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| Project Title: | Compliance - Watson Cogeneration Company AFC |
| TN #: | 242936 |
| Document Title: | Annual Compliance Report - 2021 |
| Description: | N/A |
| Filer: | Anwar Ali |
| Organization: | Watson Cogen Company |
| Submitter Role: | Commission Staff |
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Darrin Fost Business Manager 310.816.8812

March 31, 2022

Mr. Anwar Ali Compliance Project Manager California Energy Commission 1516 Ninth Street Sacramento, CA 95814

Subject: 2021 Annual Compliance Report

Watson Cogeneration Project (85-AFC-01C)

Dear Mr. Ali,

Attached is the Annual Compliance Report for 2021 pursuant to the requirements of the California Energy Commission's Conditions of Certification for the Watson Cogeneration Company.

If you have any questions regarding this report, please contact me via telephone at (310) 816-8812 or via e-mail at DFost@Marathonpetroleum.com.

Sincerely,

Darrin Fost

Darrin Fost Business Manager Watson Cogeneration Company

AIR QUALITY CONDITIONS OF CERTIFICATION

AQ-25 A continuous monitoring system must be installed and operated to monitor and record the fuel consumption and the mass ratio of steam-to-fuel for each fuel being fired in each gas Turbines 1, 2, 3, 4 and 5. This system must be accurate to within +5.0 percent and calibrated once every 12 months.

Verification: The owner/operator shall maintain records of continuous fuel consumption and the steam-to-fuel mass ratio monitoring. These records will be maintained on file for at least two years and shall be made available to the SCAQMD and CEC staff upon request. CEM Relative Accuracy Test report will be submitted to the CEC annually.

Response: Instrumentation is in place for the purpose of continuous monitoring and recording of fuel consumption and steam injection to each of the four gas turbines at the facility (#5 was never constructed). The systems undergo regular calibration. A summary of fuel consumption and steam injection to each of the turbines is included below.

| AQ-25 | | Unit 91 | | | | | | Unit 92 | | | |
|----------|---------------|---------------|---------------|--------------------|--------------|------------------|----------------|------------------|--------------------|----------------|--|
| | NG/RFG | Butane | Total Fuel | DeNOx Steam | Steam: Fuel | NG/RFG | Butane | Total Fuel | DeNOx Steam | Steam : Fuel | |
| | lb/sec | lb/sec | Ib/sec | lb/sec | <u>Ratio</u> | lb/sec | lb/sec | Ib/sec | lb/sec | <u>Ratio</u> | |
| Jan-21 | 11.384 | 0.204 | 11.587 | 14.163 | 1.222 | 11.479 | 0.583 | 12.063 | 14.228 | 1.180 | |
| Feb-21 | 9.077 | 2.560 | 11.636 | 14.508 | 1.247 | 8.710 | 2.647 | 11.357 | 13.652 | 1.357 | |
| Mar-21 | 11.303 | 0.266 | 11.569 | 14.272 | 1.234 | 11.573 | 0.615 | 12.188 | 14.433 | 1.184 | |
| Apr-21 | 11.453 | 0.005 | 11.458 | 14.191 | 1.238 | 10.136 | 0.523 | 10.659 | 12.748 | 1.487 | |
| May-21 | 11.270 | 0.084 | 11.354 | 14.043 | 1.237 | 10.937 | 1.118 | 12.055 | 14.350 | 1.190 | |
| Jun-21 | 11.340 | 0.003 | 11.343 | 14.081 | 1.241 | 10.377 | 0.538 | 10.915 | 13.044 | 1.291 | |
| Jul-21 | 11.222 | 0.007 | 11.229 | 13.996 | 1.246 | 11.216 | 0.496 | 11.712 | 14.142 | 1.208 | |
| Aug-21 | 11.142 | 0.003 | 11.146 | 13.864 | 1.244 | 11.241 | 0.488 | 11.729 | 14.118 | 1.203 | |
| Sep-21 | 7.972 | 0.088 | 8.060 | 10.517 | 2.190 | 9.581 | 0.458 | 10.040 | 12.275 | 1.819 | |
| Oct-21 | 11.147 | 0.139 | 11.286 | 14.192 | 1.259 | 11.435 | 0.548 | 11.983 | 14.422 | 1.204 | |
| Nov-21 | 10.349 | 0.116 | 10.465 | 12.976 | 1.466 | 11.342 | 0.571 | 11.913 | 14.260 | 1.197 | |
| Dec-21 | 10.933 | 0.293 | 11.226 | 13.503 | 1.334 | 11.544 | 0.722 | 12.266 | 14.295 | 1.165 | |
| AQ-25 | | | Unit | 93 | | Unit 94 | | | | | |
| | NG/RFG | <u>Butane</u> | Total Fuel | <u>DeNOx Steam</u> | Steam : Fuel | NG/RFG | <u>Butane</u> | Total Fuel | <u>DeNOx Steam</u> | Steam : Fuel | |
| | <u>Ib/sec</u> | <u>lb/sec</u> | <u>Ib/sec</u> | <u>lb/sec</u> | <u>Ratio</u> | <u>lb/sec</u> | <u>lb/sec</u> | <u>Ib/sec</u> | <u>lb/sec</u> | <u>Ratio</u> | |
| Jan-21 | 10.309 | 0.456 | 10.765 | 12.568 | 1.191 | 11.287 | 0.196 | 11.483 | 14.085 | 1.227 | |
| Feb-21 | 10.477 | 0.379 | 10.856 | 13.478 | 1.249 | 10.921 | 0.153 | 11.074 | 14.000 | 1.271 | |
| Mar-21 | 11.285 | 0.526 | 11.811 | 13.774 | 1.166 | 3.343 | 0.111 | 3.454 | 5.296 | 4.844 | |
| Apr-21 | 11.148 | 0.519 | 11.667 | 13.594 | 1.165 | 11.566 | 0.246 | 11.812 | 14.424 | 1.221 | |
| May-21 | 10.983 | 0.512 | 11.495 | 13.351 | 1.161 | 11.497 | 0.138 | 11.635 | 14.338 | 1.232 | |
| Jun-21 | 10.992 | 0.574 | 11.566 | 13.440 | 1.162 | 11.462 | 0.101 | 11.564 | 14.346 | 1.241 | |
| Jul-21 | 10.819 | 0.614 | 11.433 | 13.220 | 1.156 | 11.407 | 0.119 | 11.526 | 14.348 | 1.245 | |
| Aug 21 | 40.000 | 0.701 | 11.391 | 12.996 | 1.141 | 11.304 | 0.114 | 11.419 | 14.164 | 1.240 | |
| Aug-21 | 10.689 | 0.701 | 11.331 | 12.550 | | | | | | | |
| Sep-21 | 10.689 | 0.701 | 11.609 | 14.535 | 1.251 | 11.485 | 0.202 | 11.687 | 14.634 | 1.252 | |
| — | | | | | | 11.485 11.182 | 0.202 0.123 | 11.687 11.305 | 14.634 14.079 | 1.252 1.245 | |
| Sep-21 | 10.944 | 0.665 | 11.609 | 14.535 | 1.251 | | | 1 | | | |

AQ-42 No more than one of the cogeneration units 1, 2, 3, 4 or 5 shall startup or shutdown in any one day. For Turbine Trains 1, 2, 3 and 4, start up shall not exceed 8 hours and

shutdown shall not exceed 4 hours. For Turbine Train 5, neither start up nor shutdown shall exceed 4 hours in duration.

Verification: The owner/operator shall maintain an operation log for the facility which, at a minimum, will identify startup and shutdown occurrences for each cogeneration unit. The owner/operator shall submit in its Annual Compliance Report to the CEC a summary of the operational log demonstrating compliance with this condition 5. (97-0924-4; 88-0525-18b)

Response: In the 2021 calendar year, APPC/Watson had 15 startups and 16 shutdowns. No startups exceeded an 8 hour duration and no shutdowns exceeded a 4 hour duration. Startup and shutdown dates shown in the tables below.

| AQ-4 | AQ-42: Shutdown Summary - 2021 | | | | | | | |
|------|--------------------------------|--------------------|--|--|--|--|--|--|
| Unit | Date | Duration < 4 Hours | | | | | | |
| 93 | 1/15/2021 | Yes | | | | | | |
| 93 | 2/12/2021 | Yes | | | | | | |
| 92 | 2/26/2021 | Yes | | | | | | |
| 94 | 3/5/2021 | Yes | | | | | | |
| 94 | 3/22/2021 | Yes | | | | | | |
| 92 | 4/9/2021 | Yes | | | | | | |
| 92 | 6/21/2021 | Yes | | | | | | |
| 92 | 7/14/2021 | Yes | | | | | | |
| 92 | 9/18/2021 | Yes | | | | | | |
| 91 | 9/22/2021 | Yes | | | | | | |
| 94 | 10/5/2021 | Yes | | | | | | |
| 94 | 11/5/2021 | Yes | | | | | | |
| 92 | 11/20/2021 | Yes | | | | | | |
| 93 | 11/27/2021 | Yes | | | | | | |
| 91 | 11/28/2021 | Yes | | | | | | |
| 93 | 12/3/2021 | Yes | | | | | | |

| AQ-4 | AQ-42: Startup Summary – 2021 | | | | | | | |
|------|-------------------------------|--------------------|--|--|--|--|--|--|
| Unit | Date | Duration < 8 Hours | | | | | | |
| 93 | 1/17/2021 | Yes | | | | | | |
| 93 | 2/13/2021 | Yes | | | | | | |
| 92 | 2/28/2021 | Yes | | | | | | |
| 94 | 3/20/2021 | Yes | | | | | | |
| 94 | 3/29/2021 | Yes | | | | | | |
| 92 | 4/13/2021 | Yes | | | | | | |
| 92 | 6/24/2021 | Yes | | | | | | |
| 92 | 7/15/2021 | Yes | | | | | | |
| 92 | 9/23/2021 | Yes | | | | | | |
| 91 | 10/1/2021 | Yes | | | | | | |
| 94 | 10/6/2021 | Yes | | | | | | |
| 94 | 11/9/2021 | Yes | | | | | | |
| 92 | 11/20/2021 | Yes | | | | | | |
| 93 | 11/27/2021 | Yes | | | | | | |
| 91 | 12/2/2021 | Yes | | | | | | |

AQ-43 The duct burner of the cogeneration units 1, 2, 3, 4 and 5 shall not be fired during the startup mode of operation.

Verification: The owner/operator shall maintain an operation log for the facility which, at minimum will identify the hours of operation of the duct burners. The owner/operator shall submit in its Annual Compliance Report to the CEC a summary of the operational log demonstrating compliance with this condition.

Response: During the 2021 calendar year, APPC/Watson had 15 startups. Duct burners were not fired during the startup mode of operation for any of the 15 startup events. Startup dates shown in the table below.

| AQ-4 | 3: Startup | |
|------|-------------|------------------------|
| Sumr | mary - 2021 | |
| | | Duct Fuel After |
| Unit | Date | Startup |
| 93 | 1/17/2021 | Yes |
| 93 | 2/13/2021 | Yes |
| 92 | 2/28/2021 | Yes |
| 94 | 3/20/2021 | Yes |
| 94 | 3/29/2021 | Yes |
| 92 | 4/13/2021 | Yes |
| 92 | 6/24/2021 | Yes |
| 92 | 7/15/2021 | Yes |
| 92 | 9/23/2021 | Yes |
| 91 | 10/1/2021 | Yes |
| 94 | 10/6/2021 | Yes |
| 94 | 11/9/2021 | Yes |
| 92 | 11/20/2021 | Yes |
| 93 | 11/27/2021 | Yes |
| 91 | 12/2/2021 | Yes |

BIOLOGICAL RESOURCES CONDITIONS OF CERTIFICATION

APPC shall monitor daily the zinc content, total volume and duration of all discharges from the ARCO Watson Refinery into the Dominguez Channel, which contain commingled cogeneration project cooling tower blowdown. The initial period of monitoring shall cover the first three years during which water is discharged into the Dominguez Channel. The need for subsequent monitoring will be determined by the CEC based on an evaluation of the zinc content of samples collected during the first three years of discharge. APPC shall take remedial action if monitored zinc levels exceed the EPA standard for salt water aquatic life.

Verification: APPC shall notify the CEC within 30 days of any discharge which exceeds EPA levels for zinc describing the cause of the exceedance and action taken to prevent similar occurrences. APPC shall submit written reports for the first three years during which APPC discharges to Dominguez Channel. The report shall contain the date, time, volume, duration and zinc content of the discharge. These reports can be appended to the annual compliance report for the years during which discharges to Dominguez Channel occurred. The reports shall be Submitted to the CEC and the Port of Los Angeles.

Response: APPC/Watson does not have its own NPDES permit. Low Volume Waste (LVW; boiler blowdown) from the Cogen are authorized to be discharged to the Dominguez Channel under the Marathon Los Angeles Refinery – Carson Operations NPDES permit (Order No. R4-

2015-0295, NPDES No. CA0000680). Zinc is listed in the permit with an effluent limitation; therefore, a discharge would be analyzed for zinc. A copy of the annual NPDES report has been included at the end of this annual compliance report.

COGENERATION CONDITIONS OF CERTIFICATION

COG-1 ARCO Petroleum Products Company (APPC) shall operate the facility as a cogeneration system in accordance with the definition of cogeneration contained in PRC Section 25134(a) and (b) and Title 18 CFR, Section 292.205(a)(1) and (a)(2)(i)(B).

Verification: APPC shall file with the CEC during each calendar year an annual report in which monthly average values of the following plant operating parameters will be given:

- a. Gas turbine, MW (gross) at the generator terminals for each unit
- b. Gas turbine operating hours for each unit
- c. For each CTG and each HRSG duct burner provide fuel input including:
 - type, natural gas, refinery gas or butane
 - rate, lb/hr
 - heating value (low), Btu/lb
 - firing hours
- d. Inlet air flow, lb/hr
- e. Combustion turbine exhaust gas temperature, Deg F
- f. NOx steam injection rate, lb/hr
- g. Stack exiting flue gas temperature, Deg F
- h. Steam turbine, MW (gross)
- i. Steam turbine operating hours
- j. Plant auxiliary load, MW (total)
- k. For the process steam:
 - process steam demand, lb/hr
 - demand hours
 - process steam temperature (Deg F), quality (%), pressure (PSIA)and enthalpy (Btu/lb) at plant boundary
- I. Feedwater rate (lb/hr), temperature (Deg F)
- m. Condensate return rate (lb/hr), temperature (Deg F)
- n. Process steam from auxiliary boilers, lb/hr; auxiliary boiler's operating hours

Or APPC may, with CEC concurrence, submit the following operating parameters:

- o. Monthly fuel use (includes quantity and Btu value) as evidenced by an invoice from the gas supplier
- p. Monthly electrical sales (includes kWh) as evidenced by an invoice to Southern California Edison Company
- q. Monthly steam sales (includes quantity and Btu value) as evidenced by an invoice (or equivalent) to APPC
- r. If the rate of items o, p, or q above differs by more than +5, +15, and +10 percent, respectively, from rated conditions, APPC shall provide, at the specific written request of the CEC Staff, an explanation of such anomaly
- s. Feedwater rate (lb/hr) and temperature (Deg F)
- t. Condensate return rate (lbs/hr) and temperature (Deg F)
- u. Process steam from auxiliary boilers, lb/hr; auxiliary boiler's operating hours.

Not less than thirty (30) days prior to the scheduled date for the CEC Decision on the AFC, APPC shall notify the CEC of APPC's preference for either conditions a-n, or o-u.

This report shall also provide information for each month on any partial or total power and/or process steam production curtailment, including duration of curtailment and reasons for curtailment. The report shall be certified by the plant manager.

Response: Monthly average values of the above listed plant operating parameters are included in the tables below. Please note that parameter n. (auxiliary boilers) is not applicable, as there are no auxiliary boilers at this location.

