie | ers | | |
| TPH as Gas | ug/L | | ND | 100 | 03/30/ | 15 09:14 | | | | |
| a,a,a-Trifluorotoluene (S) | %. | | 95 | 50-150 | 03/30/ | 15 09:14 | | | | |
| LABORATORY CONTROL | SAMPLE & LCSD: 1926777 | | | 1926778 | | | | | | |
| | | Spike | LCS | LCSD | LCS | LCSD | % Rec | | Max | |
| Parameter | Units | Conc. | Result | Result | % Rec | % Rec | Limits | RPD | RPD | Qualifiers |
| TPH as Gas | ug/L | 1000 | 1020 | 935 | 102 | 93 | 65-125 | 9 | 20 | |
| a,a,a-Trifluorotoluene (S) | %. | | | | 103 | 98 | 50-150 | | | |
| MATRIX SPIKE SAMPLE: | 1928685 | | | | | | | | | |
| Parameter | Units | 1030005 Resu | | Spike Conc. | MS Resul | t | MS % Rec | | Rec nits | Qualifiers |
| TPH as Gas | ug/L | | ND | 1000 | | 980 | 98 | 3 | 50-150 | |
| a,a,a-Trifluorotoluene (S) | %. | | | | | | 95 | 5 | 50-150 | |
| SAMPLE DUPLICATE: 19 | 928686 | | | | | | | | | |
| | | 10300053 | | Dup | | | Max | | | |
| Parameter | Units | Result | | Result | RF | 'D | RPD | Qı | alifiers | |
| | | | | | | | | | | |
| TPH as Gas a,a,a-Trifluorotoluene (S) | ug/L %. | | ND 94 | ND 96 | | 2 | | 30 | | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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| -) | : 1396-P66 Westla 00059 | ke/Mercer | | | | | | | | | |
|--|-----------------------------------|------------|--------------------|-------------------------|--------------------|------------------|----------------------|------------------|-----|------------------|------------|
| | V/13547 /TPH-Gx 10300059003 | | • | is Method is Descrip | | WTPH-G WTPH-G | | | | | |
| METHOD BLANK: 1928 | | | Ν | latrix: Wa | ater | | | | | | |
| Associated Lab Samples: Parameter | 10300059003 | Units | Blank Result | | Reporting Limit | Ana | lyzed | Qualifie | ers | | |
| TPH as Gas a,a,a-Trifluorotoluene (S) | | ug/L %. | | ND 93 | 100 50-150 | | 15 16:49 15 16:49 | | | | |
| METHOD BLANK: 1928 | | | N | 1atrix: Wa | iter | | | | | | |
| Associated Lab Samples: Parameter | 10300059003 | Units | Blank Result | | Reporting Limit | Ana | lyzed | Qualifie | ers | | |
| TPH as Gas a,a,a-Trifluorotoluene (S) | | ug/L %. | | ND 99 | 100 50-150 | | 15 20:40 15 20:40 | | | | |
| LABORATORY CONTRO | L SAMPLE & LCS | D: 1928195 | Spike | LCS | 1928196 LCSD | LCS | LCSD | % Rec | | Мах | |
| Parameter | | Units | Conc. | Result | Result | % Rec | | Limits | RPD | RPD | Qualifiers |
| TPH as Gas a,a,a-Trifluorotoluene (S) | | ug/L %. | 1000 | 1040 | 939 | 104 104 | 94 92 | 65-125 50-150 | 1 | 0 20 | |
| MATRIX SPIKE SAMPLE | : 192 | 8642 | 103000 | 53001 | Spike | MS | | MS | % | Rec | |
| Parameter | | Units | Resi | | Conc. | Resul | t | % Rec | | mits | Qualifiers |
| TPH as Gas a,a,a-Trifluorotoluene (S) | | ug/L %. | | 222000 | 500000 | 72 | 9000 | 101 111 | | 50-150 50-150 | |
| SAMPLE DUPLICATE: | 1928643 | | | | | | | | | | |
| Parameter | | Units | 10300053 Result | | Dup Result | RF | D | Max RPD | Q | ualifiers | |
| TPH as Gas a,a,a-Trifluorotoluene (S) | | ug/L %. | 4 | 7900 106 | 45900 104 | | 4 | | 30 | | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc..