| COG-1 (a-n) | | | | | | | Unit | 91 | | | | | | |
|---|--|--|--|--|---|--|---|---|--|---|--|---|---|---|
| Subsection: | a | b | | | | С | Onic | <u> </u> | | | d | е | f | g |
| | | | | | GTG | - | | | HRSG | | Inlet | GTG | DeNOx | Stack |
| | | | NG/RFG | Butane | Total | HHV | Firing | NG/RFG | HHV | Firing | Air Flow | Exhaust | Steam | Exhaust |
| | MW | Op Hours | <u>lb/hr</u> | <u>lb/hr</u> | <u>lb/hr</u> | BTU/lb | <u>Hours</u> | <u>lb/hr</u> | BTU/lb | <u>Hours</u> | <u>lb/hr</u> | <u>deg F</u> | <u>lb/sec</u> | <u>deg F</u> |
| Jan-21 | 85.3 | 744 | 40982 | 733 | 41715 | 19692 | 744 | 4962 | 19692 | 744 | 2293699 | 1010 | 14.2 | 332 |
| Feb-21 | 85.3 | 672 | 32676 | 9214 | 41890 | 20139 | 672 | 4801 | 20139 | 672 | 2293699 | 1012 | 14.5 | 332 |
| Mar-21 | 85.8 | 743 | 40692 | 958 | 41650 | 20050 | 743 | 9832 | 20050 | 743 | 2293699 | 1023 | 14.3 | 330 |
| Apr-21 | 85.0 | 720 | 41231 | 17 | 41248 | 20024 | 720 | 4830 | 20024 | 720 | 2293699 | 1023 | 14.2 | 332 |
| May-21 | 84.4 | 744 | 40573 | 302 | 40875 | 20236 | 744 | 3472 | 20236 | 744 | 2293699 | 1022 | 14.0 | 333 |
| Jun-21 | 83.9 | 720 | 40824 | 12 | 40836 | 20251 | 720 | 5707 | 20251 | 720 | 2293699 | 1027 | 14.1 | 332 |
| Jul-21 | 82.3 | 744 | 40400 | 26 | 40426 | 20282 | 744 | 4378 | 20282 | 744 | 2293699 | 1027 | 14.0 | 333 |
| Aug-21 | 81.9 | 744 | 40112 | 12 | 40125 | 19905 | 744 | 3867 | 19905 | 744 | 2293699 | 1030 | 13.9 | 332 |
| Sep-21 | 60.8 82.7 | 512 732 | 28700 | 317 | 29017 40629 | 21034 | 512 732 | 3931 3805 | 21034 | 512 | 2293699 2293699 | 754 1000 | 10.5 14.2 | 262 |
| Oct-21 Nov-21 | 79.6 | 648 | 40130 37256 | 500 417 | 37673 | 20643 19989 | 648 | 4760 | 20643 19989 | 731 648 | 2293699 | 921 | 13.0 | 333 313 |
| Dec-21 | 81.2 | 704 | 39359 | 1055 | 40414 | 19665 | 704 | 9470 | 19665 | 704 | 2293699 | 962 | 13.5 | 318 |
| COG-1 (a-n) | 01.2 | 704 | 33333 | 1033 | 40414 | 13003 | Unit | | 19003 | 704 | 2233033 | 302 | 13.3 | 310 |
| Subsection: | a | b | | | | С | Oilit | <i></i> | | | d | е | f | g |
| Subsection. | u | - | | | GTG | | | | HRSG | | Inlet | GTG | DeNOx | Stack |
| | | | NG/RFG | Butane | Total | HHV | Firing | NG/RFG | HHV | Firing | Air Flow | Exhaust | Steam | Exhaust |
| | MW | Op Hours | lb/hr | lb/hr | lb/hr | BTU/lb | Hours | lb/hr | BTU/lb | Hours | lb/hr | deg F | Ib/sec | deg F |
| Jan-21 | 87.6 | 744 | 41326 | 2100 | 43426 | 19692 | 744 | 4962 | 19692 | 744 | 2293699 | 1028 | 14.2 | 341 |
| Feb-21 | 84.0 | 634 | 31357 | 9529 | 40886 | 20139 | 634 | 4801 | 20139 | 670 | 2293699 | 985 | 13.7 | 334 |
| Mar-21 | 88.2 | 743 | 41662 | 2213 | 43875 | 20050 | 743 | 9832 | 20050 | 742 | 2293699 | 1033 | 14.4 | 338 |
| Apr-21 | 76.5 | 634 | 36489 | 1883 | 38372 | 20024 | 634 | 4830 | 20024 | 633 | 2293699 | 919 | 12.7 | 314 |
| May-21 | 86.9 | 744 | 39374 | 4023 | 43398 | 20236 | 744 | 3472 | 20236 | 744 | 2293699 | 1031 | 14.4 | 341 |
| Jun-21 | 78.1 | 656 | 37356 | 1937 | 39293 | 20251 | 656 | 5707 | 20251 | 683 | 2293699 | 965 | 13.0 | 329 |
| Jul-21 | 84.0 | 735 | 40377 | 1787 | 42164 | 20282 | 735 | 4378 | 20282 | 734 | 2293699 | 1026 | 14.1 | 340 |
| Aug-21 | 84.5 | 744 | 40467 | 1756 | 42223 | 19905 | 744 | 3867 | 19905 | 743 | 2293699 | 1037 | 14.1 | 340 |
| Sep-21 | 71.7 | 602 | 34492 | 1651 | 36143 | 21034 | 602 | 3931 | 21034 | 598 | 2293699 | 890 | 12.3 | 310 |
| Oct-21 | 86.6 | 744 | 41166 | 1971 | 43137 | 20643 | 744 | 3805 | 20643 | 744 | 2293699 | 1032 | 14.4 | 342 |
| Nov-21 | 85.9 | 713 | 40830 | 2057 | 42887 | 19989 | 713 | 4760 | 19989 | 720 | 2293699 | 1024 | 14.3 | 340 |
| Dec-21 | | | | | | | | | | | | | | |
| | 87.5 | 744 | 41557 | 2599 | 44156 | 19665 | 744 | 9470 | 19665 | 744 | 2293699 | 1028 | 14.3 | 338 |
| COG-1 (a-n) | | | 41557 | 2599 | 44156 | | 744 Unit | | 19665 | 744 | | | | |
| | 87.5 a | b | 41557 | 2599 | | 19665 c | | | | 744 | d | е | f | g |
| COG-1 (a-n) | | | | | GTG | C | Unit | 93 | HRSG | | d Inlet | e GTG | f DeNOx | g Stack |
| COG-1 (a-n) | a | b | NG/RFG | Butane | GTG Total | c HHV | Unit ! | 93 NG/RFG | HRSG HHV | Firing | d Inlet Air Flow | e GTG Exhaust | f DeNOx Steam | g Stack Exhaust |
| COG-1 (a-n) Subsection: | а <u>МW</u> | b Op Hours | NG/RFG <u>lb/hr</u> | Butane <u>Ib/hr</u> | GTG Total <u>lb/hr</u> | C HHV BTU/Ib | Firing Hours | NG/RFG | HRSG HHV BTU/Ib | Firing Hours | d Inlet Air Flow Ib/hr | e GTG Exhaust deg F | f DeNOx Steam Ib/sec | g Stack Exhaust deg F |
| COG-1 (a-n) Subsection: Jan-21 | <u>MW</u> 75.2 | b Op Hours 705 | NG/RFG lb/hr 37113 | Butane <u>Ib/hr</u> 1641 | GTG Total <u>lb/hr</u> 38755 | HHV BTU/lb 19692 | Firing Hours 705 | 93 NG/RFG <u>lb/hr</u> 4411 | HRSG HHV BTU/lb 19692 | Firing Hours 704 | d Inlet Air Flow Ib/hr 2293699 | e GTG Exhaust deg F 949 | f DeNOx Steam Ib/sec 12.6 | g Stack Exhaust deg F 334 |
| COG-1 (a-n) Subsection: | <u>MW</u> 75.2 79.7 | b Op Hours | NG/RFG <u>lb/hr</u> | Butane <u>Ib/hr</u> | GTG Total <u>lb/hr</u> | C HHV BTU/Ib | Firing Hours | NG/RFG | HRSG HHV BTU/Ib | Firing Hours | d Inlet Air Flow Ib/hr | e GTG Exhaust deg F | f DeNOx Steam Ib/sec | g Stack Exhaust deg F |
| Subsection: Jan-21 Feb-21 Mar-21 | <u>MW</u> 75.2 | b Op Hours 705 652 | NG/RFG b/hr 37113 37717 | Butane <u>lb/hr</u> 1641 1365 | GTG Total <u>lb/hr</u> 38755 39081 | HHV BTU/lb 19692 20139 | Firing Hours 705 652 | NG/RFG lb/hr 4411 4352 | HRSG HHV BTU/lb 19692 20139 | Firing Hours 704 650 | d Inlet Air Flow <u>lb/hr</u> 2293699 2293699 | e GTG Exhaust deg F 949 | f DeNOx Steam lb/sec 12.6 13.5 | g Stack Exhaust deg F 334 340 |
| Subsection: Jan-21 Feb-21 | a MW 75.2 79.7 82.9 | b Op Hours 705 652 743 | NG/RFG <u>lb/hr</u> 37113 37717 40627 | Butane b/hr 1641 1365 1892 | GTG Total b/hr 38755 39081 42520 | HHV BTU/lb 19692 20139 20050 | Firing Hours 705 652 743 | NG/RFG lb/hr 4411 4352 10208 | HRSG HHV BTU/lb 19692 20139 20050 | Firing Hours 704 650 743 | d Inlet Air Flow <u>lb/hr</u> 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 | f DeNOx Steam Ib/sec 12.6 13.5 13.8 | g Stack Exhaust deg F 334 340 340 |
| Jan-21 Feb-21 Mar-21 Apr-21 | MW 75.2 79.7 82.9 81.3 | 0p Hours 705 652 743 720 | NG/RFG b/hr 37113 37717 40627 40133 | Butane <u>lb/hr</u> 1641 1365 1892 1869 | GTG Total Ib/hr 38755 39081 42520 42002 | HHV BTU/lb 19692 20139 20050 20024 | Firing Hours 705 652 743 720 | 93 NG/RFG <u>Ib/hr</u> 4411 4352 10208 4884 | HRSG HHV BTU/lb 19692 20139 20050 20024 | Firing Hours 704 650 743 720 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 | f DeNOx Steam Ib/sec 12.6 13.5 13.8 | g Stack Exhaust deg F 334 340 340 341 |
| Jan-21 Feb-21 Mar-21 Apr-21 May-21 May-21 | MW 75.2 79.7 82.9 81.3 80.2 | Op Hours 705 652 743 720 744 | NG/RFG lb/hr 37113 37717 40627 40133 39538 | Butane b/hr 1641 1365 1892 1869 1843 | GTG Total lb/hr 38755 39081 42520 42002 41381 | HHV BTU/lb 19692 20139 20050 20024 20236 | Firing Hours 705 652 743 720 744 | NG/RFG lb/hr 4411 4352 10208 4884 3433 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 | Firing Hours 704 650 743 720 744 | d Inlet Air Flow <u>lb/hr</u> 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 | f DeNOx Steam <u>lb/sec</u> 12.6 13.5 13.8 13.6 | g Stack Exhaust deg F 334 340 340 341 341 |
| Jan-21 Feb-21 Mar-21 May-21 Jun-21 Jun-21 Jun-21 Jun-21 Jun-21 Aug-21 | MW 75.2 79.7 82.9 81.3 80.2 79.9 | 0p Hours 705 652 743 720 744 720 | NG/RFG <u>lb/hr</u> 37113 37717 40627 40133 39538 39571 | Butane b/hr 1641 1365 1892 1869 1843 2066 | GTG Total lb/hr 38755 39081 42520 42002 41381 41637 | HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 | Firing Hours 705 652 743 720 744 720 | NG/RFG b/hr 4411 4352 10208 4884 3433 5690 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 | Firing Hours 704 650 743 720 744 720 | d Inlet Air Flow <u>lb/hr</u> 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1027 | f DeNOx Steam <u>lb/sec</u> 12.6 13.5 13.8 13.6 13.4 | g Stack Exhaust deg F 334 340 340 341 341 341 341 |
| Jan-21 Feb-21 Mar-21 Jun-21 Jun-21 Jun-21 Jun-21 Jul-21 Jul-21 Sep-21 | MW 75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 | 0p Hours 705 652 743 720 744 720 744 744 720 | NG/RFG lb/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 | C BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 | Firing Hours 705 652 743 720 744 720 | NG/RFG b/hr 4411 4352 10208 4884 3433 5690 4313 3744 7390 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 | Firing Hours 704 650 743 720 744 720 744 720 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1027 1029 1029 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 | g Stack Exhaust deg F 334 340 340 341 341 341 341 341 |
| Jan-21 Feb-21 Mar-21 Apr-21 Jul-21 Jul-21 Aug-21 Sep-21 Oct-21 | MW 75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 | 0p Hours 705 652 743 720 744 720 744 720 744 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 | C BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 | Firing Hours 705 652 743 720 744 720 744 720 744 | NG/RFG b/hr 4411 4352 10208 4884 3433 5690 4313 3744 7390 4038 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 | Firing Hours 704 650 743 720 744 720 744 720 744 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1027 1029 1029 1029 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 | g Stack Exhaust deg F 334 340 341 341 341 341 341 341 341 |
| Jan-21 Feb-21 Mar-21 May-21 Jul-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 | a MW 75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 | 0p Hours 705 652 743 720 744 720 744 720 744 720 744 696 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 | Firing Hours 705 652 743 720 744 720 744 720 744 720 744 696 | NG/RFG b/hr 4411 4352 10208 4884 3433 3744 7390 4038 5545 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 | Firing Hours 704 650 743 720 744 720 744 720 744 695 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1027 1029 1029 1029 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.2 13.0 14.5 14.3 | g Stack Exhaust deg F 334 340 340 341 341 341 341 341 341 343 |
| Jan-21 Feb-21 Mar-21 Apr-21 Jul-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 | MW 75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 | 0p Hours 705 652 743 720 744 720 744 720 744 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 | C BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 | NG/RFG b/hr 4411 4352 10208 4884 3433 55690 4313 3744 7390 4038 5545 970 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 | Firing Hours 704 650 743 720 744 720 744 720 744 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1027 1029 1029 1029 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 | g Stack Exhaust deg F 334 340 341 341 341 341 341 341 341 |
| GOG-1 (a-n) Subsection: Jan-21 Feb-21 Mar-21 Apr-21 Jun-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) | a 75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 | 0p Hours 705 652 743 720 744 720 744 720 744 696 59 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 | C HHV BTU/Ib 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 | Firing Hours 705 652 743 720 744 720 744 720 744 720 744 696 | NG/RFG b/hr 4411 4352 10208 4884 3433 55690 4313 3744 7390 4038 5545 970 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 | Firing Hours 704 650 743 720 744 720 744 720 744 695 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1027 1029 1029 1029 1029 1025 992 | f DeNOx Steam Ib/sec 12.6 13.5 13.8 13.6 13.4 13.2 13.0 14.5 14.3 13.7 | g Stack Exhaust deg F 334 340 340 341 341 341 341 341 341 343 348 388 |
| Jan-21 Feb-21 Mar-21 Apr-21 Jul-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 | a MW 75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 | 0p Hours 705 652 743 720 744 720 744 720 744 720 744 696 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 | NG/RFG b/hr 4411 4352 10208 4884 3433 55690 4313 3744 7390 4038 5545 970 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 | Firing Hours 704 650 743 720 744 720 744 720 744 695 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1027 1029 1029 1029 1029 1025 992 136 | f DeNOx Steam Ib/sec 12.6 13.5 13.8 13.6 13.4 13.2 13.0 14.5 14.3 13.7 1.3 | g Stack Exhaust deg F 334 340 340 341 341 341 341 341 341 343 388 88 |
| GOG-1 (a-n) Subsection: Jan-21 Feb-21 Mar-21 Apr-21 Jun-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) | a 75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 | 0p Hours 705 652 743 720 744 720 744 720 744 696 59 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 | Butane bb/hr 1641 1365 1892 1869 1843 2066 2525 2393 2290 2236 323 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41793 41797 40752 3617 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit | NG/RFG Ib/hr | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 20282 20382 21034 20643 19989 19665 | Firing Hours 704 650 743 720 744 720 744 720 744 695 60 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2093699 2293699 2193699 2293699 2193699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1029 1025 992 136 | f DeNOx Steam Ib/sec 12.6 13.5 13.8 13.6 13.4 13.2 13.0 14.5 14.3 13.7 1.3 | g Stack Exhaust deg F 334 340 340 341 341 341 341 341 343 338 88 |
| GOG-1 (a-n) Subsection: Jan-21 Feb-21 Mar-21 Apr-21 Jun-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) | a MW 75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 | 0p Hours 705 652 743 720 744 720 744 720 744 696 59 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG | Butane lb/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 323 Butane | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit: | NG/RFG Ib/hr | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV | Firing Hours 704 650 743 720 744 720 744 720 744 695 60 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2193699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1029 1025 992 136 e GTG Exhaust | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.2 13.0 14.5 14.3 13.7 1.3 | g Stack Exhaust deg F 334 340 340 341 341 341 341 341 343 338 88 g Stack Exhaust |
| Jan-21 Feb-21 Mar-21 Apr-21 Jun-21 Jun-21 Jun-21 Jun-21 Jun-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) Subsection: | a 75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 | b | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr | Butane lb/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 323 Butane lb/hr | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/lb | Firing Hours 705 652 743 720 744 720 744 744 696 59 Unit: | NG/RFG Ib/hr | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/lb | Firing Hours 704 650 743 720 744 720 744 740 740 695 60 Firing Hours | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 219169 d Inlet Air Flow Ib/hr | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1025 992 136 e GTG Exhaust deg F | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec | ## Stack Exhaust |
| Jan-21 Feb-21 Mar-21 Jun-21 Jun-21 Jun-21 Jun-21 Jun-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) Subsection: | mw/75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 mw/84.5 | Dp Hours 705 652 743 720 744 720 744 720 744 696 59 D | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 323 Butane b/hr 705 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/lb 19692 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit: | NG/RFG b/hr 4411 4352 10208 4884 3433 5690 4313 3744 7390 4038 5545 970 94 NG/RFG b/hr 4922 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/lb 19692 | Firing Hours 704 650 743 720 744 720 744 744 720 744 695 60 Firing Hours 744 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1025 992 136 e GTG Exhaust deg F 1024 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec 14.1 | ## Stack Exhaust deg F 334 340 341 341 341 341 343 338 88 ## ## ## ## ## ## ## ## ## ## ## ## # |
| Jan-21 Feb-21 Mar-21 Jul-21 Jul-21 Jul-21 Aug-21 Sep-21 Oct-21 Dec-21 COG-1 (a-n) Subsection: Jan-21 Feb-21 | mW/75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 a MW/84.5 84.4 | 705 652 743 720 744 720 744 744 720 744 696 59 b | NG/RFG b/hr 37113 37717 40627 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr 40634 39317 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 323 Butane b/hr 705 551 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 39868 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/lb 19692 20139 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit: | NG/RFG b/hr 4411 4352 10208 4884 3433 5690 4313 3744 7390 4038 5545 970 94 NG/RFG b/hr 4922 4821 | HRSG HHV BTU/lb 19692 20139 20050 200236 20225 20228 19905 21034 20643 19989 19665 HRSG HHV BTU/lb 19692 20139 | Firing Hours 704 650 743 720 744 720 744 720 744 695 60 Firing Hours 744 672 | d Inlet Air Flow b/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1025 992 136 e GTG Exhaust deg F 1024 1023 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec 14.1 14.0 | ## Stack Exhaust |
| Jan-21 Feb-21 Mar-21 Jul-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) Subsection: Jan-21 Feb-21 Mar-21 | mW/75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 a MW/84.5 84.4 26.0 | Dp Hours 705 652 743 720 744 720 744 696 59 Dp Hours 744 672 219 744 672 219 | NG/RFG b/hr 37113 37717 40627 40123 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr 40634 39317 12036 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 323 Butane b/hr 705 551 399 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 39868 12436 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/lb 19692 20139 20050 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit: Firing Hours 744 672 | NG/RFG b/hr | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/lb 19692 20139 20050 | Firing Hours 704 650 743 720 744 720 744 744 695 60 Firing Hours 744 672 211 | d Inlet Air Flow Ib/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1025 992 136 Exhaust deg F 1024 1023 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec 14.1 14.0 5.3 | ## Stack Exhaust deg F 334 340 341 341 341 341 341 341 341 341 341 345 88 ## ## ## ## ## ## ## ## ## ## ## ## # |
| Jan-21 Feb-21 Mar-21 Jul-21 Jul-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) Subsection: Jan-21 Feb-21 Agr-21 Agr-21 Agr-21 Agr-21 | mW/75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 a MW/84.5 84.4 26.0 85.7 | Dp Hours 705 652 743 720 744 720 744 696 59 Dp Hours 744 672 219 720 | NG/RFG b/hr 37113 37717 40627 40123 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr 40634 39317 12036 41637 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 323 Butane b/hr 705 551 399 884 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 39868 12436 42522 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/lb 19692 20139 20050 20024 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit: Firing Hours 744 672 219 | NG/RFG b/hr 4411 4352 10208 4884 3433 5690 4313 3744 7390 4038 5545 970 94 NG/RFG b/hr 4922 4821 614 4902 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/lb 19692 20139 20050 20024 | Firing Hours 704 650 743 720 744 720 744 720 744 695 60 Firing Hours 744 672 211 720 | d Inlet Air Flow b/hr 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1025 992 136 e GTG Exhaust deg F 1024 1023 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec 14.1 14.0 5.3 14.4 | ## Stack Exhaust deg F 334 340 341 341 341 341 341 341 341 341 341 345 88 ## ## ## ## ## ## ## ## ## ## ## ## # |
| Jan-21 Feb-21 Mar-21 Jul-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) Subsection: Jan-21 Feb-21 Mar-21 | mW/75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 a MW/84.5 84.4 26.0 | Dp Hours 705 652 743 720 744 720 744 696 59 Dp Hours 744 672 219 744 672 219 | NG/RFG b/hr 37113 37717 40627 40123 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr 40634 39317 12036 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 323 Butane b/hr 705 551 399 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 39868 12436 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/lb 19692 20139 20050 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit: Firing Hours 744 672 | NG/RFG b/hr | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/lb 19692 20139 20050 | Firing Hours 704 650 743 720 744 720 744 744 695 60 Firing Hours 744 672 211 | d Inlet Air Flow Ib/hr 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1025 992 136 Exhaust deg F 1024 1023 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec 14.1 14.0 5.3 | ## Stack Exhaust deg F 334 340 341 341 341 341 341 341 341 341 341 345 88 ## ## ## ## ## ## ## ## ## ## ## ## # |
| Jan-21 Feb-21 Mar-21 Jul-21 Jul-21 Aug-21 Sep-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) Subsection: Jan-21 Feb-21 Mar-21 May-21 Jul-21 Aug-21 | mW/75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 a MW/84.5 84.4 26.0 85.7 85.4 | Dp Hours 705 652 743 720 744 720 744 696 59 Dp Hours 744 672 219 720 744 672 219 720 744 744 745 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr 40634 39317 12036 41637 41389 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 323 Butane b/hr 705 551 399 884 496 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 39868 12436 42522 41885 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/lb 19692 20139 20050 20024 20236 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit: Firing Hours 744 672 219 720 744 | NG/RFG b/hr | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/lb 19692 20139 20050 20024 20236 | Firing Hours 704 650 743 720 744 720 744 720 744 695 60 Firing Hours 744 672 211 720 744 | d Inlet Air Flow Ib/hr 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1025 992 136 e GTG Exhaust deg F 1024 1023 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec 14.1 14.0 5.3 14.4 14.3 | ## Stack Exhaust deg F 334 340 341 341 341 341 343 338 88 ## ## ## ## ## ## ## ## ## ## ## ## # |
| Jan-21 Feb-21 May-21 Jul-21 Sep-21 Oct-21 Nov-21 Dec-21 COG-1(a-n) Subsection: Jan-21 Feb-21 May-21 Jun-21 Jun-21 Jun-21 Jun-21 Jun-21 Jun-21 Jun-21 Jun-21 Jun-21 | mw/75.2 79.7 82.9 81.3 80.2 79.7 76.8 79.2 79.5 77.4 6.6 a mw/84.5 84.4 26.0 85.7 85.4 84.8 | Dp Hours 705 652 743 720 744 720 744 720 744 696 59 b Op Hours 744 672 219 720 744 720 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr 40634 39317 12036 41637 41389 41264 | Butane b/hr 1641 1365 1892 1869 1843 2066 2210 2525 2393 2290 2236 323 Butane b/hr 705 551 399 884 496 364 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 39868 12436 42522 41885 41629 | C HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/lb 19692 20139 20050 20024 20236 20251 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit: Firing Hours 707 407 407 407 407 407 407 407 407 407 | NG/RFG b/hr 4411 4352 10208 4884 3433 35690 4313 3744 7390 4038 5545 970 94 NG/RFG b/hr 4922 4821 614 4902 3407 5715 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 | Firing Hours 704 650 743 720 744 744 720 744 695 60 Firing Hours 744 672 211 720 744 720 | d Inlet Air Flow Ib/hr 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1027 1029 1029 1029 1025 992 136 e GTG Exhaust deg F 1024 1025 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec 14.1 14.0 5.3 14.4 14.3 14.3 | ## Stack Exhaust deg F 334 340 341 341 343 338 88 ## ## ## ## ## ## ## ## ## ## ## ## # |
| GOG-1 (a-n) Subsection: Jan-21 Feb-21 Mar-21 Jul-21 Jul-21 Sep-21 Oct-21 Nov-21 Dec-21 COG-1 (a-n) Subsection: Jan-21 Feb-21 Mar-21 Apr-21 Jul-21 Jul-21 Jul-21 Jul-21 Jul-21 | mw/75.2 79.7 82.9 81.3 80.2 79.7 76.8 79.2 79.5 77.4 6.6 a mw/84.5 84.4 26.0 85.7 85.4 84.8 83.7 | Op Hours 705 652 743 720 744 720 744 696 59 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr 40634 40637 41389 41264 41066 | Butane bb/hr 1641 1365 1892 1869 1843 2066 2525 2393 2290 2236 323 Butane bb/hr 705 5551 399 884 496 364 429 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 39868 12436 42522 41885 41629 41495 | C HHV BTU/Ib 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/Ib 19692 20139 20050 20024 20236 20251 20282 | Firing Hours 705 652 743 720 744 744 720 744 744 720 744 696 59 Unit: Firing Hours 744 672 219 720 744 720 744 744 744 | NG/RFG b/hr | HRSG HHV BTU/Ib 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/Ib 19692 20139 20050 20024 20236 20251 20282 | Firing Hours 704 650 743 720 744 744 720 744 695 60 Firing Hours 744 695 211 720 744 744 720 744 744 744 744 745 744 744 745 744 744 | d Inlet Air Flow Ib/hr 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1027 1029 1029 1029 1025 992 136 e GTG Exhaust deg F 1023 367 1035 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec 14.1 14.0 5.3 14.4 14.3 14.3 14.3 | g Stack Exhaust deg F 334 340 340 341 341 341 341 341 343 338 88 g Stack Exhaust deg F 350 181 340 341 340 |
| Jan-21 Feb-21 May-21 Jul-21 Aug-21 Jul-21 Jul-21 | mw/75.2 79.7 82.9 81.3 80.2 79.9 77.7 76.8 79.2 79.5 77.4 6.6 a mw/84.5 84.4 26.0 85.7 85.4 84.8 83.7 83.1 | Op Hours 705 652 743 720 744 720 744 696 59 Op Hours 744 672 219 720 744 720 744 720 744 720 744 720 744 720 744 744 744 744 744 744 744 744 744 744 744 744 744 744 745 765 | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr 40634 40637 41389 41264 41066 40695 | Butane bb/hr 1641 1365 1892 1869 1843 2066 2525 2393 2290 2236 323 Butane bb/hr 705 5551 399 884 496 364 429 412 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 39868 12436 42522 41885 41629 41495 41107 | C HHV BTU/Ib 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/Ib 19692 20139 20050 20024 20236 20251 20282 19905 | Firing Hours 705 652 743 720 744 744 720 744 744 696 59 Unit: Firing Hours 744 672 219 720 744 744 740 744 744 744 | NG/RFG b/hr | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 | Firing Hours 704 650 743 720 744 744 744 744 7695 60 Firing Hours 744 695 211 720 744 720 744 744 744 744 744 | d Inlet Air Flow Ib/hr 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1027 1029 1029 1029 1025 992 136 Exhaust deg F 1023 367 1035 1038 | f DeNOx Steam lb/sec 12.6 13.5 13.8 13.6 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam lb/sec 14.1 14.0 5.3 14.3 14.3 14.3 14.3 14.3 | g Stack Exhaust deg F 334 340 340 341 341 341 341 341 343 338 88 g Stack Exhaust deg F 350 181 340 341 341 340 340 340 340 340 |
| Jan-21 | mw/5.2 79.7 82.9 81.3 80.2 79.7 76.8 79.2 79.5 77.4 6.6 a mw/84.5 84.4 26.0 85.7 85.4 84.8 83.7 83.1 84.8 | Name | NG/RFG b/hr 37113 37717 40627 40133 39538 39571 38950 38481 39400 39507 38516 3294 NG/RFG b/hr 40634 39317 12036 41637 41389 41264 41066 40695 41346 | Butane bb/hr 1641 1365 1892 1869 1843 2066 2525 2393 2290 2236 323 Butane bb/hr 705 551 399 884 496 364 429 412 726 | GTG Total b/hr 38755 39081 42520 42002 41381 41637 41160 41006 41793 41797 40752 3617 GTG Total b/hr 41339 39868 12436 42522 41885 41629 41495 41107 42072 | C HHV BTU/Ib 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 C HHV BTU/Ib 19692 20139 20024 20236 20251 20282 19905 20024 20236 20251 20282 19905 21034 | Firing Hours 705 652 743 720 744 720 744 720 744 696 59 Unit Firing Hours 744 672 720 744 744 720 744 744 720 744 720 744 720 | 93 NG/RFG b/hr 4411 4352 10208 4884 3433 5690 4313 3744 7390 4038 5545 970 94 NG/RFG b/hr 4922 4821 4902 4821 4902 3407 5715 4366 3769 7283 | HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 21034 20643 19989 19665 HRSG HHV BTU/lb 19692 20139 20050 20024 20236 20251 20282 19905 | Firing Hours 704 650 743 720 744 720 744 744 720 744 695 60 Firing Hours 744 672 211 720 744 720 744 720 744 720 | d Inlet Air Flow Ib/hr 2293699 | e GTG Exhaust deg F 949 992 1023 1023 1023 1025 1029 1029 1025 992 136 Exhaust deg F 1024 1023 1024 1023 1024 1023 1024 1023 1035 1038 1038 1038 1038 | f DeNOx Steam b/sec 12.6 13.5 13.8 13.6 13.4 13.4 13.2 13.0 14.5 14.3 13.7 1.3 f DeNOx Steam b/sec 14.1 14.0 5.3 14.4 14.3 14.3 14.3 14.3 14.3 | g Stack Exhaust deg F 334 340 340 341 341 341 341 341 341 341 341 341 341 |

| COG-1 (a-n) | STG 1 | | S | STG 2 Plant L | | | Load 600# Steam | | | | 150# 5 | Steam | |
|-------------|-------|--------------|----|---------------|-----------|--------|-----------------|-------------|-------|--------|--------------|-------------|-------|
| Subsection: | h | i | h | i | j | | | k | | | | k | |
| | MW | <u>Hours</u> | MW | <u>Hours</u> | <u>MW</u> | mlb/hr | <u>Hours</u> | <u>PSIG</u> | deg F | mlb/hr | <u>Hours</u> | <u>PSIG</u> | deg F |
| Jan-20 | 15 | 733 | 1 | 63 | 81 | 1136 | 744 | 620 | 750 | 0.106 | 744 | 152 | 358 |
| Feb-20 | 10 | 436 | 6 | 245 | 83 | 1117 | 672 | 620 | 750 | 0.106 | 672 | 152 | 358 |
| Mar-20 | 15 | 735 | 0 | 0 | 82 | 1125 | 744 | 620 | 749 | 0.109 | 744 | 152 | 358 |
| Apr-20 | 0 | 15 | 16 | 708 | 84 | 1148 | 720 | 620 | 749 | 0.087 | 720 | 152 | 358 |
| May-20 | 0 | 0 | 16 | 737 | 87 | 1095 | 744 | 620 | 749 | 0.079 | 744 | 152 | 358 |
| Jun-20 | 5 | 177 | 15 | 611 | 88 | 1135 | 720 | 620 | 749 | 0.065 | 720 | 152 | 358 |
| Jul-20 | 1 | 42 | 17 | 714 | 89 | 1094 | 744 | 620 | 749 | 0.048 | 744 | 152 | 358 |
| Aug-20 | 0 | 0 | 19 | 733 | 89 | 1061 | 744 | 620 | 749 | 0.083 | 744 | 152 | 358 |
| Sep-20 | 0 | 8 | 19 | 684 | 83 | 1077 | 720 | 619 | 749 | 0.358 | 720 | 152 | 359 |
| Oct-20 | 11 | 374 | 11 | 375 | 89 | 1031 | 744 | 620 | 749 | 0.147 | 744 | 152 | 358 |
| Nov-20 | 18 | 714 | 0 | 0 | 89 | 1068 | 720 | 620 | 750 | 0.197 | 720 | 152 | 358 |
| Dec-20 | 0 | 15 | 15 | 708 | 87 | 1078 | 744 | 620 | 749 | 0.194 | 744 | 152 | 358 |

| COG-1 (a-n) | Total Fee | dwater | Total Co | Total Condensate | | |
|-------------|-----------|--------|----------|-------------------------|-----|--|
| Subsection: | - 1 | _ | m | m m | | |
| | mlb/hr | deg F | mlb/hr | deg F | | |
| Jan-20 | 1742 | 250 | 458 | - | N/A | |
| Feb-20 | 1701 | 250 | 451 | - | N/A | |
| Mar-20 | 1604 | 250 | 440 | - | N/A | |
| Apr-20 | 1711 | 250 | 488 | - | N/A | |
| May-20 | 1682 | 250 | 463 | - | N/A | |
| Jun-20 | 1725 | 250 | 511 | - | N/A | |
| Jul-20 | 1672 | 250 | 435 | - | N/A | |
| Aug-20 | 1651 | 250 | 421 | - | N/A | |
| Sep-20 | 1651 | 250 | 478 | - | N/A | |
| Oct-20 | 1628 | 250 | 482 | - | N/A | |
| Nov-20 | 1618 | 250 | 466 | - | N/A | |
| Dec-20 | 1515 | 250 | 477 | - | N/A | |

DEMAND CONFORMANCE CONDITIONS OF CERTIFICATION

DC-2 The Energy Commission shall retain jurisdiction to require ARCO to periodically report on the performance of its facility and the payments made by SCE to purchase power from the facility.

Verification: On an annual basis following construction, ARCO shall report the monthly generation provided to SCE and the monthly payments received from SCE. Payments shall be disaggregated by capacity (firm and as-available), start-up and energy. ARCO shall provide the CEC a copy of the Prescribed Dispatch Schedule for the facility.

Response: Monthly values for generation provided to SCE and monthly payments disaggregated by capacity (firm and as-available) are included in the table below. Watson no

longer follows a Prescribed Dispatch Schedule from SCE. All power is baseload firm under current PPA.

| | Demand Conformance Conditions of Certification DC-2 | | | | | | | | |
|--------|---|-----------------------|---------------------|--------------------|--|--|--|--|--|
| | SCE Sales | Energy | Capacity Payment - | Capacity Payment - | | | | | |
| Month | Volume | Payment | Firm | As Available | | | | | |
| | MWh | \$ | \$ | \$ | | | | | |
| Jan-21 | 194,013 | \$7,269,413.13 | \$356,734.55 | \$0.00 | | | | | |
| Feb-21 | 172,199 | \$40,122,362.69 | \$355,194.56 | \$0.00 | | | | | |
| Mar-21 | 153,924 | \$5,258,991.32 | \$292,392.21 | \$0.00 | | | | | |
| Apr-21 | 182,194 | \$6,540,791.41 | \$350,015.94 | \$0.00 | | | | | |
| May-21 | 191,870 | \$6,806,381.26 | \$356,232.96 | \$0.00 | | | | | |
| Jun-21 | 181,174 | \$8,875,489.82 | \$3,712,862.01 | \$0.00 | | | | | |
| Jul-21 | 185,437 | \$11,274,822.60 | \$3,790,164.81 | \$0.00 | | | | | |
| Aug-21 | 185,300 | \$11,164,564.13 | \$3,790,130.74 | \$0.00 | | | | | |
| Sep-21 | 161,609 | \$11,925,991.17 | \$2,837,845.22 | \$0.00 | | | | | |
| Oct-21 | 191,417 | \$11,174,273.32 | \$353,569.67 | \$0.00 | | | | | |
| Nov-21 | 170,019 | \$9,536,452.04 | \$316,411.78 | \$0.00 | | | | | |
| Dec-21 | <u>135,886</u> | <u>\$9,149,258.54</u> | <u>\$351,392.46</u> | <u>\$0.00</u> | | | | | |
| Total | 2,105,042 | \$139,098,791.43 | \$16,862,946.91 | \$0.00 | | | | | |

PUBLIC HEALTH CONDITIONS OF CERTIFICATION

PH-2 APPC shall comply with all emission regulations established by the U.S. Environmental Protection Agency (EPA), South Coast Air Quality Management District (SCAQMD), and the California Air Resources Board (CARB) regarding the use of a non-chromium treatment method as an anti-fouling/corrosive agent in the cooling towers, and the prohibition of Hexavalent Chromium additives.

Verification: APPC shall submit to the CEC, within the Annual Compliance Report, documentation of their compliance with all EPA, SCAQMD, and CARB emission regulations for use of antifouling/corrosive agents in the cooling towers.

Response: In compliance with EPA, SCAQMD and CARB emission regulations for the use of antifouling/corrosive agents in cooling towers, APPC/Watson does not use any chemical products that contain chromium in its cooling towers. It is currently using Solenis Performax CC6200, a non-chromium product, as an anti-fouling agent in its cooling towers.

POWER PLANT RELIABILITY CONDITIONS OF CERTIFICATION

RELI-3 APPC shall file with the CEC an annual report documenting the plant availability and capacity factors achieved.

Verification: Beginning with commercial operation, APPC shall file an annual report containing the following:

- a. Operating hours, outage hours, cause of outage and downtime for each piece of major equipment including the following:
 - Combustion turbine/generators Heat recovery steam generators
 - Feedwater pumps
 - Steam turbine/generators
 - Condensers
 - Condensate pumps
 - Cooling water pumps
 - Controls
- b. For each forced outage, a precise identification of the equipment whose failure resulted in the forced outage and the resulting forced outage hours.
- c. Identification of equipment or other causes (such as curtailment) for which planned outage was instituted in any given month.
- d. Annual plant availability and capacity factors, per EPRI definitions.

Response: Information regarding operating hours, outage causes, downtime and annual plant availability and capacity factors are shown in the two tables below.

| | RELI-3: Power Plant Reliability - 2021 | | | | | | | | |
|--------------------------|--|----------------------|----------------------|------------|--|--|--|--|--|
| CEC Generator Unit ID | Event Type | Start Date | End Date | Duration | Cause Code | | | | |
| GN91 | U2 - Forced - Delayed | 09/22/2021 08:27 PPT | 10/01/2021 11:58 PPT | 3:31 | 6090 - Other HRSG tube Problems | | | | |
| GN91 | U2 - Forced - Delayed | 11/28/2021 00:50 PPT | 12/02/2021 16:38 PPT | 15:48 | 6090 - Other HRSG tube Problems | | | | |
| GN92 | MO - Maintenance | 04/09/2021 21:00 PPT | 04/13/2021 12:11 PPT | 87:11:00 | 6090 - Other HRSG tube Problems | | | | |
| GN92 | U1 - Forced - Immediate | 06/21/2021 20:38 PPT | 06/24/2021 02:46 PPT | 54:08:00 | 4700 - Generator voltage control | | | | |
| GN92 | U2 - Forced - Delayed | 07/14/2021 23:21 PPT | 07/15/2021 08:42 PPT | 9:21:00 | 3649 - Other AC instrument power problems | | | | |
| GN92 | U3 - Forced - Postponed | 09/18/2021 11:07 PPT | 09/23/2021 09:42 PPT | 22:35 | 4805 - Generator Bus Duct Cooling System | | | | |
| GN92 | MO - Maintenance | 11/20/2021 08:12 PPT | 11/20/2021 15:17 PPT | 7:05:00 | 3610 - Switchyard circuit breakers - (not outside management control) | | | | |
| GN93 | U1 - Forced - Immediate | 02/12/2021 15:05 PPT | 02/13/2021 12:16 PPT | 21:11 | 5041 - Fuel piping and valves A | | | | |
| GN93 | PO - Planned | 11/26/2021 21:08 PPT | 11/27/2021 21:33 PPT | 0:25 | 5260 - Major overhaul (use for non-specific overhaul only; see page B-1) A | | | | |
| GN93 | PO - Planned | 12/03/2021 11:50 PPT | 01/01/2022 00:00 PPT | 684:10:00 | 5260 - Major overhaul (use for non-specific overhaul only; see page B-1) A | | | | |
| GN94 | PO - Planned | 03/05/2021 21:05 PPT | 03/19/2021 14:40 PPT | 16:35 | 5670 - Hot end inspection A | | | | |
| GN94 | U1 - Forced - Immediate | 03/19/2021 15:08 PPT | 03/20/2021 01:32 PPT | 10:24:00 | 4307 - Automatic turbine control systems - electro-hydraulic - digital | | | | |
| GN94 | U2 - Forced - Delayed | 03/20/2021 09:13 PPT | 03/20/2021 21:27 PPT | 12:14:00 | 0530 - Other main steam system problems | | | | |
| GN94 | U1 - Forced - Immediate | 03/22/2021 05:17 PPT | 03/29/2021 12:38 PPT | 7:21 | 4307 - Automatic turbine control systems - electro-hydraulic - digital | | | | |
| GN94 | U1 - Forced - Immediate | 10/05/2021 17:10 PPT | 10/06/2021 10:52 PPT | 17:42:00 | 3980 - Programmable Logic Controller (PLC) | | | | |
| GN94 | U2 - Forced - Delayed | 11/05/2021 21:17 PPT | 11/09/2021 14:40 PPT | 90:23:00 | 6090 - Other HRSG tube Problems | | | | |
| GN95 | RS - Reserve Shutdown | 02/01/2021 16:42 PPT | 02/11/2021 07:36 PPT | 230:54:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 04/01/2021 15:09 PPT | 06/14/2021 13:12 PPT | 1774:03:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 06/20/2021 09:10 PPT | 06/28/2021 08:22 PPT | 191:12:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 06/30/2021 23:02 PPT | 07/12/2021 12:35 PPT | 277:33:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 07/13/2021 06:12 PPT | 07/26/2021 18:46 PPT | 324:34:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 07/26/2021 20:13 PPT | 07/27/2021 15:39 PPT | 19:26:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 07/27/2021 22:07 PPT | 07/28/2021 18:22 PPT | 20:15:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 07/28/2021 21:05 PPT | 07/29/2021 10:58 PPT | 13:53:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 07/30/2021 22:07 PPT | 08/15/2021 18:10 PPT | 380:03:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 08/15/2021 20:04 PPT | 09/08/2021 16:42 PPT | 572:38:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 09/08/2021 20:31 PPT | 09/09/2021 16:30 PPT | 19:59:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 09/10/2021 08:05 PPT | 10/01/2021 14:29 PPT | 510:24:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 10/01/2021 19:02 PPT | 10/16/2021 14:25 PPT | 355:23:00 | 0000 - Reserve shutdown | | | | |
| GN95 | RS - Reserve Shutdown | 12/01/2021 15:58 PPT | 01/01/2022 00:00 PPT | 728:02:00 | 0000 - Reserve shutdown | | | | |
| GN96 | PO - Planned | 01/01/2021 00:00 PPT | 01/28/2021 15:35 PPT | 663:35:00 | 4830 - Major overhaul (720 hrs or longer) (use for non-specific overhaul only; see page B-1) | | | | |
| GN96 | RS - Reserve Shutdown | 02/11/2021 09:03 PPT | 04/15/2021 13:17 PPT | 1515:14:00 | 0000 - Reserve shutdown | | | | |
| GN96 | U1 - Forced - Immediate | 09/17/2021 19:58 PPT | 09/17/2021 21:23 PPT | 1:25:00 | 4041 - HP steam turbine thrust bearings | | | | |
| GN96 | RS - Reserve Shutdown | 09/22/2021 08:13 PPT | 09/23/2021 11:52 PPT | 27:39:00 | 0000 - Reserve shutdown | | | | |
| GN96 | RS - Reserve Shutdown | 10/16/2021 18:43 PPT | 12/01/2021 15:41 PPT | 1101:58:00 | 0000 - Reserve shutdown | | | | |