Matrix: Water

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300059

| QC Batch: | MSV/30869 |
|-----------|-----------|
| | |

Analysis Method:

EPA 8260 Analysis Description: 8260 MSV UST-WATER

QC Batch Method: EPA 8260 10300059001, 10300059002, 10300059003 Associated Lab Samples:

METHOD BLANK: 1924201

| Associated Lab Samples: | 10300059001, 103000590 | 002, 10300059003 | | | |
|---------------------------|------------------------|------------------|-----------|----------------|------------|
| | | Blank | Reporting | | |
| Parameter | Units | Result | Limit | Analyzed | Qualifiers |
| Benzene | ug/L | ND | 1.0 | 03/24/15 18:42 | |
| Ethylbenzene | ug/L | ND | 1.0 | 03/24/15 18:42 | |
| Toluene | ug/L | ND | 1.0 | 03/24/15 18:42 | |
| Xylene (Total) | ug/L | ND | 3.0 | 03/24/15 18:42 | |
| 1,2-Dichloroethane-d4 (S) | %. | 95 | 75-125 | 03/24/15 18:42 | |
| 4-Bromofluorobenzene (S) | %. | 106 | 75-125 | 03/24/15 18:42 | |
| Toluene-d8 (S) | %. | 103 | 75-125 | 03/24/15 18:42 | |

LABORATORY CONTROL SAMPLE: 1924202

| | | Spike | LCS | LCS | % Rec | |
|---------------------------|-------|-------|--------|-------|--------|------------|
| Parameter | Units | Conc. | Result | % Rec | Limits | Qualifiers |
| Benzene | ug/L | 20 | 18.4 | 92 | 71-125 | |
| Ethylbenzene | ug/L | 20 | 19.0 | 95 | 75-125 | |
| Toluene | ug/L | 20 | 19.5 | 97 | 74-125 | |
| Xylene (Total) | ug/L | 60 | 57.4 | 96 | 75-125 | |
| 1,2-Dichloroethane-d4 (S) | %. | | | 96 | 75-125 | |
| 4-Bromofluorobenzene (S) | %. | | | 106 | 75-125 | |
| Toluene-d8 (S) | %. | | | 102 | 75-125 | |

MATRIX SPIKE SAMPLE:

| MATRIX SPIKE SAMPLE: | 1924294 | | | | | | |
|---------------------------|---------|-------------|-------|--------|--------|--------|------------|
| | | 10300072001 | Spike | MS | MS | % Rec | |
| Parameter | Units | Result | Conc. | Result | % Rec | Limits | Qualifiers |
| Benzene | ug/L | 5630 | 20 | 1120 | -22500 | 53-139 | E,M1 |
| Ethylbenzene | ug/L | 77.7 | 20 | 93.6 | 79 | 55-139 | |
| Toluene | ug/L | 25.8 | 20 | 42.0 | 81 | 52-148 | |
| Xylene (Total) | ug/L | 20.3 | 60 | 71.1 | 85 | 54-144 | |
| 1,2-Dichloroethane-d4 (S) | %. | | | | 96 | 75-125 | |
| 4-Bromofluorobenzene (S) | %. | | | | 105 | 75-125 | |
| Toluene-d8 (S) | %. | | | | 102 | 75-125 | |

SAMPLE DUPLICATE: 1924295

| Parameter | Units | 10300072002 Result | Dup Result | RPD | Max RPD Q | ualifiers |
|----------------|-------|-----------------------|---------------|-----|--------------|-----------|
| Benzene | ug/L | 256 | 266 | 4 | 30 E | |
| Ethylbenzene | ug/L | 455 | 381 | 18 | 30 E | |
| Toluene | ug/L | 22.9 | 24.2 | 6 | 30 | |
| Xylene (Total) | ug/L | 1160 | 985 | 16 | 30 ES | |

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REPORT OF LABORATORY ANALYSIS

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Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300059

| SAMPLE DUPLICATE: 1924295 | | | | | | |
|---------------------------|-------|-------------|--------|-----|-----|------------|
| | | 10300072002 | Dup | | Max | |
| Parameter | Units | Result | Result | RPD | RPD | Qualifiers |
| 1,2-Dichloroethane-d4 (S) | %. | 99 | 95 | 4 | | |
| 4-Bromofluorobenzene (S) | %. | 101 | 100 | 1 | | |
| Toluene-d8 (S) | %. | 102 | 103 | 2 | | |