| RELI-3: Operating Hours and Availability - 2021 | | | | | | | | |
|---|----------------------|-------------------|--|--|--|--|--|--|
| CEC Generator Unit ID | 2021 Operating Hours | 2021 Availability | | | | | | |
| GN91 | 8,427 | 96.2% | | | | | | |
| GN92 | 8,435 | 96.2% | | | | | | |
| GN93 | 7,990 | 91.3% | | | | | | |
| GN94 | 8,125 | 92.8% | | | | | | |
| GN95 | 3,358 | 38.5% | | | | | | |
| GN96 | 5,821 | 66.3% | | | | | | |

PUBLIC AND WORKER SAFETY CONDITIONS OF CERTIFICATION

SAFETY-11 APPC and the Los Angeles County Fire Department shall annually reexamine the fire protection program.

Verification: APPC shall note and summarize the joint re-examination to the fire protection program in its annual compliance report to the CEC.

Response: APPC/Watson's fire protection program is covered by a permit issued by the County of Los Angeles Fire Department and follows their standard review/renewal cycle. This review/renewal process is jointly conducted with the on-site Fire Chief responsible for the APPC/Watson facility. Fire protection equipment at the facility is inspected, tested and maintained in accordance with NFPA, ANSI and OSHA standards.

SAFETY-13 APPC shall facilitate onsite worker safety inspections conducted by Cal/DOSH during construction and operation of the facility when an employee complaint has been received.

Verification: APPC shall request Cal/DOSH to notify the CEC in writing in the event of a violation that will involve Cal/DOSH action affecting the construction and operation schedule and shall notify the CEC of the necessary corrective action. APPC shall note any Cal/DOSH inspections and actions in its periodic compliance reports.

Response: In the calendar year of 2021, APPC/Watson Cogen has not had any violations and has not received any complaints that would warrant reporting to Cal/DOSH.

TRAFFIC AND TRANSPORTATION CONDITIONS OF CERTIFICATION

TRANS-1 ARCO Petroleum Products Corporation (APPC) shall comply with the California Department of Transportation (Caltrans) and Los Angeles County restrictions on oversize or overweight vehicles using state, county and City of Carson roadways. APPC shall obtain overload permits, as necessary, from Caltrans and the County of Los Angeles.

Verification: APPC shallow in its annual compliance report, notify the California Energy Commission (CEC) of any overload permits obtained from Caltrans and the County of Los Angeles.

Response: In the 2021 calendar year, APPC/Watson is not aware of any overload permits being obtained from Caltrans and the County of Los Angeles.

TRANS-2 APPC shall comply with the City of Carson encroachment and excavation permit and franchise requirements for installation of utility services (transmission line, natural gas pipeline) of the proposed project in or over city-owned rights-of-way.

Verification: APPC shall, in its annual compliance report, notify the CEC that the requirements for obtaining encroachment and excavation permits from the City of Carson have been satisfied. APPC shall file any required or requested information with the City of Carson.

Response: In the 2021 calendar year, APPC/Watson is not aware of any filings for encroachment and/or excavation permits from the City of Carson.

WASTE MANAGEMENT CONDITIONS OF CERTIFICATION

WASTE-5 If APPC intends to store hazardous wastes on-site for more than 90 days, it shall obtain a determination from DHS that the requirements of a hazardous waste facility have been satisfied. Storage of such wastes shall be in accordance with DHS regulations. APPC shall file any required or requested information with the Los Angeles County Fire Department, Hazardous Materials Unit.

Verification: APPC shall notify the CEC in the Annual Compliance Report if APPC applies for, or obtains, a Hazardous Waste Facility permit.

Response: APPC/Watson does not store bulk hazardous waste onsite for more than 90 days and therefore does not require a Hazardous Waste Facility Permit.

WASTE-6 APPC shall ensure that hazardous wastes are hauled by a permitted hazardous wastes hauler and disposed of in a proper manner at a site permitted by DHS and the Regional Water Quality Control Board, Los Angeles Region, for the disposal of hazardous wastes.

Verification: In the Annual Compliance Report, APPC shall submit to the CEC a verification that hazardous wastes have been transported by a DHS-licensed hazardous waste hauler, and that the wastes were disposed of at appropriate sites.

Response: Hazardous waste generated by APPC/Watson is transported by a DTSC licensed hazardous waste hauler and is disposed of in a proper manner at permitted hazardous waste facilities.

WATER QUALITY CONDITIONS OF CERTIFICATION

WQ-4 The project owner shall provide a copy of the revised or new National Pollutant Discharge Elimination System Permit for the Watson Cogeneration Project and the ARCO Los Angeles Refinery approved by the Los Angeles Regional Water Quality Control Board to the CEC Compliance Project Manager. The project owner shall also provide a copy of the annual monitoring report required by the NPDES Permit for all wastewater, with the exception of stormwater runoff, that is commingled with cooling tower blowdown from the Watson Cogeneration Plant and discharged to the Dominguez Channel.

Verification: The project owner shall provide a copy of the new NPDES Permit to the CEC Compliance Project Manager within one month of its approval by the Los Angeles Regional Water Quality Control Board. Annual NPDES Permit monitoring reports shall be provided to the CEC Compliance Project Manager with the annual compliance report.

Response: Annual NPDES reports for the Carson facility are submitted electronically on the California Integrated Water Quality System (CIWQS). A copy of the annual NPDES report has been included at the end of this annual compliance report. A copy of the updated NPDES permit can be provided if requested by the CEC.

WATER RESOURCES CONDITIONS OF CERTIFICATION

WATER-3 The project owner will demonstrate that all feasible and practical measures to reduce additional water demand have been incorporated into the design of the fifth train. The measures may include, but are not limited to, recycling and reuse.

Verification: The project owner shall submit a report discussing all measures, whether adopted or not, considered to reduce project water demand. This report shall be contained in the first annual compliance report following the start of operation of the fifth train.

Response: Water-3 is not applicable as APPC/Watson did not construct a fifth train.



Tesoro Refining & Marketing Company LLC

A subsidiary of Marathon Petroleum Corporation

Los Angeles Refinery – Carson Operations 2350 E. 223rd Street Carson, California 90810 310-816-8100

January 31, 2022

VIA CIWQS Upload

California Regional Water Quality Control Board Los Angeles Region 320 W. 4th Street, Suite 200 Los Angeles, CA 90013 NPDES Permit No. CA0000680 Order No. R4-2015-0259

NO DISCHARGE DURING REPORTING PERIOD

Re: 2021 Annual NPDES Self-Monitoring Report

Tesoro Refining and Marketing Company LLC Los Angeles Refinery – Carson Operations 1801 East Sepulveda Boulevard, Carson, California

To Whom It May Concern:

Please find enclosed the Annual NPDES Self-Monitoring Report for the Tesoro Los Angeles Refinery – Carson Operations for the period of January 1, 2021 through December 31, 2021.

During the 2021 reporting period all process wastewater and wastewater commingled with storm water was discharged to the Los Angeles Sanitation District (LACSD) in compliance with Industrial Wastewater Permit No. 21299. Discharge of Low Volume Waste to the Dominguez Channel from any of the permitted Outfalls did not occur during the 2021 reporting period.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact me at 310-847-3920.

Sincerely,

Nate Busch

HES Professional

ecc: 2021 LARC Annual NPDES Report

NPDES Annual Self-Monitoring Report

Tesoro Refining & Marketing Company LLC Tesoro Los Angeles Refinery – Carson Operations 1801 East Sepulveda Boulevard Carson, California 90749

NPDES Permit No. CA0000680 Order No. R4-2015-0259

Reporting Period: January 1, 2021 – December 31, 2021

Report Prepared On: January 31, 2022

Table of Contents

| Part 1 – Compliance Summary | 2 |
|---|---|
| Part 2 – Summary of Monitoring Parameters | |
| Part 3 – Other Monitoring | 2 |
| Certification | 4 |
| Attachments | |
| Attachment 1: Annual Comprehensive Site Compliance Evaluation | |
| Attachment 2: Annual Rainfall Data | |
| | |

Attachment 3: Sediment Monitoring Report

Part 1 – Compliance Summary

1. NPDES Permit Compliance Summary

There were <u>no discharges of Low Volume Wastes</u> through Discharge Points 001, 002, 003, 004 or 005 or Process Wastewater Commingled with Storm Water and Boiler Blowdown through Discharge Points 003 or 004 to the Dominguez Channel at the Los Angeles Refinery – Carson Operations (LARC) in calendar year 2021. Therefore, there were no violations of the discharge limits or Waste Discharge Requirements (WDRs).

2. NPDES Incident Release Report

There were no incidental releases to the Dominguez Channel Estuary during calendar year 2021.

Part 2 – Summary of Monitoring Parameters

1. Presentation of Effluent Monitoring Data

There were <u>no discharges of Low Volume Wastes</u> through Discharge Points 001, 002, 003, 004 or 005 or Process Wastewater Commingled with Storm Water and Boiler Blowdown through Discharge Points 003 or 004 to the Dominguez Channel Estuary at LARC in calendar year 2021. Therefore, no effluent monitoring was required.

2. Changes in Discharge

There were <u>no discharges of Low Volume Wastes</u> through Discharge Points 001, 002, 003, 004 or 005 or Process Wastewater Commingled with Storm Water and Boiler Blowdown through Discharge Points 003 or 004 to the Dominguez Channel at LARC in calendar year 2021. There were no changes in the discharge as described in Order R4-2015-0259.

Part 3 – Other Monitoring

1. SWPPP, BMPP, and Spill Contingency Plan and Effectiveness Report

There were no discharges of Low Volume Wastes through Discharge Points 001, 002, 003, 004 or 005 or Process Wastewater Commingled with Storm Water and Boiler Blowdown through Discharge Points 003 or 004 to the Dominguez Channel Estuary at LARC in calendar year 2021. Therefore, there were no issues with the effectiveness of the SWPPP, BMPP, or Spill Contingency Plan.

However, internal policy dictates the annual review of all facility environmental plans. The Storm Water Pollution Prevention Plan (SWPPP) and Best Management Practices Plan (BMPP) were reviewed in November 2021 (see Attachment 1). The Spill Contingency Plan (Spill Prevention Control & Countermeasure (SPCC) Plan) was reviewed in December 2021.

2. Chemical Use Report

See Table 2 for the chemical usage report summarizing the quantities of all chemicals which are used at the facility and which are discharged or have the potential to be discharged. There were no discharges of Low Volume Wastes, including chemicals,

through Discharge Points 001, 002, 003, 004 or 005 to the Dominguez Channel Estuary at LARC in calendar year 2021. The Refinery diverts cooling tower blowdown, boiler blowdown, and commingled storm water / wastewater to the wastewater treatment system before discharging to the Los Angeles County Sanitation District (LACSD Permit No. 21299).

TABLE 2: 2021 Chemical Usage

| Baker Hughes Chemical | Description | 2021 Usage (lb) | | | | |
|-----------------------|----------------------------------|-----------------|--|--|--|--|
| LFS3301R | Dispersant | 165964 | | | | |
| BPR45142 | Antifoam | 15322 | | | | |
| BPR81300 | Filmer | 13039 | | | | |
| BPR81232 | Filmer | 77728 | | | | |
| BPR44865R1 | Dispersant/Settling Aid | 34517 | | | | |
| BPR27140 | Demulsifier | 156354 | | | | |
| BPR81156R | Neutralizer | 226397 | | | | |
| XERIC7021 | Demulsifier | 5300 | | | | |
| LFS3758 | Antifoulant | 14435 | | | | |
| FSTP5025 | Antifoam | 58437 | | | | |
| T9715 | Silver Strip | 202 | | | | |
| T4695 | Antioxidant | 43088 | | | | |
| SX9252 | H2S Scavenger | 25500 | | | | |
| SX9200 | H2S Scavenger | 3524 | | | | |
| SX9272M | H2S Scavenger | 3175 | | | | |
| XCIDE102 | Biocide | 80 | | | | |
| T1347 | Cetane Improver | 391090 | | | | |
| Performax DC5511 | Dispersant | 208491 | | | | |
| Millsperse MS7400 | CS corrosion inhibitor | 105009 | | | | |
| Performax CC6200 | Yellow metal corrosion inhibitor | 94000 | | | | |
| Performax SR8315 | Biodispersant | 25626 | | | | |
| Biosperse CN2150 | Biocide | 21292 | | | | |
| Drewplus L-718 | Antifoam | 11783 | | | | |
| Drewgard 315 | Closed Loop | 3253 | | | | |

3. Receiving Water Monitoring

There were <u>no discharges of Low Volume Wastes</u> through Discharge Points 001, 002, 003, 004 or 005 or Process Wastewater Commingled with Storm Water and Boiler Blowdown through Discharge Points 003 or 004 to the Dominguez Channel Estuary at LARC in calendar year 2021. Therefore, no receiving water sampling and associated visual observation was required.

Visual observations of the upstream and downstream receiving water sampling points was performed during 2021. Visual observations were performed at least monthly during January through December. No findings related to facility operations were reported on the visual observation logs.

4. Annual Comprehensive Compliance Evaluation

The Annual Comprehensive Compliance Evaluation (ACCE) was conducted by qualified personnel on January 20, 2022. See Attachment 1 for documentation.

5. Storm Water / Rainfall Monitoring

The daily rainfall data for calendar year 2021 are included in Attachment 2.

6. Sediment Monitoring

Although there were <u>no discharges of Low Volume Wastes</u> through Discharge Points 001, 002, 003, 004 or 005 or Process Wastewater Commingled with Storm Water and Boiler Blowdown through Discharge Points 003 or 004 to the Dominguez Channel at LARC in calendar year 2021, sediment monitoring was conducted on September 8, 2021 and November 3, 2021. A copy of the report is included in Attachment 3.

Certification

We report that there were no discharges of Low Volume Wastes through Discharge Points 001, 002, 003, 004 or 005 or Process Wastewater Commingled with Storm Water and Boiler Blowdown through Discharge Points 003 or 004 at LARC to the Dominguez Channel during the reporting period of January 1, 2021 – December 31, 2021, under the above-mentioned order.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

| Robert Nguyen |
|-----------------------|
| (Print Name) |
| Environmental Manager |
| (Title) |
| Certified via CIWQS |
| (Signature) |



| Annual Comprehensive Site Compliance Evaluation (ACSCE) | | | | | | | | | | |
|---|---|--|-----------------------------------|------------|--|--|--|--|--|--|
| Facility Name: | LAR - Carson Operations | Date: 1/25/2-2 | | | | | | | | |
| Inspector's Name/Signature: | Nate Busch | Inspector's Title: | HES Professional | | | | | | | |
| Has it been 8-16 m | onths since the last Annual Evaluation? | | | YES NO NA | | | | | | |
| Was a review of al | l sampling, visual observations, and inspection re | ecords conducted during the previous | reporting year? | YES NO NA | | | | | | |
| Were all industrial water conveyance s | activities and associated potential pollutants sou system? | rces inspected for evidence of, or the | potential for, entering the storm | YES NO NA | | | | | | |
| Were all drainage a | areas previously identified as having no exposure | e to industrial activities and materials | inspected? | YES NO NA | | | | | | |
| Was all equipment | used to implement BMPs inspected? | | | YES NO NA | | | | | | |
| Were all BMPs ins | spected? | | | YES NO NA | | | | | | |
| Was the Storm Wa | ter Pollution Prevention Plan and Monitoring Im | plementation Plan reviewed? | | YES NO N/A | | | | | | |
| Are revisions to the | ☐ YES ☑NO ☐ N/A | | | | | | | | | |

| Section/Page Number | Date Revised or Planned Date of Revision | Revision Description |
|---------------------|--|----------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| | Annual Comprehensive S | ite Compli | ance Evaluation (A | ACSCE) continued | | | |
|--|---|---------------|--|---|--|--|--|
| Attach an explan | Page 2 of 2 | | | | | | |
| Potential Pollutant Source/Industrial Activity as identified in your SWPPP) Northeast Area Flares Cooling Towers | Have any BMPs not been fully implemented? | ☐ YES NO | If yes, to any of the three | Describe deficiencies in BMPs or BMP implementation | Describe additional/revised BMPs or corrective actions and their date(s) of implementation | | |
| | Are any BMPs not effective in reducing and preventing pollutants in storm water discharges and NSWDs? | ☐ YES NO | questions, complete the next two | | | | |
| -Discharge Points 1, 2, & 3 | Are additional/revised BMPs necessary? | ☐ YES NO | columns of this form. | | | | |
| Potential Pollutant Source/Industrial Activity (as identified in your SWPPP) | Have any BMPs not been fully implemented? | □ yes □ No | If yes, to any of the three | Describe deficiencies in BMPs or BMP implementation | Describe additional/revised BMPs or corrective actions and their date(s) of implementation | | |
| Northwest Area -Flares -Cooling Towers -Cogen | Are any BMPs not effective in reducing and preventing pollutants in storm water discharges and NSWDs? | □ YES ☑ NO | questions, complete the next two | | | | |
| -Maintenance -Discharge Points 4 & 5 | Are additional/revised BMPs necessary? | □ yes □ No | columns of this form. | | | | |
| Potential Pollutant Source/Industrial Activity (as identified in your SWPPP) | Have any BMPs not been fully implemented? | ☐ YES NO | If yes, to any of the three | Describe deficiencies in BMPs or BMP implementation | Describe additional/revised BMPs or corrective actions and their date(s) of implementation | | |
| Γank Farms | Are any BMPs not effective in reducing and preventing pollutants in storm water discharges and NSWDs? | □ yes ☑ No | questions, complete the next two | | | | |
| | Are additional/revised BMPs necessary? | ☐ YES NO | form. | | | | |



Explanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

WFO Monthly/Daily Climate Data

967 CXUS56 KLOX Ø11255 CF6LGB PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: JANUARY
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

| 1 70 43 57 1 8 0 0.00 M M 3.7 14 290 M M 0 8 1 2 62 46 54 -2 11 0 0.00 M M 1.8 8 170 M M 0 1 1 8 63 47 55 -1 10 0.00 M M 2.1 9 200 M M 2 18 2 63 4 65 4 -2 11 0 0.00 M M 2.7 17 300 M M 2 18 2 66 3 49 56 0 9 0 0.00 M M 2.3 8 170 M M 1 128 1 6 6 8 46 57 1 8 0 0.00 M M 2.2 10 150 M M 1 128 1 6 6 68 46 57 1 8 0 0.00 M M 2.4 10 190 M M 3 128 1 7 7 7 0 46 58 2 7 0 0.00 M M 2.4 10 190 M M 3 128 1 8 64 48 56 -1 9 0 0.00 M M 1.4 12 180 M M 3 128 1 8 64 48 56 -1 9 0 0.00 M M 2.4 10 190 M M 5 128 1 1 7 7 0 0.00 M M 3.2 13 290 M M 0 1 1 1 28 1 1 7 5 44 60 3 5 0 0.00 M M 3.2 13 290 M M 0 1 1 1 7 5 44 60 3 5 0 0.00 M M 3.2 13 290 M M 0 1 1 1 7 7 44 58 1 7 0 0.00 M M 3.2 13 290 M M 0 1 1 1 7 7 4 3 60 3 5 0 0.00 M M 3.2 13 290 M M 0 1 1 1 7 7 4 3 60 3 5 0 0.00 M M 3.2 13 290 M M 0 1 1 1 7 7 4 4 60 3 5 0 0.00 M M 2.3 10 10 10 10 10 10 10 10 10 10 10 10 10 | | TEMPE | | | | | | :PCPN: | | SNOW: | WII | | | | SHINE | | | :PK | 3917 |
|--|-----|-------|-------|-----|-----|----------|-----|--------|-----|-------|------|------|------|-------|-------|-----|-------|----------|------|
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| 8 64 48 56 -1 9 0 0.00 M M 2.4 10 190 M M 5 128 1 9 73 43 58 1 7 0 0.00 M M 1.9 10 320 M M 4 128 1 10 72 48 60 3 5 0 0.00 M M 3.2 13 290 M M 0 11 75 44 60 3 5 0 0.00 M M 3.2 14 290 M M 0 12 72 44 58 1 7 0 0.00 M M 2.3 12 310 M M 0 13 77 43 60 3 5 0 0.00 M M 3.2 14 290 M M 0 14 83 49 66 9 0 1 0.00 M M 2.8 10 160 M M 0 15 91 49 70 13 0 5 0.00 M M 3.4 9 310 M M 0 16 82 49 66 9 0 1 0.00 M M 2.6 12 200 M M 0 17 87 53 70 13 0 5 0.00 M M 3.0 12 290 M M 0 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M M 0 19 69 52 61 4 4 0 0.00 M M 3.8 10 130 M M 2 1 19 69 52 61 4 4 0 0.00 M M 3.8 10 130 M M 2 1 21 68 53 61 4 4 0 0.00 M M 3.6 13 200 M M 2 22 61 52 57 0 8 0 0.00 M M 3.6 13 200 M M 0 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 0 24 58 41 50 -7 15 0 0.37 M M 3.0 12 290 M M 1 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 1 26 56 39 48 -9 17 0 0.17 M M 13.3 31 290 M M 1 27 59 46 53 -4 12 0 0.00 M M 5.2 13 210 M M 1 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 30 63 42 53 -4 12 0 0.00 M M 6.5 17 290 M M 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 72 45 59 46 52 -5 13 0 0.34 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 72 45 59 46 52 53 -4 12 0 0.00 M M 4.5 10 300 M M 0 31 72 45 59 46 52 53 -4 12 0 0.00 M M 4.5 10 300 M M 0 31 72 45 59 46 52 53 -4 12 0 0.00 M M 4.5 10 300 M M 0 31 72 45 59 50 50 50 50 50 50 50 50 5 | 6 | 68 | 46 | 57 | 1 | 8 | 0 | 0.00 | M | M | 2.2 | 2 10 | 150 | M | M | 1 | 128 | 12 | 16 |
| 9 73 43 58 1 7 0 0.00 M M 1.9 10 320 M M 4 128 1 10 72 48 60 3 5 0 0.00 M M 3.2 13 290 M M 0 11 75 44 60 3 5 0 0.00 M M 3.2 14 290 M M 0 12 72 44 58 1 7 0 0.00 M M 2.3 12 310 M M 0 13 77 43 60 3 5 0 0.00 M M 3.2 14 290 M M 0 14 83 49 66 9 0 1 0.00 M M 2.8 10 160 M M 0 15 91 49 70 13 0 5 0.00 M M 2.8 10 160 M M 0 16 82 49 66 9 0 1 0.00 M M 2.6 12 200 M M 0 17 87 53 70 13 0 5 0.00 M M 3.4 9 310 M M 0 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M M 0 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M M 2 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 2 1 19 69 52 61 4 4 0 0.00 M M 3.6 13 200 M M 0 21 68 53 61 4 4 0 0.00 M M 3.6 13 200 M M 0 22 61 52 57 0 8 0 0.00 M M 3.6 13 200 M M 0 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 7 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 1 24 58 41 50 -7 15 0 0.37 M M 3.0 12 290 M M 1 25 55 41 48 -9 17 0 0.00 M M 6.2 15 220 M M 7 26 56 39 48 -9 17 0 0.00 M M 6.2 15 220 M M 7 27 59 46 52 -5 13 0 0.34 M M 5.2 13 210 M M 1 28 61 43 52 -5 13 0 0.34 M M 6.5 17 290 M M 1 29 57 46 52 -5 13 0 0.34 M M 6.5 17 290 M M 1 31 71 47 59 2 6 0 0.00 M M 4.5 15 340 M M 8 13 30 63 42 53 -4 12 0 0.00 M M 4.5 15 340 M M 8 13 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 31 70 47 50 40 40 40 40 40 40 40 | 7 | 70 | 46 | 58 | 2 | 7 | 0 | 0.00 | M | M | 1.4 | 4 12 | 180 | M | M | 3 | 128 | 15 | 18 |
| 10 72 48 60 3 5 0 0.00 M M 3.2 13 290 M M 0 1 11 75 44 60 3 5 0 0.00 M M 3.2 14 290 M M 0 1 12 72 44 58 1 7 0 0.00 M M 2.3 12 310 M M 0 1 13 77 43 60 3 5 0 0.00 M M 3.2 14 290 M M 0 1 14 83 49 66 9 0 1 0.00 M M 2.8 10 160 M M 0 1 15 91 49 70 13 0 5 0.00 M M 3.4 9 310 M M 0 1 16 82 49 66 9 0 1 0.00 M M 2.6 12 200 M M 0 1 17 87 53 70 13 0 5 0.00 M M 3.0 12 290 M M 0 1 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M 0 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 2 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 3.6 13 200 M M 0 1 22 61 52 57 0 8 0 0.00 M M 3.6 13 200 M M 0 1 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 1 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 22 25 57 46 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 1 22 26 51 52 57 0 8 0.34 M M 5.2 13 210 M M 1 1 1 22 27 59 46 53 -4 12 0 0.00 M M 6.5 17 290 M M 1 1 1 22 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 4.5 10 300 M M 0 1 1 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 1 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 8 | 64 | 48 | 56 | -1 | 9 | 0 | 0.00 | M | M | 2.4 | 4 10 | 190 | M | M | 5 | 128 | 12 | 19 |
| 11 75 44 60 3 5 0 0.00 M M 3.2 14 290 M M 0 1 12 72 44 58 1 7 0 0.00 M M 2.3 12 310 M M 0 1 13 77 43 60 3 5 0 0.00 M M 3.2 14 290 M M 0 1 14 83 49 66 9 0 1 0.00 M M 2.8 10 160 M M 0 1 15 91 49 70 13 0 5 0.00 M M 3.4 9 310 M M 0 1 16 82 49 66 9 0 1 0.00 M M 2.6 12 200 M M 0 1 17 87 53 70 13 0 5 0.00 M M 3.0 12 290 M M 0 1 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M M 2 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 3.6 13 200 M M 0 1 22 61 52 57 0 8 0 0.00 M M 3.6 13 200 M M 0 1 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 0 1 24 58 41 50 -7 15 0 0.37 M M 3.0 12 290 M M 1 1 1 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 23 2 25 55 41 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 9 | 73 | 43 | 58 | 1 | 7 | 0 | 0.00 | M | M | 1.5 | 9 10 | 320 | M | M | 4 | 128 | 12 | 31 |
| 12 72 44 58 1 7 0 0.00 M M 2.3 12 310 M M 0 1 13 77 43 60 3 5 0 0.00 M M 3.2 14 290 M M 0 1 14 83 49 66 9 0 1 0.00 M M 2.8 10 160 M M 0 1 15 91 49 70 13 0 5 0.00 M M 3.4 9 310 M M 0 1 16 82 49 66 9 0 1 0.00 M M 2.6 12 200 M M 0 1 17 87 53 70 13 0 5 0.00 M M 3.0 12 290 M M 0 1 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M M 2 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 3.6 13 200 M M 0 1 22 61 52 57 0 8 0 0.00 M M 3.6 13 200 M M 0 1 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.07 M M 13.3 31 290 M M 3 1 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 27 59 46 53 -4 12 0 0.00 M M 6.5 17 290 M M 1 29 57 46 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 31 71 47 59 2 6 0 0.00 M M 2.7 12 290 M M 0 1 31 71 47 59 2 6 0 0.00 M M 2.7 12 290 M M 0 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 10 | 72 | 48 | 60 | 3 | 5 | 0 | 0.00 | M | M | 3.3 | 2 13 | 290 | M | M | 0 | | 15 | 29 |
| 13 77 43 60 3 5 0 0.00 M M 3.2 14 290 M M 0 1 14 83 49 66 9 0 1 0.00 M M 2.8 10 160 M M 0 1 15 91 49 70 13 0 5 0.00 M M 3.4 9 310 M M 0 1 16 82 49 66 9 0 1 0.00 M M 2.6 12 200 M M 0 1 17 87 53 70 13 0 5 0.00 M M 3.0 12 290 M M 0 1 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M M 2 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 3.6 13 200 M M 0 1 22 61 52 57 0 8 0 0.00 M M 3.6 13 200 M M 0 1 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 1 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.00 M M 3.3 31 290 M M 3 1 4 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 4.5 10 300 M M 0 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 11 | 75 | 44 | 60 | 3 | 5 | 0 | 0.00 | M | M | 3.2 | 2 14 | 290 | M | M | 0 | | 17 | 30 |
| 14 83 49 66 9 0 1 0.00 M M 2.8 10 160 M M 0 1 15 91 49 70 13 0 5 0.00 M M 3.4 9 310 M M 0 1 16 82 49 66 9 0 1 0.00 M M 2.6 12 200 M M 0 1 17 87 53 70 13 0 5 0.00 M M 3.0 12 290 M M 0 1 18 74 48 61 4 4 0 0.00 M M 10.8 32 80 M M 2 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 2 2 21 68 53 61 4 4 0 0.00 M M 3.6 13 200 M M 0 1 22 61 52 57 0 8 0 0.00 M M 6.2 15 220 M M 7 1 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 1 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 4.5 16 300 M M 0 1 31 71 47 59 2 6 0 0.00 M M 2.7 12 290 M M 0 1 31 71 47 59 2 6 0 0.00 M M 2.7 12 290 M M 0 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 12 | 72 | 44 | 58 | 1 | 7 | 0 | 0.00 | M | M | 2.3 | 3 12 | 310 | M | M | 0 | | 14 | 31 |
| 15 91 49 70 13 0 5 0.00 M M 3.4 9 310 M M 0 1 16 82 49 66 9 0 1 0.00 M M 2.6 12 200 M M 0 1 17 87 53 70 13 0 5 0.00 M M 3.0 12 290 M M 0 1 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M M 2 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 2 21 68 53 61 4 4 0 0.00 M M 3.6 13 200 M M 0 22 61 52 57 0 8 0 0.00 M M 6.2 15 220 M M 7 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 26 56 39 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 27 59 46 53 -4 12 0 0.00 M M 5.2 13 210 M M 1 29 57 46 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 30 63 42 53 -4 12 0 0.00 M M 4.5 15 340 M M 8 13 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 13 | 77 | 43 | 60 | 3 | 5 | 0 | 0.00 | M | M | 3.2 | 2 14 | 290 | M | M | 0 | | 17 | 29 |
| 16 82 49 66 9 0 1 0.00 M M 2.6 12 200 M M 0 1 17 87 53 70 13 0 5 0.00 M M 3.0 12 290 M M 0 1 18 74 48 61 4 4 0 0.00 M M 10.8 32 80 M M 2 1 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 2 21 68 53 61 4 4 0 0.00 M M 3.6 13 200 M M 0 1 22 61 52 57 0 8 0 0.00 M M 6.2 15 220 M M 7 1 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 1 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 129 57 46 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 30 63 42 53 -4 12 0 0.00 M M 6.5 17 290 M M 8 13 31 71 47 59 2 6 0 0.00 M M 2.7 12 290 M M 8 13 31 71 47 59 2 6 0 0.00 M M 2.7 12 290 M M 0 1 | 14 | 83 | 49 | 66 | 9 | 0 | 1 | 0.00 | M | M | 2.8 | 3 10 | 160 | M | M | 0 | | 13 | 15 |
| 17 87 53 70 13 0 5 0.00 M M 3.0 12 290 M M 0 1 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M M 2 1 1 1 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 2 2 2 1 68 53 61 4 4 0 0.00 M M 3.6 13 200 M M 0 1 2 61 52 57 0 8 0 0.00 M M 6.2 15 220 M M 7 1 2 3 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 1 2 4 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 5 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 2 6 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 2 7 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 2 8 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 2 2 9 57 46 52 -5 13 0 0.49 M M 6.5 17 290 M M 8 13 1 3 1 3 1 6 3 4 2 53 -4 12 0 0.00 M M 6.5 17 290 M M 8 13 1 3 1 3 1 6 3 4 2 53 -4 12 0 0.00 M M 6.5 17 290 M M 1 1 2 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 | 15 | 91 | 49 | 70 | 13 | 0 | 5 | 0.00 | M | M | 3.4 | 4 9 | 310 | M | M | 0 | | 11 | 28 |
| 18 74 48 61 4 4 0 0.00 M M 3.8 10 130 M M 2 1 1 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 2 2 21 68 53 61 4 4 0 0.00 M M 3.6 13 200 M M 0 2 22 61 52 57 0 8 0 0.00 M M 6.2 15 220 M M 7 1 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 1 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 12 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 2 29 57 46 52 -5 13 0 0.49 M M 6.5 17 290 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 4.5 15 340 M M 8 13 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 16 | 82 | 49 | 66 | 9 | 0 | 1 | 0.00 | M | M | 2.6 | 5 12 | 200 | M | M | 0 | | 14 | 200 |
| 19 69 52 61 4 4 0 0.00 M M 10.8 32 80 M M 5 8 4 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 2 21 68 53 61 4 4 0 0.00 M M 3.6 13 200 M M 0 22 61 52 57 0 8 0 0.00 M M 6.2 15 220 M M 7 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 426 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 30 63 42 53 -4 12 0 0.00 M M 4.5 10 300 M M 0 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 17 | 87 | 53 | 70 | 13 | 0 | 5 | 0.00 | M | M | 3.6 | 3 12 | 290 | M | M | 0 | | 15 | 7 |
| 20 77 56 67 10 0 2 0.00 M M 9.7 23 80 M M 2 22 16 85 361 4 4 0 0.00 M M 3.6 13 200 M M 0 12 22 61 52 57 0 8 0 0.00 M M 6.2 15 220 M M 7 12 3 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 12 4 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 42 6 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 12 7 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 12 8 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 13 0 63 42 53 -4 12 0 0.00 M M 4.5 15 340 M M 8 13 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 18 | 74 | 48 | 61 | 4 | 4 | 0 | 0.00 | M | M | 3.8 | 3 10 | 130 | M | M | 2 | 1 | 16 | 14 |
| 21 68 53 61 4 4 0 0.00 M M 3.6 13 200 M M 0 1 1 2 2 61 52 57 0 8 0 0.00 M M 6.2 15 220 M M 7 1 1 2 3 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 1 2 4 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 5 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 2 6 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 2 7 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 2 8 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 2 9 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 4.5 15 340 M M 8 13 1 3 1 7 1 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 19 | 69 | 52 | 61 | 4 | 4 | 0 | 0.00 | M | M | 10.8 | 3 32 | 80 | M | M | 5 | 8 | 43 | 7 |
| 22 61 52 57 0 8 0 0.00 M M 6.2 15 220 M M 7 1 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 1 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 12 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 2 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 2.7 12 290 M M 0 1 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 20 | 77 | 56 | 67 | 10 | 0 | 2 | 0.00 | M | M | 9. | 7 23 | 80 | M | M | 2 | | 29 | 8 |
| 23 54 46 50 -7 15 0 0.37 M M 3.0 12 290 M M 8 13 1 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 2.7 12 290 M M 0 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 SM 2115 1446 242 14 1.37 M 128.5 M 70 | 21 | 68 | 53 | 61 | 4 | 4 | 0 | 0.00 | M | M | 3.6 | 5 13 | 200 | M | M | 0 | | 15 | 190 |
| 24 58 41 50 -7 15 0 T M M 4.5 16 260 M M 4 123 2 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 2.7 12 290 M M 0 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 SM 2115 1446 242 14 1.37 M 128.5 M 70 | 22 | 61 | 52 | 57 | 0 | 8 | 0 | 0.00 | M | M | 6.2 | 2 15 | 220 | M | M | 7 | | 19 | 24 |
| 25 55 41 48 -9 17 0 0.17 M M 13.3 31 290 M M 3 1 4 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 2.7 12 290 M M 0 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 SM 2115 1446 242 14 1.37 M 128.5 M 70 | 23 | 54 | 46 | 50 | -7 | 15 | 0 | 0.37 | M | M | 3.6 | 12 | 290 | M | M | 8 | 13 | 16 | 270 |
| 26 56 39 48 -9 17 0 0.00 M M 5.2 13 210 M M 1 1 1 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 2 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 2.7 12 290 M M 0 1 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | 24 | 58 | 41 | 50 | -7 | 15 | 0 | T | M | M | 4.5 | 5 16 | 260 | M | M | 4 | 123 | 21 | 27 |
| 27 59 46 53 -4 12 0 0.00 M M 6.0 14 120 M M 5 1 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 2 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 2.7 12 290 M M 0 1 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 25 | 55 | 41 | 48 | -9 | 17 | 0 | 0.17 | M | M | 13.3 | 3 31 | 290 | M | M | 3 | 1 | 43 | 28 |
| 28 61 43 52 -5 13 0 0.49 M M 6.5 17 290 M M 1 1 2 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 2.7 12 290 M M 0 1 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 5 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 | 26 | 56 | 39 | 48 | -9 | 17 | 0 | 0.00 | M | M | 5.2 | 2 13 | 210 | M | M | 1 | | 17 | 200 |
| 29 57 46 52 -5 13 0 0.34 M M 4.5 15 340 M M 8 13 1 30 63 42 53 -4 12 0 0.00 M M 2.7 12 290 M M 0 1 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 27 | 59 | 46 | 53 | -4 | 12 | 0 | 0.00 | M | M | 6.6 | 14 | 120 | M | M | 5 | | 18 | 14 |
| 30 63 42 53 -4 12 0 0.00 M M 2.7 12 290 M M 0 1 1 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 28 | 61 | 43 | 52 | -5 | 13 | 0 | 0.49 | M | M | 6.5 | 5 17 | 290 | M | M | 1 | 1 | 23 | 140 |
| 31 71 47 59 2 6 0 0.00 M M 4.5 10 300 M M 0 1 | 29 | 57 | 46 | 52 | -5 | 13 | 0 | 0.34 | M | M | 4.5 | 5 15 | 340 | M | M | 8 | 13 | 18 | 310 |
| SM 2115 1446 | 30 | 63 | 42 | 53 | -4 | 12 | 0 | 0.00 | M | M | 2.7 | 7 12 | 290 | M | M | 0 | 1 | 13 | 280 |
| SM 2115 1446 242 14 1.37 M 128.5 M 70 | ~~ | | | - | | | | | | | | | 7777 | 1 - 1 | | | | | 280 |
| *************************************** | -27 | | 0 N N | | | - Y /V-5 | | | 100 | 7 | | | ==== | | | | 12292 | ===== | |
| AV 68.2 46.6 4.1 FASTST M M 2 MAX(M | | | | | | | | | | **** | | | | | | | | IAX (MPI | |