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10300059

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- ES The reported result is estimated because one or more of the constituent results are qualified as such.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10300059

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|-----------|-------------------|---------------------|
| 10300059001 | W-DSCHG | NWTPH-Gx | GCV/13536 | _ | |
| 10300059002 | W-OUT-WC1 | NWTPH-Gx | GCV/13536 | | |
| 10300059003 | W-INF-WS1 | NWTPH-Gx | GCV/13547 | | |
| 10300059001 | W-DSCHG | EPA 8260 | MSV/30869 | | |
| 10300059002 | W-OUT-WC1 | EPA 8260 | MSV/30869 | | |
| 10300059003 | W-INF-WS1 | EPA 8260 | MSV/30869 | | |

. PaceAnalytical

CHAIN-OF-CUSTODY / Analytical Request Document

| Section | | Section B | | | | | | | Sec | tion C | | | | | | | | | | | | | | | | • | | | - | _ |
|----------|---|---------------|---------------------------------------|-----------------|------------|---------------------|----------|------------------------|-----------------|-----------|---------------|----------|-------|--------------|---------------|------------|--------|--------------------|--------------|--------|---------------|------------|----------|---------|----------------|-------------------------|-------------------|----------|--------------|-------------------------|
| | ed Client Information: | Required F | roject | Informatio | m: | | | | | | - nforma | tion: | | | | | | | | | | | • • | | | | | | ~ | |
| Compa | ny: Cardno ATC | Report To: | | e Sattler | | | | _ | | ntion: | | | | | | | | | | ٦ | | | | | | age : | 1 | | <u>Of</u> | |
| Addres | | Copy To: | | th Fox | | | | | | | Name | | | | | | | | | - | | | | | | | | | | |
| | Tigard, OR 97223 | | | | | | _ | _ | | ress: | | _ | | _ | | | | | | 1.25 | | a 5 81 | | - | | | (| 81. F | | N/18-12-1 |
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| Phone: | | Cilont Proje | a ID: | AOC 13 | 96 - P66 V | Vestlake | /Mercer | | | | ect Ma | | _ | Jenr | hi Gro | tee | | | | 1.5 | a 114. | | <u>.</u> | - | (Artical) | | | 37 214 | | a 141 1 1 1 1 1 |
| Reques | ted Due Date/TAT: 10 Day (Standard) | Container (| Order N | umber: | | | | - | | e Prof | | | | 00/11 | | | | | . | - | 1.4564 | | | | | WA | CRUCILS. | 10.00 | | -53D- |
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| 11EN# | SAMPLE ID One Character per box. (A-2, 0-9 /, -) Sample Ids must be unique Coefficient Sample Ids must be unique | WT | MATRIX CODE (see valid codes to Icfl) | (GeGRAB C=COMP) | START | | TIME | PLE TEMP AT COLLECTION | 4 OF CONTAINERS | (eserved | 8 | | - | Na25203 | | Toot Color | × | G Analysis by 1664 | | | | | | | | Restring Chloring (VAI) | Jacob Contractory | | | |
| | | | 1 1 1 | S DAT | E TIME | DATE | TIME | 3 | \$ | 5 | H2804 HN03 | Ŧ | NaC | CaN 1 | Other | | ٩ ٩ | 입 | | | | | | | | a a | | | | |
| | W-DSCHG | | M | G 03/18 | /15 13:30 | | | | 3 | | | x | | | | Π | x | Т | Τ | Π | | | Т | Τ | | | | ca | - | |
| | W-OUT-WC1 | | MU. | G 03/18 | 15 13:35 | | | | 3 | | | x | | | Τ | 11 | x | Т | | | | | | | | | | 00 | ~ | |
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| -4 | | _ | | <u>G (03/18</u> | 15 13:40 | | <u> </u> | <u> </u> | 3 | | _ | X | | | | 11 | x | | _ | | | | | | | | | 00 | 3 | |
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| | | | | | PR | NT Name | of SAMPL | ER: | | 1 | 7 | _ | | | | | | umac | | | | | A 629 | | 44 | TEMP In C | Received on | V Sea | Cealer (Y/N) | Samples Intact (Y/N) |
| | | | | | \$IG | NATURE | SAMPL | ER: | 1 | | 1 | 4 | - | >- | | | | | ci Ngned | | | | | - | | dy. | <u>₹</u> 8 | 8 | § | Ž2 |