43 70

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: LONG BEACH AIRPORT CA

MONTH: YEAR:

JANUARY 2021

LATITUDE: 33 49 N LONGITUDE: 118 9 W

| [TEMPERATURE DATA] | [PRECIPIT | ATION DATA] |
|---------------------|-------------|-----------------|
| AVERAGE MONTHLY: 57 | 4 TOTAL FOR | MONTH: 1.37 |
| DPTR FM NORMAL: 6 | 7 DPTR FM N | ORMAL: -1.23 |
| HIGHEST: 91 ON 1 | GRTST 24H | R 2.32 ON 28-29 |
| LOWEST: 39 ON 2 | | |
| | SNOW, ICE | PELLETS, HAIL |
| | TOTAL MON | TH: M |
| | GRTST 24H | R M ON M |
| | GRTST DEP | TH: M ON M |
| [NO. OF DAYS WITH] | [WEATHER | - DAYS WITH] |
| MAX 32 OR BELOW: | 0.01 INCH | OR MORE: 4 |
| MAX 90 OR ABOVE: | 0.10 INCH | OR MORE: 4 |
| MIN 32 OR BELOW: | 0.50 INCH | OR MORE: 0 |
| MIN Ø OR BELOW: | | |
| [HDD (BASE 65)] | | |
| TOTAL THIS MO. 24 | | |
| DPTR FM NORMAL -1 | | |
| TOTAL FM JUL 1 57 | CLOUDY (S | CALE 8-10) 0 |
| DPTR FM NORMAL -9 | | |
| [CDD (BASE 65)] | | |
| TOTAL THIS MO. 1 | | |
| DPTR FM NORMAL 1 | | |
| TOTAL FM JAN 1 | | |
| DPTR FM NORMAL 1 | LOWEST S | LP 29.69 ON 25 |

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST 2 = FOG REDUCING VISIBILITY

TO 1/4 MILE OR LESS 3 = THUNDER

4 = ICE PELLETS

5 = HAIL

6 = FREEZING RAIN OR DRIZZLE

7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS

8 = SMOKE OR HAZE

9 = BLOWING SNOW

X = TORNADO

[REMARKS] #FINAL-01-21# These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

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410
CXUS56 KLOX 011730
CLMLGB
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CLIMATE REPORT NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD 930 AM PST MON FEB 01 2021

...THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF JANUARY 2021...

CLIMATE NORMAL PERIOD: 1981 TO 2010 CLIMATE RECORD PERIOD: 1958 TO 2021

| WEATHER | | Water State of the | | | T LAST YEAR'S |
|----------------------------|---------|--|--------|---------------|---------------|
| | VALUE | DATE(S) | VALUE | FROM NORMA | VALUE L |
| TEMPERATURE (F) | ****** | ******* | | | |
| HIGHEST | | 01/15 | | | |
| LOWEST | 39 | 01/26 | | | |
| AVG. MAXIMUM | 68.2 | 22,50 | 67.4 | 0.8 | |
| | 46.6 | | | 0.5 | |
| MEAN | 57.4 | | | 0.7 | |
| DAYS MAX >= 90 | | | | | |
| DAYS MAX <= 32 | 0 | | | | |
| DAYS MIN <= 32 | 0 | | | | |
| DAYS MIN <= 0 | 0 | | | | |
| PRECIPITATION (| | | | | |
| TOTALS | 1.37 | | 2.60 | -1.23 | |
| DAILY AVG. | 0.04 | | | | |
| DAYS >= .01 | 4 | | | | |
| DAYS >= .10 | 4 | | | | |
| DAYS >= .50 | 0 | | | | |
| DAYS >= 1.00 | 0 | | | | |
| GREATEST | | | | | |
| 24 HR. TOTAL | | 01/28 TO | 01/29 | | |
| STORM TOTAL | 0.49 | | | | |
| DEGREE DAYS | | | | | |
| (이) 로 로마인 구경, (이) 이 시간 (c) | 242 | | 259 | -17 | 262 |
| SINCE 7/1 | 579 | | 676 | | 100 |
| COOLING TOTAL | 14 | | 3 | | 79.5.7 |
| SINCE 1/1 | 14 | | 3 | 11 | |
| | ***** | ****** | | **** | |
| WIND (MPH) | | | | | |
| AVERAGE WIND SP | PEED | | 4.1 | | |
| HIGHEST WIND SP | EED/DIR | ECTION | 32/080 | DATE | 01/19 |
| HIGHEST GUST SP | EED/DIR | ECTION | 43/070 | DATE | 01/19 |
| | | | | | |

43/280

01/25

SKY COVER

POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.22
NUMBER OF DAYS FAIR 21
NUMBER OF DAYS PC 8
NUMBER OF DAYS CLOUDY 2

AVERAGE RH (PERCENT) 61

WEATHER CONDITIONS. NUMBER OF DAYS WITH 0 THUNDERSTORM 3 MIXED PRECIP HEAVY RAIN 1 RAIN 4 FREEZING RAIN 0 LIGHT RAIN 5 0 HAIL 0 LT FREEZING RAIN 0 SNOW 0 HEAVY SNOW LIGHT SNOW 0 SLEET 0 FOG W/VIS <= 1/4 MILE FOG 15 6 9 HAZE

⁻ INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

Explanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

WFO Monthly/Daily Climate Data

353
CXUSS6 KLOX Ø11255
CF6LGB
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: FEBRUARY
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

| | TEMPE | | | | | | :PCPN: | | NOW: | WIN | F | | | SHINE | 71.27 | | :PK 1 | |
|-----|-------|-----|-----|-----|-----|-----|--------|------|----------|--------|------|-------------|-----|-------|-------|-----|--------------------|-----|
| 1 | 2 | 3 | 4 | | 6A | | 7 | 8 | 9 12Z | 10 | 11 | 12 2MIN | | 14 | | 16 | | |
| DY | MAX | MIN | AVG | DEP | HDD | CDD | WTR | SNW | DPTH | SPD | SPD | DIR | MIN | PSBL | 5-5 | WX | SPD | DR |
| === | | | | | | | | ==== | | | | | | **** | | | ***** | |
| 1 | 71 | 57 | 64 | 7 | 1 | 0 | Ţ | M | M | 100000 | | 300 | M | М | 6 | | 13 | 306 |
| 2 | 70 | 51 | 61 | 4 | 4 | 0 | 0.00 | M | M | 4.5 | 18 | 300 | M | M | 2 | | 20 | 296 |
| 3 | 65 | 50 | 58 | 1 | 7 | | 0.00 | M | M | 3.8 | 14 | 280 | M | M | 4 | 128 | 18 | 276 |
| 4 | 67 | 50 | 59 | 2 | 6 | 0 | 0.00 | M | M | 4.2 | 13 | 290 | M | M | 5 | 1 | 14 | 296 |
| 5 | 70 | 48 | 59 | 2 | 6 | 0 | 0.00 | M | M | 3.3 | 13 | 290 | M | M | 0 | 18 | 14 | 296 |
| 6 | 74 | 45 | 60 | 3 | 5 | 0 | 0.00 | M | M | 2.6 | 10 | 290 | M | M | 0 | 18 | 12 | 300 |
| 7 | 64 | 48 | 56 | -1 | 9 | 0 | 0.00 | M | M | | | 200 | M | M | 4 | 128 | 11 | 216 |
| 8 | 59 | 50 | 55 | -2 | 10 | 0 | 0.00 | M | M | 4.6 | 12 | 200 | M | M | 6 | 18 | 14 | 176 |
| 9 | 59 | 53 | 56 | -1 | 9 | 0 | 0.00 | M | M | 4.1 | 10 | 180 | M | M | 7 | | 14 | 176 |
| 10 | 62 | 50 | 56 | -1 | 9 | 0 | 0.00 | M | M | 2.4 | 1 10 | 210 | M | M | 5 | 18 | 14 | 236 |
| 11 | 65 | 46 | 56 | -1 | 9 | 0 | 0.00 | M | M | 3.9 | 15 | 290 | M | M | 0 | 18 | 18 | 296 |
| 12 | 67 | 51 | 59 | 2 | 6 | 0 | 0.05 | M | M | 8.6 | 29 | 310 | M | M | 4 | 1 | 34 | 316 |
| 13 | 62 | 50 | 56 | -1 | 9 | 0 | 0.00 | M | M | 7.3 | 18 | 320 | M | M | 5 | | 24 | 296 |
| 14 | 70 | 53 | 62 | 4 | 3 | 0 | 0.00 | M | M | 13.8 | 28 | 290 | M | M | 0 | | 32 | 296 |
| 15 | 62 | 48 | 55 | -3 | 10 | 0 | 0.00 | M | M | 4.6 | 13 | 180 | M | M | 1 | | 18 | 176 |
| 16 | 70 | 52 | 61 | 3 | 4 | 0 | 0.00 | M | M | 7.2 | 2 23 | 320 | M | M | 3 | 18 | 29 | 326 |
| 17 | 66 | 46 | 56 | -2 | 9 | 0 | 0.00 | M | M | 4.6 | 17 | 260 | M | M | 0 | | 24 | 266 |
| 18 | 70 | 50 | 60 | 2 | 5 | 0 | 0.00 | M | M | 7.8 | 20 | 80 | M | M | 0 | | 25 | 86 |
| 19 | 71 | 44 | 58 | 0 | 7 | 0 | 0.00 | M | M | 3.1 | 13 | 290 | M | M | 0 | | 14 | 226 |
| 20 | 72 | 45 | 59 | 1 | 6 | 0 | 0.00 | M | M | 7.8 | 30 | 310 | M | M | 1 | | 37 | 356 |
| 21 | 76 | 44 | 60 | 2 | 5 | 0 | 0.00 | M | M | 5.8 | 18 | 290 | M | M | 0 | | 21 | 286 |
| 22 | 84 | 49 | 67 | 9 | 0 | 2 | 0.00 | M | M | 5.6 | 16 | 300 | M | M | 0 | | 25 | 96 |
| 23 | 75 | 47 | 61 | 3 | 4 | 0 | 0.00 | M | M | 3.4 | 12 | 310 | M | M | 0 | 1 | 14 | 286 |
| 24 | 67 | 50 | 59 | 1 | 6 | 0 | 0.00 | M | M | 3.6 | 10 | 210 | M | M | 1 | 1 | M | 1 |
| 25 | 77 | 48 | 63 | 5 | 2 | | 0.00 | M | M | 3.8 | 14 | 290 | M | M | 1 | 18 | 17 | 316 |
| 26 | 72 | 44 | 58 | 0 | 7 | 0 | 0.00 | M | M | 3.5 | 13 | 200 | M | M | 0 | | 16 | 226 |
| 27 | 69 | 48 | 59 | 1 | 6 | | 0.00 | M | M | | | 290 | M | M | 2 | | | 296 |
| 28 | 74 | 47 | 61 | 3 | 4 | 0 | 0.00 | M | M | - 237 | 21 | 100 | M | M | 0 | | 27 | 86 |
| | 1930 | | | | 168 | 2 | 0.05 | | | 139.9 | | ==== | M | | 57 | | | TEE |
| | | | | | | | | | | | | | | | W. S. | | | |
| AV | 68.9 | 48. | 7 | | | | | MTCC | | | | STST 310 | M | M | 2 | | MAX (MP) 37 350 | H) |

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: LONG BEACH AIRPORT CA

MONTH: FEBRUARY YEAR: 2021 LATITUDE: 33 49 N LONGITUDE: 118 9 W

| [TEMPERATURE DATA] | [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16 |
|--|--|
| AVERAGE MONTHLY: 58.8 DPTR FM NORMAL: 1.2 HIGHEST: 84 ON 22 LOWEST: 44 ON 26,2 | DPTR FM NORMAL: -3.04 2 = FOG REDUCING VISIBILITY GRTST 24HR 0.05 ON 12-12 TO 1/4 MILE OR LESS 1 3 = THUNDER |
| | SNOW, ICE PELLETS, HAIL TOTAL MONTH: M GRTST 24HR M ON M GRTST DEPTH: M ON M TOTAL MONTH: M GRTST DEPTH: M ON M TOTAL MONTH: M TOTAL MO |
| [NO. OF DAYS WITH] | [WEATHER - DAYS WITH] 9 = BLOWING SNOW X = TORNADO |
| MAX 32 OR BELOW: 0 MAX 90 OR ABOVE: 0 MIN 32 OR BELOW: 0 | 0.01 INCH OR MORE: 1 0.10 INCH OR MORE: 0 0.50 INCH OR MORE: 0 |
| MIN Ø OR BELOW: Ø | 1.00 INCH OR MORE: 0 |

[HDD (BASE 65)]

TOTAL THIS MO. 168 CLEAR (SCALE 0-3) 18 -44 PTCLDY (SCALE 4-7) 10 DPTR FM NORMAL 747 TOTAL FM JUL 1 CLOUDY (SCALE 8-10) 0 DPTR FM NORMAL -145

[CDD (BASE 65)]

TOTAL THIS MO. 2

DPTR FM NORMAL -3 [PRESSURE DATA]

TOTAL FM JAN 1 HIGHEST SLP 30.33 ON 18 16 DPTR FM NORMAL 13 LOWEST SLP 29.81 ON 13

[REMARKS] #FINAL-02-21# These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

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992
CXUS56 KLOX 011730
CLMLGB
CLIMATE REPORT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD
930 AM PST MON MAR 01 2021
... THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF FEBRUARY 2021...
CLIMATE NORMAL PERIOD: 1981 TO 2010
CLIMATE RECORD PERIOD: 1958 TO 2021
                                NORMAL DEPART
WEATHER
               OBSERVED
                                                LAST YEAR'S
               VALUE DATE(S) VALUE
                                       FROM
                                                VALUE
                                       NORMAL
TEMPERATURE (F)
HIGHEST
                 84 02/22
LOWEST
                 44 02/19
                     02/21
                     02/26
                                         1.7
AVG. MAXIMUM 68.9
                                 67.2
AVG. MINIMUM
               48.7
                                 48.0
                                         0.7
MEAN
               58.8
                                 57.6
                                         1.2
DAYS MAX >= 90
DAYS MAX <= 32
DAYS MIN <= 32
DAYS MIN <= 0
PRECIPITATION (INCHES)
TOTALS
                              3.09
                                        -3.02
DAILY AVG.
               0.00
DAYS >= .01
                2
DAYS >= .10
                0
DAYS >= .50
                 0
DAYS >= 1.00
GREATEST
24 HR. TOTAL
             0.05
                     02/12 TO 02/12
STORM TOTAL
               0.05
DEGREE DAYS
                                  212
                                         -44
                                                  185
HEATING TOTAL
                168
                                        -145
                                                  829
SINCE 7/1
                747
                                  892
                2
COOLING TOTAL
                                    5
                                          -3
                                                  12
SINCE 1/1
                16
                                   3
                                          13
                                                  12
WIND (MPH)
AVERAGE WIND SPEED
                              5.0
HIGHEST WIND SPEED/DIRECTION
                              30/310
                                       DATE 02/20
HIGHEST GUST SPEED/DIRECTION
                              37/350
                                       DATE 02/20
```

0

0

0

0

0

0

2

SKY COVER

LIGHT SNOW

POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.20
NUMBER OF DAYS FAIR 20
NUMBER OF DAYS PC 8
NUMBER OF DAYS CLOUDY 0

AVERAGE RH (PERCENT) 59

WEATHER CONDITIONS. NUMBER OF DAYS WITH THUNDERSTORM 0 MIXED PRECIP HEAVY RAIN 0 RAIN LIGHT RAIN 1 FREEZING RAIN LT FREEZING RAIN 0 HAIL HEAVY SNOW 0 SNOW

0

SLEET

FOG W/VIS <= 1/4 MILE

FOG 13 HAZE 9

- INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

Explanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

WFO Monthly/Daily Climate Data

000 CXUS56 KLOX 011155 CF6LGB PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: MARCH
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

| | TEMPE | 40. | 300 | | | | :PCPN: | | SNOW: WIND | | | | :SUNSHINE: SKY | | | | | |
|----|-----------|-----|------|----|-------|-------|--------|-------|------------|-------------|------|------------|----------------|------|----|-------|----------|-----|
| 1 | 2 | 3 | 4 | | 6A | | 7 | 8 | 9 12Z | 10 | 11 | 12 2MIN | 13 | 14 | | 16 | | 18 |
| 70 | 2 11 11 1 | | 4.79 | | 7 100 | F3/41 | WTR | ×1117 | 65.019 | SPD | SPD | DIR | 1060 | PSBL | | 0.465 | SPD | 211 |
| 1 | 73 | 47 | 60 | 2 | 5 | 0 | 0.00 | М | м | 4.6 | 5 14 | 70 | М | M | 0 | 8 | 18 | 76 |
| 2 | 73 | 44 | 59 | 0 | 6 | | 0.00 | M | M | - 00 G | | 200 | M | M | 0 | | 14 | |
| 3 | 59 | 45 | 52 | -7 | 13 | 0 | 0.48 | M | M | 4. | 20 | 40 | M | M | 5 | 13 | 23 | 4 |
| 4 | 65 | 43 | 54 | -5 | 11 | - 697 | 0.00 | M | M | 4.7 | 7 15 | 290 | M | M | 0 | | 19 | 280 |
| 5 | 78 | 47 | 63 | 4 | 2 | 0 | 0.00 | M | M | 6.4 | 1 18 | 280 | M | M | 0 | | 23 | 296 |
| 6 | 68 | 48 | 58 | -1 | 7 | 0 | 0.00 | M | M | 4.8 | 3 16 | 290 | M | M | 0 | 1 | 19 | 296 |
| 7 | 62 | 51 | 57 | -2 | 8 | 0 | 0.00 | M | M | 3.4 | 1 12 | 190 | M | M | 6 | | 17 | 200 |
| 8 | 66 | 51 | 59 | 0 | 6 | 0 | 0.00 | M | M | 4.8 | 18 | 290 | M | M | 6 | | 22 | 31 |
| 9 | 63 | 46 | 55 | -4 | 10 | 0 | 0.00 | M | M | 6.7 | 7 23 | 280 | M | M | 1 | | 30 | 290 |
| 10 | 59 | 48 | 54 | -5 | 11 | 0 | 0.60 | M | M | 7.3 | L 20 | 280 | M | M | 7 | 13 | 26 | 290 |
| 11 | 57 | 45 | 51 | -8 | 14 | 0 | 0.21 | M | M | 4.6 | 5 14 | 220 | M | M | 4 | 1 | 19 | 236 |
| 12 | 60 | 42 | 51 | -8 | 14 | 0 | 0.00 | M | M | 4.5 | 18 | 290 | M | M | 1 | | 21 | 30 |
| 13 | 62 | 45 | 54 | -5 | 11 | 0 | 0.00 | M | M | 4.6 | 5 15 | 290 | M | M | 2 | 8 | 21 | 250 |
| 14 | 61 | 51 | 56 | -3 | 9 | 0 | 0.00 | M | M | 6.6 | 16 | 290 | M | M | 8 | | 18 | 296 |
| 15 | 57 | 47 | 52 | -8 | 13 | 0 | 0.18 | M | M | 12.6 | 5 25 | 290 | M | M | 6 | 1 | 40 | 250 |
| 16 | 58 | 45 | 52 | -8 | 13 | 0 | 0.00 | M | M | 5.9 | 15 | 290 | M | M | 0 | | M | 1 |
| 17 | 65 | 44 | 55 | -5 | 10 | 0 | 0.00 | M | M | 3.9 | 13 | 300 | M | M | 0 | | M | 1 |
| 18 | 67 | 48 | 58 | -2 | 7 | 0 | 0.00 | M | M | 4.5 | 17 | 290 | M | M | 0 | | M | - 1 |
| 19 | 72 | 49 | 61 | 1 | 4 | 0 | 0.00 | M | M | 5.5 | 18 | 290 | M | M | 0 | | 24 | 296 |
| 20 | 65 | 52 | 59 | -1 | 6 | 0 | 0.00 | M | M | 4.7 | 7 17 | 290 | M | M | 3 | 1 | 20 | 296 |
| 21 | 68 | 49 | 59 | -1 | 6 | 0 | 0.00 | M | M | 5.3 | 18 | 280 | M | M | 0 | | 23 | 296 |
| 22 | 65 | 48 | 57 | -3 | 8 | 0 | 0.00 | M | M | 4.5 | 13 | 300 | M | M | 0 | | 16 | 186 |
| 23 | 68 | 53 | 61 | 1 | 4 | 0 | 0.00 | M | M | 9.9 | 30 | 290 | M | M | 3 | | 36 | 296 |
| 24 | 73 | 47 | 60 | 0 | 5 | 0 | 0.00 | M | M | 7.2 | 2 21 | 280 | M | M | 0 | 1 | 32 | 266 |
| 25 | 60 | 52 | 56 | -4 | 9 | 0 | 0.00 | M | M | 7.5 | 13 | 260 | M | M | 6 | | 21 | 286 |
| 26 | 65 | 48 | 57 | -3 | 8 | 0 | 0.00 | M | M | 5.2 | 17 | 290 | M | M | 2 | | 23 | 296 |
| 27 | 79 | 47 | 63 | 3 | 2 | 0 | 0.00 | M | M | 4.8 | 15 | 300 | M | M | 0 | | M | 1 |
| 28 | 89 | 50 | 70 | 10 | 0 | 5 | 0.00 | M | M | 5.4 | 1 23 | 290 | M | M | 0 | | 27 | 290 |
| 29 | 74 | 51 | 63 | 3 | 2 | 0 | 0.00 | M | M | 4.5 | 15 | 200 | M | M | 0 | | 21 | 210 |
| 30 | 69 | 54 | 62 | 1 | 3 | 0 | 0.00 | M | M | 5.5 | 13 | 200 | M | M | 3 | | 17 | 176 |
| 31 | 88 | 53 | 71 | 10 | 0 | 6 | 0.00 | М | М | 1 3 5 4 5 1 | 20 | U 1570 | M | М | 0 | 18 | 25 | 86 |
| SM | 2088 | 149 | 90 | | 227 | 11 | 1.47 | 1 | | 174.4 | 1 | | M | | 63 | | | |
| | 67.4 | | | | | | *===== | | | | | STST | М | M | 2 | | MAX (MPI | |

40 250

NOTES

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: LONG BEACH AIRPORT CA

MONTH: MARCH
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

| | LONGITOL | DE: 118 9 W |
|---|--|---|
| [TEMPERATURE DATA] | [PRECIPITATION DATA] | SYMBOLS USED IN COLUMN 16 |
| AVERAGE MONTHLY: 57.7 DPTR FM NORMAL: -1.9 HIGHEST: 89 ON 28 LOWEST: 42 ON 12 | GRTST 24HR 0.66 ON 10-11 SNOW, ICE PELLETS, HAIL TOTAL MONTH: M GRTST 24HR M ON M | 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS 3 = THUNDER |
| [NO. OF DAYS WITH] | [WEATHER - DAYS WITH] | 9 = BLOWING SNOW X = TORNADO |
| | 0.01 INCH OR MORE: 4 0.10 INCH OR MORE: 4 0.50 INCH OR MORE: 1 1.00 INCH OR MORE: 0 | |
| [HDD (BASE 65)] TOTAL THIS MO. 227 DPTR FM NORMAL 48 TOTAL FM JUL 1 974 DPTR FM NORMAL -95 | CLEAR (SCALE 0-3) 22 PTCLDY (SCALE 4-7) 8 CLOUDY (SCALE 8-10) 1 | |
| [CDD (BASE 65)] | | |

[PRESSURE DATA]

HIGHEST SLP 30.28 ON 14

LOWEST SLP 29.78 ON 23

[REMARKS] #FINAL-03-21#

TOTAL THIS MO.

DPTR FM NORMAL

TOTAL FM JAN 1

DPTR FM NORMAL

11

27

9

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

```
000
CXUS56 KLOX 011630
CLMLGB
```

CLIMATE REPORT NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD 930 AM PDT THU APR 01 2021

... THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF MARCH 2021...

CLIMATE NORMAL PERIOD: 1981 TO 2010 CLIMATE RECORD PERIOD: 1958 TO 2021

| WEATHER | OBSERVED | | | DEPAR | T LAST YEAR'S |
|---|----------------|----------|-----------|---------------|---------------|
| | VALUE | DATE(S) | VALUE | FROM NORMA | Charles - |
| | | | | ***** | *********** |
| TEMPERATURE (F) | | | | | |
| HIGHEST | 89 | 03/28 | | | |
| LOWEST | 42 | 03/12 | Law Co. | 414 | |
| AVG. MAXIMUM | | | | -1.2 | |
| AVG. MINIMUM | 48.1 | | | -2.4 | |
| | 57.8 | | 59.6 | -1.8 | |
| DAYS MAX >= 90 | | | | | |
| DAYS MAX <= 32 | | | | | |
| DAYS MIN <= 32 | 100 | | | | |
| DAYS MIN <= 0 | 0 | | | | |
| PRECIPITATION (| INCHES) | | | | |
| TOTALS | 1.47 | | 1.87 | -0.40 | |
| DAILY AVG. | 0.05 | | | | |
| DAYS >= .01 | 4 | | | | |
| DAYS >= .10 | 4 | | | | |
| DAYS >= .50 | 1 | | | | |
| DAYS >= 1.00 | 0 | | | | |
| GREATEST | | | | | |
| | 0.66 | 03/10 TO | 03/11 | | |
| CONTRACTOR OF THE PROPERTY OF | 0.60 | 31000 0 | | | |
| DEGREE DAYS | | | | | |
| | 227 | | 179 | 48 | 199 |
| SINCE 7/1 | 974 | | 1069 | -95 | 1.70.0 |
| | | | 1009 | 1 | 1 |
| COOLING TOTAL SINCE 1/1 | 11 27 | | 18 | 9 | 13 |
| | | | 44.44.444 | | |
| WIND (MPH) | | | | | |
| AVERAGE WIND SP | EED | | 5.6 | | |
| HIGHEST WIND SP | | | 30/290 | DATE | 03/23 |
| CATALON AND SOUTH AND SOUTH AND | PEED/DIRECTION | | 40/250 | DATE | 25.00 |

SKY COVER

HAZE

POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.21
NUMBER OF DAYS FAIR 23
NUMBER OF DAYS PC 7
NUMBER OF DAYS CLOUDY 1

AVERAGE RH (PERCENT) 61

WEATHER CONDITIONS. NUMBER OF DAYS WITH MIXED PRECIP 0 THUNDERSTORM 2 HEAVY RAIN 3 RAIN 3 LIGHT RAIN FREEZING RAIN 0 4 LT FREEZING RAIN 0 HAIL 0 HEAVY SNOW 0 SNOW 0 LIGHT SNOW 0 SLEET 0 FOG W/VIS <= 1/4 MILE FOG 8

3

⁻ INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

Explanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

WFO Monthly/Daily Climate Data

000
CXUS56 KLOX 011155
CF6LGB
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: APRIL
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

| | TEMPERATURE IN F: | | | | | | :PCPN: | | SNOW: | WIN | | | | SHINE | | | :PK WND | | |
|----------|-------------------|----------|------------|----------|--------|------|--------|--------|-------------|-----------|------|---------------------|-----------|------------|---------|----|-----------------------------|------------|--|
| 1 | 2 | 3 | 4 | 5 | 6A | 6B | 7 | 8 | 9 12Z | 10 AVG | 11 | 12 | 13 | 14 | 15 | 16 | | 18 | |
| | | | | | | | WTR | | DPTH | SPD | SPD | DIR | | PSBL | | | SPD | | |
| | | | | | | | | | | | | | | | | | | | |
| 1 2 | 90 66 | 59 55 | 75 61 | 14 0 | 0 4 | _ | 0.00 | M M | M M | | | 290 150 | M M | M M | 9 | 1 | _ | 290 150 | |
| 3 | 73 | 54 | 64 | 3 | 1 | _ | 0.00 | M | M | | | 280 | M | M | _ | 18 | M | M | |
| 4 | 75 | 50 | 63 | 2 | 2 | _ | 0.00 | М | М | | _ | 290 | М | М | | 18 | | 290 | |
| 5 | 68 | 53 | 61 | 0 | 4 | _ | 0.00 | М | М | | | 310 | M | М | 2 | -0 | M | M | |
| 6 | 68 | 55 | 62 | 1 | 3 | _ | 0.00 | М | М | | | 300 | М | М | 4 | | 15 | 180 | |
| 7 | 76 | 54 | 65 | 4 | 0 | 0 | 0.00 | М | М | | | 290 | М | М | 0 | | М | М | |
| 8 | 73 | 54 | 64 | 2 | 1 | 0 | 0.00 | М | М | 5.0 | 18 | 300 | М | М | 1 | 18 | 22 | 310 | |
| 9 | 71 | 53 | 62 | 0 | 3 | 0 | 0.00 | М | М | 5.4 | 9 | 300 | М | М | 3 | 1 | М | М | |
| 10 | 75 | 54 | 65 | 3 | 0 | 0 | 0.00 | М | М | 5.2 | 10 | 300 | М | М | 2 | 1 | М | М | |
| 11 | 69 | 57 | 63 | 1 | 2 | 0 | 0.00 | М | М | 5.4 | 10 | 150 | М | М | 7 | 8 | М | М | |
| 12 | 66 | 58 | 62 | 0 | 3 | 0 | 0.00 | М | М | 6.7 | ' 13 | 220 | М | М | 10 | | 16 | 220 | |
| 13 | 64 | 57 | 61 | -1 | 4 | 0 | Т | М | М | | | 220 | М | М | 10 | | _ | 200 | |
| 14 | 63 | 54 | 59 | -3 | 6 | _ | 0.00 | М | М | | _ | 220 | М | М | 4 | | | 190 | |
| 15 | 67 | 49 | 58 | -4 | 7 | _ | 0.00 | М | М | | | 290 | М | М | 2 | | | 290 | |
| 16 | 69 | 54 | 62 | 0 | 3 | _ | 0.00 | М | М | | _ | 200 | М | М | _ | 8 | | 210 | |
| 17 | 71 | 54 | 63 | 0 | 2 | _ | 0.00 | М | М | | | 300 | М | М | 3 | | 18 | 260 | |
| 18 | 87 | 54 | 71 | 8 | 0 | _ | 0.00 | М | М | | | 270 | М | М | _ | 18 | | 280 | |
| 19 | 85 | 54 | 70 | 7 | 0 | _ | 0.00 | М | М | | _ | 280 | М | М | 0 | | | 290 | |
| 20 21 | 64 66 | 57 57 | 61 62 | -2 -1 | 4 | _ | 0.00 | М | М | | _ | 120 160 | М | М | 5 9 | | | 190 200 | |
| 21 | 62 | 57 58 | 60 | -3 | 3 5 | _ | 0.01 | M M | M M | | | 290 | M M | M M | 9 10 | | 23 M | 200 M | |
| 23 | 65 | 57 | 61 | -3 -2 | 4 | _ | 0.00 | M | M | | | 200 | M | M | 8 | | | 190 | |
| 24 | 66 | 55 | 61 | -3 | 4 | | 0.00 | M | M | | _ | 300 | M | M | 7 | | | 290 | |
| 25 | 66 | 55 | 61 | -3 | 4 | 0 | T | М | М | | | 290 | М | М | 5 | | | 290 | |
| 26 | 66 | 55 | 61 | -3 | 4 | _ | 0.01 | М | М | | _ | 290 | M | М | 7 | | | 270 | |
| 27 | 67 | 53 | 60 | -4 | 5 | _ | 0.00 | М | M | | | 280 | М | M | | 8 | | 280 | |
| 28 | 84 | 51 | 68 | 4 | 0 | _ | 0.00 | М | М | | _ | 280 | М | М | 0 | - | _ | 290 | |
| 29 | 89 | 55 | 72 | 8 | 0 | 7 | 0.00 | М | М | | | 290 | М | М | 0 | | 27 | 280 | |
| 30 | 89 ==== | 58 | 74 | 10 | 0 | | 0.00 | M | M | | | 300 | M | M | 0 | | _ | 280 | |
| SM | 2160 | 164 | 1 3 | | 78 | 40 | 0.02 | M | 1 : | 175.8 | 3 | ==== | М | | 111 | == | ====== | = | |
| | 72.6 | | | ===: | ==== | ==== | ===== | MISC | :====: } | 5.9 | FA | ==== STST 270 | ==== M | ===== M | 4 | # | ====== MAX(MPH 33 280 | H) | |

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6), PAGE 2

STATION: LONG BEACH AIRPORT CA

1 = FOG OR MIST

8 = SMOKE OR HAZE

9 = BLOWING SNOW X = TORNADO

3 = THUNDER 4 = ICE PELLETS

5 = HAIL

2 = FOG REDUCING VISIBILITY

TO 1/4 MILE OR LESS

6 = FREEZING RAIN OR DRIZZLE

VSBY 1/2 MILE OR LESS

7 = DUSTSTORM OR SANDSTORM:

MONTH: APRIL
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 63.4
DPTR FM NORMAL: 1.0
HIGHEST: 90 ON 1
LOWEST: 49 ON 15

TOTAL FOR MONTH: 0.02 DPTR FM NORMAL: -0.58 GRTST 24HR 0.01 ON 21-21

GRTST 24HR 0.01 ON 21-21

SNOW, ICE PELLETS, HAIL TOTAL MONTH: M

GRTST 24HR M ON M GRTST DEPTH: M ON M

[NO. OF DAYS WITH] [WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0 0.01 INCH OR MORE: 2
MAX 90 OR ABOVE: 1 0.10 INCH OR MORE: 0
MIN 32 OR BELOW: 0 0.50 INCH OR MORE: 0
MIN 0 OR BELOW: 0 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 78 CLEAR (SCALE 0-3) 17
DPTR FM NORMAL -28 PTCLDY (SCALE 4-7) 8
TOTAL FM JUL 1 1052 CLOUDY (SCALE 8-10) 5

DPTR FM NORMAL -124

[CDD (BASE 65)]
TOTAL THIS MO. 40

DPTR FM NORMAL 11 [PRESSURE DATA]
TOTAL FM JAN 1 67 HTGHEST SLP 30 1

TOTAL FM JAN 1 67 HIGHEST SLP 30.14 ON 3 DPTR FM NORMAL 20 LOWEST SLP 29.72 ON 11

[REMARKS] #FINAL-04-21# These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