| | | | | | | | | 4 | A | 4 | 4 | \leq | 10 | <u> </u> | | | | | | | | 3/1 | 8/20 | 15 | | _ <u></u> | | 3 | <u>8</u> | 35 |
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|--|---------------------------------------|--|------------------|----------------------------|---------|---|---------------------------------------|---------|
| Upon Receipt Client Name: | | | roject # | |)#:1 | 030005 | 59 | |
| urier: AFed Ex UPS Commercial Pace SpeeDe Tracking Number: 577953331619 | USPS e Other: | Clie | ent | 1030 | 0059 | | | |
| ustody Seal on Cooler/Box Present? | ⊡No Si | eals intac | 17 J | es 🔲 No | Option | al: Proj. Due Date | : Proj. Na | me: |
| acking Material: 💭 Bubble Wrap 🛛 Bubble | Bags 🔲None | □0# | her: | | | Temp Blank? | □Yes [| |
| ermom. Used: 🛛 B88A9130516413 🔤 B88A912 🔤 B88A913 poler Temp Read (*C): 4-8 Cooler Tem | | of ice: Y_8 | Wet | Biue | None | Samples on ice, co | - · · | has beg |
| mp should be above freezing to 5°C Correction | · · · · · · · · · · · · · · · · · · · | <u> </u> | Date | | | imining Contents: | | |
| Chain of Custody Present? | Ves. | | | 1 . · | | Comments: | | |
| Chain of Custody Filled Out? | Zives | | | 2. | | | | |
| Chain of Custody Relinguished? | Zives. | | | 3. | | | | |
| Sampler Name and/or Signature on COC? | Ves/ | | _₩_ | 4. | | | · · · · · · · · · · · · · · · · · · · | |
| Samples Arrived within Hold Time? | Z Yes | | -10- | 5 . | | | ····· | |
| Short Hold Time Analysis {<72 hr}? | [Yes | | | <u> </u> | | | | |
| Rush Turn Around Time Requested? | | | | 7. | | | | |
| Sufficient Volume? | | | -10- | 8. | | · · · · | | |
| Correct Containers Used? | | / []No | <u> </u> | <u> </u> | <u></u> | | | |
| -Pace Containers Used? | Dies | | Ϋ́ | 9. | | | | |
| Containers Intact? | Zives | | | 10. | | ···· | | · |
| Filtered Volume Received for Dissolved Tests? | | | | <u>10.</u> 11. | , | | | |
| · · · · · · · · · · · · · · · · · · · | | | | | | | | _ |
| Sample Labels Match COC? | JT Pres | □ No | 4174 | 12. | | | | |
| -Includes Date/Time/ID/Analysis Matrix: All containers needing acid/base preservation have | haan | | | | | | | |
| checked? | | □No | N/A | 13. | | ∐H₂SO₄ | aOH [|]нсі |
| All containers needing preservation are found to be compliance with EPA recommendation? (HNO1, H2SO1, HCI<2; NaOH >9 Sulfide, NaOH>12 Cy | 🗋 Yes | No | N/A | Sample # | | • | - | |
| Exceptions: OA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC | Ves | | | Initial when completed: | | Lot # of add | | |
| Headspace in VOA Vials (>6mm)? | Yes | 12No | N/A | 14 | | • | | |
| Trip Blank Present? | Yes | | N/A | 15. | | | | |
| Trip Blank Custody Seals Present? | □Yes | No | N/A | | | | | |
| Pace Trip Blank Lot # (if purchased): | | — | | | | | | |
| IENT NOTIFICATION/RESOLUTION Person Contacted: Comments/Resolution: | | | _ Dat | e/Time: | Field | l Data Required? [| Yes IN | 0 |
| | | | | <u> </u> | | | | |
| oject Manager Review: | <u>8</u> | | | Date: | 3/20 | hς | | |



917 1st Avenue North, Suite 3 Billings, Montana 59101 Telephone: 406-259-1033 Fax: 406-259-1099

Appendix B PSCAA Permit



HEREBY ISSUES AN ORDER OF APPROVAL TO CONSTRUCT, INSTALL, OR ESTABLISH

Construction No. 10816

Registration No. 29548

Date

SEP 2 2 2014

Modification of Approval No. 10602 for the following:

1. To allow monitoring breakthrough once every two weeks.

2. To revise the detection threshold for the carbon change out and using isobutylene as the calibration standard.

3. To allow for operating without control when the pollutant concentration in the influent is below level that might cause concern.

APPLICANT

OWNER

Keith Fox Cardno ERI 801 2nd Ave, Suite 700 Seattle, WA 98104

Former Phillips 66 Facility No. 255353 801 2nd Ave, Suite 700 Seattle, WA 98104

INSTALLATION ADDRESS

Former Phillips 66 Facility No. 255353, 600 Westlake Ave N, Seattle, WA, 98107

THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING RESTRICTIONS AND CONDITIONS

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the INSTALLATION ADDRESS in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.

2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

3. All vapors from the remediation extraction system shall be vented to the carbon adsorption system for control. The maximum influent flow rate to each carbon adsorption system shall not exceed 500 standard cubic feet per minute (scfm). Cardno ERI shall measure and record the influent flowrate to the carbon adsorption system at least once per month.

4. The control efficiency of the carbon adsorption system shall be maintained at a minimum of 97% for Total Petroleum Hydrocarbon (TPH) when the TPH influent concentration to the carbon adsorption system is greater than or equal to 200 ppmv.

5. Within 30 days after the initial startup of the carbon adsorption system and at least once a month afterward, Cardno ERI shall demonstrate compliance with condition No. 4 of this order in accordance with the following requirements:

a. Determine the concentration of TPH in the gas at the inlet to the carbon adsorption system and the exhaust of the carbon adsorption system using EPA Method 18, or other equivalent method following approval from the Agency.

b. Calculate the control efficiency based on the inlet and exhaust TPH concentrations as determined under condition No. 5.a. to demonstrate compliance.

Cardno ERI shall keep records of each sampling, analysis, calculation results and date they were taken.

6. During operation of the activated carbon vessels, Cardno ERI shall contemporaneously monitor the gas stream with a photo-ionization detector (PID) or flame-ionization detector (FID) to prevent breakthrough at least once every 2 weeks at the following locations:

a. At the inlet to the second to the last carbon vessel in series.

b. At the inlet to the last carbon vessel in series.

7. Cardno ERI shall immediately change out the second to last carbon vessel with unspent carbon upon breakthrough defined as the detection at its outlet of the higher than 10 ppmv.

8. Cardno ERI shall maintain the following information of operation of the activated carbon vessels:

a. Hours and time of operation.

2014

b. The analysis or monitoring results for the day of operation they were taken.

c. The date change out occurred and the number of carbon vessel(s) changed.

9. The activated carbon monitoring schedule as required by condition No. 6 of this order may be changed based on the decline in organic emissions and/or the demonstrated breakthrough rates of the carbon vessels following approval from the Agency.

10. Cardno ERI shall report any non-compliance with Condition No 4 of this Order to the Agency no later than 30 days in which it is first discovered. Cardno ERI shall detail the corrective action taken and include the data showing the exceedance as well as the time of occurrence in the submittal.

11. Cardno ERI may operate the soil vapor extraction system without the control when the sampling data from two or more consecutive months shows that:

a. The pre-control TPH emission rate is equal to or less than 2.74 lbs/day; AND

b. The pre-control benzene emission rate is equal to or less than 0.018 lb/day.

Cardno shall notify PSCAA and obtain approval prior to removing the control system. The notice shall be in writing and include the most recent two months monitoring data and emission rate estimation for TPH and benzene.

12. Records to be maintained by this Order of Approval shall be kept for at least two years from the date of generation, and made available to Puget Sound Clean Air Agency personnel upon request.

13. This Order of Approval will cancel and supersede Order of Approval No.10602 issued 9/20/2013.

APPEAL RIGHTS

Pursuant to Puget Sound Clean Air Agency's Regulation I, Section 3.17 and RCW 43.21B.310, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon Puget Sound Clean Air Agency within 30 days of the date the applicant receives this Order.

SEP 2 2 2014

Carollen PE

Carole Cenci Senior Engineer

MengChiu Lim Reviewing Engineer ns

את בעבר שעייין באיזאג אחתיון שעוק אל געוערט שייריים איזיגע בשיטון געועס אין אנג מאפיריסאי יוס עבעון בעיי אוייר ענייסא געוערט איזיאא אחליטי איזא פעריין איזיגע מעניגעען געוער פארייטער איזיא איזיא איזיע געון בעייא איזיין איזי אויזאג

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WARNING:

Regulation I, Section 6.09, requires that the owner or applicant notify the Agency of the completion of the work covered by the application and when its operation will begin. This form is provided for your convenience to assist you in complying with this part of the Regulation.

APPLICANT or OWNER SECTION

Mail to: Puget Sound Clean Air Agency Compliance Division 1904 3rd Ave, Ste 105 Seattle, WA 98101-3317

The project described below was completed on

Signature of Owner and/or Applicant

Title

Phone

FOR AGENCY USE ONLY

Notice of Construction No.10816Registration No.29548

Project Description

Modification of Approval No. 10602 for the following:

1. To allow monitoring breakthrough once every two weeks.

2. To revise the detection threshold for the carbon change out and using isobutylene as the calibration standard.

3. To allow for operating without control when the pollutant concentration in the influent is below level that might cause concern.

Conditions on Reverse Side

Date

| Former Phillips 66 Facility No. 255353 801 2nd Ave, Suite 700 Seattle, WA, 98104 tle, WA, 98107 |
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| |
| |
| CL and Inspector chec |
| |
| (Estimated completion date plus 7) |
| Inspector |
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| |
| |

CONDITIONS

3. All vapors from the remediation extraction system shall be vented to the carbon adsorption system for control. The maximum influent flow rate to each carbon adsorption system shall not exceed 500 standard cubic feet per minute (scfm). Cardno ERI shall measure and record the influent flowrate to the carbon adsorption system at least once per month.

4. The control efficiency of the carbon adsorption system shall be maintained at a minimum of 97% for Total Petroleum Hydrocarbon (TPH) when the TPH influent concentration to the carbon adsorption system is greater than or equal to 200 ppmv.

5. Within 30 days after the initial startup of the carbon adsorption system and at least once a month afterward, Cardno ERI shall demonstrate compliance with condition No. 4 of this order in accordance with the following requirements:

a. Determine the concentration of TPH in the gas at the inlet to the carbon adsorption system and the exhaust of the carbon adsorption system using EPA Method 18, or other equivalent method following approval from the Agency.

b. Calculate the control efficiency based on the inlet and exhaust TPH concentrations as determined under condition No. 5.a. to demonstrate compliance.

Cardno ERI shall keep records of each sampling, analysis, calculation results and date they were taken.

6. During operation of the activated carbon vessels, Cardno ERI shall contemporaneously monitor the gas stream with a photo-ionization detector (PID) or flame-ionization detector (FID) to prevent breakthrough at least once every 2 weeks at the following locations:

a. At the inlet to the second to the last carbon vessel in series.

b. At the inlet to the last carbon vessel in series.

7. Cardno ERI shall immediately change out the second to last carbon vessel with unspent carbon upon breakthrough defined as the detection at its outlet of the higher than 10 ppmv.

8. Cardno ERI shall maintain the following information of operation of the activated carbon vessels:

a. Hours and time of operation.

b. The analysis or monitoring results for the day of operation they were taken.

c. The date change out occurred and the number of carbon vessel(s) changed.

9. The activated carbon monitoring schedule as required by condition No. 6 of this order may be changed based on the decline in organic emissions and/or the demonstrated breakthrough rates of the carbon vessels following approval from the Agency.

10. Cardno ERI shall report any non-compliance with Condition No 4 of this Order to the Agency no later than 30 days in which it is first discovered. Cardno ERI shall detail the corrective action taken and include the data showing the exceedance as well as the time of occurrence in the submittal.

11. Cardno ERI may operate the soil vapor extraction system without the control when the sampling data from two or more consecutive months shows that:

a. The pre-control TPH emission rate is equal to or less than 2.74 lbs/day; AND

b. The pre-control benzene emission rate is equal to or less than 0.018 lb/day.

Cardno shall notify PSCAA and obtain approval prior to removing the control system. The notice shall be in writing and include the most recent two months monitoring data and emission rate estimation for TPH and benzene.

12. Records to be maintained by this Order of Approval shall be kept for at least two years from the date of generation, and made available to Puget Sound Clean Air Agency personnel upon request.

13. This Order of Approval will cancel and supersede Order of Approval No.10602 issued 9/20/2013.