```
000
CXUS56 KLOX 011630
CLMLGB
CLIMATE REPORT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD
930 AM PDT SAT MAY 01 2021
...THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF APRIL 2021...
CLIMATE NORMAL PERIOD: 1981 TO 2010
CLIMATE RECORD PERIOD: 1958 TO 2021
WEATHER
              OBSERVED
                              NORMAL DEPART
                                             LAST YEAR'S
              VALUE DATE(S) VALUE
                                             VALUE
                                     FROM
                                     NORMAL
......
TEMPERATURE (F)
               90 04/01
HIGHEST
              49
LOWEST
                    04/15
                              71.7
53.2
AVG. MAXIMUM 72.0
                                      0.3
AVG. MINIMUM 54.8
                                      1.6
MEAN
              63.4
                              62.4
                                      1.0
DAYS MAX >= 90
DAYS MAX <= 32
DAYS MIN <= 32
                0
DAYS MIN <= 0
PRECIPITATION (INCHES)
TOTALS
             0.02
                               0.60
                                    -0.58
DAILY AVG.
             0.00
DAYS >= .01
DAYS >= .10
                0
DAYS >= .50
                0
DAYS >= 1.00
GREATEST
24 HR. TOTAL
             0.01
                    04/21 TO 04/21
                    04/26 TO 04/26
                    04/21 TO 04/21
                    04/26 TO 04/26
STORM TOTAL
              0.01
DEGREE DAYS
            78
HEATING TOTAL
                               106
                                      -28
                                             104
              1052
                               1176
                                      -124
                                              1132
SINCE 7/1
COOLING TOTAL 40
                               29
                                       11
                                               39
                                47
SINCE 1/1
              67
                                       20
                                               52
WIND (MPH)
                            5.9
AVERAGE WIND SPEED
HIGHEST WIND SPEED/DIRECTION
                                     DATE 04/18
                            25/270
```

25/280 04/28 HIGHEST GUST SPEED/DIRECTION 33/280 DATE 04/18 33/290 04/28

SKY COVER

POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.37
NUMBER OF DAYS FAIR 17
NUMBER OF DAYS PC 8
NUMBER OF DAYS CLOUDY 5

AVERAGE RH (PERCENT) 63

WEATHER CONDITIONS. NUMBER OF DAYS WITH

| THUNDERSTORM | 0 | MIXED PRECIP | 0 |
|------------------|---|-----------------------|---|
| HEAVY RAIN | 0 | RAIN | 0 |
| LIGHT RAIN | 2 | FREEZING RAIN | 0 |
| LT FREEZING RAIN | 0 | HAIL | 0 |
| HEAVY SNOW | 0 | SNOW | 0 |
| LIGHT SNOW | 0 | SLEET | 0 |
| FOG | 7 | FOG W/VIS <= 1/4 MILE | 0 |
| HAZF | 7 | | |

INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

Explanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

WFO Monthly/Daily Climate Data

000
CXUS56 KLOX 011155
CF6LGB
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: MAY
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

| TEMPERATURE IN F: | | | | | | | :PCPN: | : | SNOW: | W: WIND :S | | :SUNSHINE: SKY | | | | :PK WND | | |
|-------------------|-------------|----------|----------|---------|--------|------|-----------|--------|----------|------------|----------|----------------|-----------|--------|-----------|---------|-------------------|------------|
| 1 | 2 | 3 | 4 | 5 | 6A | 6B | 7 | 8 | 9 12Z | 10 AVG | 11 MY | 12 2MIN | 13 | 14 | 15 | 16 | | 18 |
| | MAX | | | | | | WTR | | DPTH | SPD | SPD | DIR | | | | | SPD | |
| | | | | | | | | | | | | | | | | | | |
| 1 | 67 | 58 | 63 | -1 | 2 | _ | 0.00 | М | М | | | 150 | М | М | | 1 | _ | 150 |
| 2 | 67 | 59 | 63 | -1 | 2 | | 0.00 | М | | | | 160 | М | М | 5 | | | 150 |
| 3 | 75 | 59 | 67 | 3 | 0 | | 0.00 | М | | | | 290 | М | М | 3 | | М | М |
| 4 | 79 | 60 | 70 | 5 | 0 | | 0.00 | M | | | | 310 | М | М | 4 | 4.0 | М | М |
| 5 | 78 | 60 | 69 | 4 | 0 | | 0.00 | М | | | | 200 | М | М | 5 | 18 | _ | 320 |
| 6 | 70 | 60 | 65 | 0 | 0 | | 0.00 | М | | | | 200 | М | М | 6 | | | 180 |
| 7 8 | 69 71 | 60 | 65 | 0 | 0 | | 0.00 | М | | | | 280 190 | М | М | 8 | | | 220 200 |
| 9 | 71 68 | 60 60 | 66 64 | 1 -1 | 0 1 | | 0.00 | M M | | | | 290 | M M | M M | 5 7 | | | 170 |
| 10 | 67 | 60 | 64 | -1 | 1 | 0 | 0.00 T | M | | | | 210 | M | M | | 18 | | 190 |
| 11 | 73 | 61 | 67 | 2 | 0 | _ | 0.00 | M | | | | 280 | M | M | 7 | 10 | _ | 290 |
| 12 | 73 | 61 | 67 | 2 | 0 | | 0.00 | M | | | | 290 | M | М | 6 | 8 | | 250 |
| 13 | 70 | 60 | 65 | 0 | 0 | | 0.00 | М | | | | 320 | М | М | _ | 8 | M | 230 M |
| 14 | 71 | 60 | 66 | 1 | 0 | | 0.00 | M | | | | 300 | М | М | 5 | Ü | | 300 |
| 15 | 69 | 60 | 65 | -1 | 0 | | 0.00 | M | | | | 200 | M | М | 9 | | | 210 |
| 16 | 66 | 58 | 62 | -4 | 3 | | 0.00 | М | | 5.9 | | 190 | М | М | 10 | | M | M |
| 17 | 68 | 59 | 64 | -2 | 1 | 0 | 0.00 | М | М | 5.3 | 3 10 | 290 | М | М | 8 | | М | М |
| 18 | 71 | 59 | 65 | -1 | 0 | 0 | 0.00 | М | М | | | 190 | М | М | 5 | | М | М |
| 19 | 71 | 60 | 66 | 0 | 0 | 1 | 0.00 | М | М | 6.2 | 2 12 | 190 | М | М | 5 | | 17 | 190 |
| 20 | 70 | 59 | 65 | -1 | 0 | 0 | 0.00 | М | М | 7.2 | 2 13 | 200 | М | М | 6 | | М | М |
| 21 | 73 | 56 | 65 | -1 | 0 | 0 | T | Μ | М | 8.6 | 5 16 | 270 | М | М | 2 | | 24 | 220 |
| 22 | 68 | 52 | 60 | -6 | 5 | 0 | 0.00 | М | М | 5.8 | 3 14 | 230 | М | М | 1 | | 21 | 220 |
| 23 | 74 | 54 | 64 | -2 | 1 | 0 | 0.00 | М | М | 5.3 | 3 15 | 300 | М | М | 0 | | | 290 |
| 24 | 87 | 56 | 72 | 6 | 0 | 7 | 0.00 | М | М | | | 290 | М | М | 0 | | 25 | 290 |
| 25 | 77 | 59 | 68 | 2 | 0 | 3 | 0.00 | М | М | | | 170 | М | М | 0 | | М | М |
| 26 | 69 | 62 | 66 | 0 | 0 | | 0.00 | М | М | | | 160 | М | М | 5 | 8 | | 140 |
| 27 | 72 | 59 | 66 | 0 | 0 | | 0.00 | М | | | _ | 190 | М | М | 3 | | | 200 |
| 28 | 73 | 59 | 66 | 0 | 0 | | 0.00 | М | | | | 310 | М | М | 4 | | | 310 |
| 29 | 69 | 59 | 64 | -2 | 1 | _ | 0.00 | М | | | _ | 300 | М | М | 8 | | | 290 |
| 30 | 68 | 61 | 65 | -1 | 0 | | 0.00 | М | | | | 180 | М | М | 8 | | | 190 |
| 31 | 70 ===== | 60 | 65 | -1 | | _ | 0.00 | M | | | | 200 | M | M | | | 18 | 200 |
| SM | 2213 | 183 | 30 | | 17 | 31 | Т | I | M : | 191. | 5 | | М | | 161 | | | |
| | 71.4 | | | ==== | ==== | ==== | ===== | ====: | ===== | | | ====: STST | ==== M | M | ==== 5 | ==== | ====== MAX(MPH | -=== 1) |

21 290 MISC --->

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6), PAGE 2

LONG BEACH AIRPORT CA STATION:

1 = FOG OR MIST

4 = ICE PELLETS

8 = SMOKE OR HAZE 9 = BLOWING SNOW

3 = THUNDER

X = TORNADO

5 = HAIL

2 = FOG REDUCING VISIBILITY

TO 1/4 MILE OR LESS

6 = FREEZING RAIN OR DRIZZLE

VSBY 1/2 MILE OR LESS

7 = DUSTSTORM OR SANDSTORM:

MONTH: MAY YEAR: 2021 LATITUDE: 33 49 N LONGITUDE: 118 9 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 65.2 TOTAL FOR MONTH: Τ DPTR FM NORMAL: -0.3 DPTR FM NORMAL: -0.26 87 ON 24 GRTST 24HR T ON 10-10 HIGHEST: LOWEST: 52 ON 22

SNOW, ICE PELLETS, HAIL

GRTST 24HR Μ ON Μ GRTST DEPTH: M ON М

TOTAL MONTH: M

[NO. OF DAYS WITH] [WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0.01 INCH OR MORE: MAX 90 OR ABOVE: 0.10 INCH OR MORE: 0 MIN 32 OR BELOW: 0 0.50 INCH OR MORE: 0 MIN Ø OR BELOW: 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 17 CLEAR (SCALE 0-3) 7 DPTR FM NORMAL PTCLDY (SCALE 4-7) -23 CLOUDY (SCALE 8-10) TOTAL FM JUL 1 1069 DPTR FM NORMAL -101

[CDD (BASE 65)] TOTAL THIS MO. 31

DPTR FM NORMAL [PRESSURE DATA] -24

TOTAL FM JAN 1 98 HIGHEST SLP 30.12 ON 23 DPTR FM NORMAL LOWEST SLP 29.81 ON 2 -8

[REMARKS] #FINAL-05-21# These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

```
000
CXUS56 KLOX 011630
CLMLGB
CLIMATE REPORT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD
930 AM PDT TUE JUN 01 2021
...THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF MAY 2021...
CLIMATE NORMAL PERIOD: 1991 TO 2020
CLIMATE RECORD PERIOD: 1958 TO 2021
WEATHER
            OBSERVED
                           NORMAL DEPART
                                         LAST YEAR'S
            VALUE DATE(S) VALUE
                                         VALUE
                                  FROM
                                  NORMAL
TEMPERATURE (F)
              87 05/24
HIGHEST
LOWEST
             52
                  05/22
AVG. MAXIMUM 71.4
                            73.1 -1.7
                            57.9
AVG. MINIMUM 59.0
                                   1.1
MEAN
            65.2
                            65.5
                                   -0.3
DAYS MAX >= 90
DAYS MAX <= 32
DAYS MIN <= 32
DAYS MIN <= 0
PRECIPITATION (INCHES)
TOTALS
                            0.26
                                 -0.26
               Τ
DAILY AVG.
DAYS >= .01
DAYS >= .10
DAYS >= .50
DAYS >= 1.00
GREATEST
           Т
24 HR. TOTAL
                  05/21 TO 05/21
STORM TOTAL
            0.00
DEGREE DAYS
           17
HEATING TOTAL
                             40
                                   -23
SINCE 7/1
             1069
                                   -101
                                          1134
                            1170
           30
                                   -25
COOLING TOTAL
                             55
                                           117
SINCE 1/1
              98
                             106
                                    -8
                                           169
WIND (MPH)
AVERAGE WIND SPEED
                          6.2
HIGHEST WIND SPEED/DIRECTION
                          21/290
                                  DATE 05/24
HIGHEST GUST SPEED/DIRECTION
                          25/290
                                  DATE 05/24
```

POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.50
NUMBER OF DAYS FAIR 7
NUMBER OF DAYS PC 17
NUMBER OF DAYS CLOUDY 7

AVERAGE RH (PERCENT) 67

WEATHER CONDITIONS. NUMBER OF DAYS WITH

| THUNDERSTORM | 0 | MIXED PRECIP | 0 |
|------------------|---|-----------------------|---|
| HEAVY RAIN | 0 | RAIN | 0 |
| LIGHT RAIN | 2 | FREEZING RAIN | 0 |
| LT FREEZING RAIN | 0 | HAIL | 0 |
| HEAVY SNOW | 0 | SNOW | 0 |
| LIGHT SNOW | 0 | SLEET | 0 |
| FOG | 3 | FOG W/VIS <= 1/4 MILE | 0 |
| HAZE | 5 | | |

⁻ INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

Explanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

WFO Monthly/Daily Climate Data

007
CXUS56 KLOX 011155
CF6LGB
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: JUNE
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

| | TEMPERATURE IN F: | | | | | | :PCPN: | PN: SNOW: WIND :SUNSHINE: SK | | | | | | | | | | |
|-----------|-------------------|----------|----------|---------|--------|------|--------|------------------------------|------------|-------|------|---------------------|-----------|------------|--------|------|-------------------|------------|
| 1 | 2 | 3 | 4 | 5 | 6A | 6B | 7 | 8 | 9 12Z | 10 | 11 | ====: 12 2MIN | 13 | 14 | 15 | 16 | | 18 |
| DY === | MAX | | | | | | WTR | | DPTH | SPD | SPD | DIR | | PSBL | | | SPD | DR ==== |
| 1 | 76 | 61 | 69 | 2 | 0 | 4 | 0.00 | М | М | 5.5 | 5 10 | 320 | М | М | 6 | 8 | М | М |
| 2 | 77 | 59 | 68 | 1 | 0 | | 0.00 | М | М | | | 170 | М | М | _ | 18 | M | М |
| 3 | 70 | 59 | 65 | -2 | 0 | 0 | 0.00 | М | М | | | 180 | М | М | | 1 | М | М |
| 4 | 68 | 60 | 64 | -3 | 1 | 0 | 0.00 | М | М | 5.5 | 12 | 190 | М | М | 3 | | 16 | 230 |
| 5 | 75 | 60 | 68 | 1 | 0 | 3 | 0.00 | М | М | 6.2 | 10 | 290 | М | М | 4 | | М | М |
| 6 | 68 | 61 | 65 | -2 | 0 | 0 | 0.00 | М | М | 6.3 | 3 13 | 170 | М | М | 6 | | 17 | 170 |
| 7 | 67 | 59 | 63 | -4 | 2 | 0 | Т | М | М | 7.6 | 14 | 160 | М | М | 10 | 18 | 19 | 120 |
| 8 | 73 | 60 | 67 | 0 | 0 | 2 | 0.00 | М | М | 6.5 | 15 | 290 | М | М | 4 | | 19 | 300 |
| 9 | 75 | 61 | 68 | 0 | 0 | _ | 0.00 | М | М | | | 290 | М | М | 0 | | _ | 290 |
| 10 | 77 | 57 | 67 | -1 | 0 | | 0.00 | М | М | | | 290 | М | М | 0 | | 23 | _ |
| 11 | 82 | 57 | 70 | 2 | 0 | _ | 0.00 | М | М | | | 300 | М | М | 0 | | М | М |
| 12 | 85 | 59 | 72 | 4 | 0 | | 0.00 | М | М | | _ | 280 | М | М | 0 | | М | М |
| 13 | 83 | 61 | 72 | 4 | 0 | | 0.00 | М | М | | | 290 | М | М | 2 | _ | М | М |
| 14 | 87 | 62 | 75 | 7 | 0 | _ | 0.00 | М | М | | | 290 | М | М | _ | 8 | М | M |
| 15 | 87 | 63 | 75 | 7 | 0 | | 0.00 | М | М | | | 140 | М | М | 0 | | | 150 |
| 16 | 74 | 64 | 69 | 0 | 0 | | 0.00 | М | М | | | 160 | М | М | | 18 | | 150 |
| 17 | 73 | 62 | 68 | -1 | 0 | | 0.00 | М | М | | | 210 | М | М | 6 | | | 170 |
| 18 | 72 | 63 | 68 | -1 | 0 | _ | 0.00 | М | М | | | 180 | М | М | _ | | _ | 190 |
| 19 | 78 72 | 63 | 71 | 2 | 0 | _ | 0.00 | М | М | | | 300 | М | М | _ | 18 | | 300 |
| 20 21 | 72 79 | 62 62 | 67 71 | -2 1 | 0 0 | | 0.00 | M M | M M | | | 150 300 | M M | M M | 4 3 | 18 | | 150 310 |
| 22 | 79 78 | 61 | 70 | 0 | 0 | _ | 0.00 | M | M | | | 300 | M | M | 9 | | _ | 290 |
| 23 | 81 | 62 | 70 | 2 | 0 | _ | 0.00 | M | M | | | 290 | M | M | 0 | | | 280 |
| 24 | 76 | 61 | 69 | -1 | 0 | | 0.00 | M | M | | | 300 | M | M | 2 | | | 310 |
| 25 | 80 | 60 | 70 | 0 | 0 | | 0.00 | М | М | | | 220 | М | М | 0 | | | 220 |
| 26 | 82 | 61 | 72 | 2 | 0 | | 0.00 | M | M | | | 310 | M | M | 0 | | | 180 |
| 27 | 74 | 62 | 68 | -3 | 0 | | 0.00 | М | M | | | 150 | М | М | _ | 1 | | 160 |
| 28 | 74 | 64 | 69 | -2 | 0 | | 0.00 | М | М | | | 180 | М | М | | 1 | _ | 180 |
| 29 | 69 | 64 | 67 | -4 | 0 | | 0.00 | М | М | | | 200 | М | М | 10 | | | 190 |
| 30 | 74 | 63 | 69 | -2 | 0 | 4 | 0.00 | M | M | 6.3 | 3 14 | 180 | М | M | 6 | | 18 | 170 |
| SM | 2286 | 5 183 | 33 | | | 121 | T | | | 188.5 | 5 | | М | | 102 | == | == = : | = |
| | 76.2 | | | -==: | ===: | -=== | ===== | MISO | ===== C | 6.3 | B FA | ==== STST 290 | ==== M | ===== M | 3 | ==== | MAX(MPH 26 290 | -=== H) |

```
NOTES:
```

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6), PAGE 2

STATION: LONG BEACH AIRPORT CA

JUNE MONTH: YEAR: 2021 LATITUDE: 33 49 N LONGITUDE: 118 9 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 68.6 TOTAL FOR MONTH: Τ 1 = FOG OR MIST

DPTR FM NORMAL: -0.1 DPTR FM NORMAL: -0.07 2 = FOG REDUCING VISIBILITY 87 ON 15,14 GRTST 24HR T ON 7-7 HIGHEST: TO 1/4 MILE OR LESS

LOWEST: 57 ON 11,10

> SNOW, ICE PELLETS, HAIL 4 = ICE PELLETS 5 = HAIL

TOTAL MONTH: M

GRTST 24HR Μ ON

6 = FREEZING RAIN OR DRIZZLE GRTST DEPTH: M ON 7 = DUSTSTORM OR SANDSTORM: Μ VSBY 1/2 MILE OR LESS

> 8 = SMOKE OR HAZE 9 = BLOWING SNOW

X = TORNADO

3 = THUNDER

[NO. OF DAYS WITH] [WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0.01 INCH OR MORE: 0 a MAX 90 OR ABOVE: 0 0.10 INCH OR MORE: 0 MIN 32 OR BELOW: 0.50 INCH OR MORE: 0 MIN Ø OR BELOW: 0 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 3 CLEAR (SCALE 0-3) 15 PTCLDY (SCALE 4-7) 13 DPTR FM NORMAL -3 TOTAL FM JUL 1 CLOUDY (SCALE 8-10) 2 1072

DPTR FM NORMAL -97

[CDD (BASE 65)] TOTAL THIS MO. 121

DPTR FM NORMAL 4 [PRESSURE DATA]

TOTAL FM JAN 1 219 HIGHEST SLP 30.10 ON 10 DPTR FM NORMAL -4 LOWEST SLP 29.68 ON 27

[REMARKS] #FINAL-06-21# These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

```
000
CXUS56 KLOX 011630
CLMLGB
CLIMATE REPORT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD
930 AM PDT THU JUL 01 2021
...THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF JUNE 2021...
CLIMATE NORMAL PERIOD: 1991 TO 2020
CLIMATE RECORD PERIOD: 1958 TO 2021
WEATHER
             OBSERVED
                            NORMAL DEPART
                                           LAST YEAR'S
             VALUE DATE(S) VALUE
                                           VALUE
                                   FROM
                                   NORMAL
 TEMPERATURE (F)
               87
                   06/14
HIGHEST
                   06/15
LOWEST
               57
                   06/10
                   06/11
AVG. MAXIMUM 76.2
                             76.1
                                     0.1
AVG. MINIMUM
             61.1
                             61.3
                                    -0.2
                             68.7
                                     0.0
MEAN
             68.7
DAYS MAX >= 90
DAYS MAX <= 32
DAYS MIN <= 32
DAYS MIN <= 0
PRECIPITATION (INCHES)
TOTALS
                             0.07
                                   -0.07
               Т
DAILY AVG.
DAYS \Rightarrow .01
               0
DAYS >= .10
DAYS >= .50
DAYS >= 1.00
GREATEST
              Т
24 HR. TOTAL
                   06/07 TO 06/07
STORM TOTAL
             0.00
DEGREE DAYS
            3
HEATING TOTAL
                               6
                                     - 3
SINCE 7/1
             1072
                             1169
                                     -97
                                           1134
            121
COOLING TOTAL
                              117
                                     4
                                            155
SINCE 1/1
             219
                              223
                                            324
WIND (MPH)
AVERAGE WIND SPEED
                           6.3
HIGHEST WIND SPEED/DIRECTION
                          21/290
                                   DATE 06/09
HIGHEST GUST SPEED/DIRECTION
                          26/290
                                   DATE 06/09
```

SKY COVER

POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.34
NUMBER OF DAYS FAIR 16
NUMBER OF DAYS PC 12
NUMBER OF DAYS CLOUDY 2

AVERAGE RH (PERCENT) 69

WEATHER CONDITIONS. NUMBER OF DAYS WITH

| THUNDERSTORM | 0 | MIXED PRECIP | 0 |
|------------------|----|-----------------------|---|
| HEAVY RAIN | 0 | RAIN | 0 |
| LIGHT RAIN | 0 | FREEZING RAIN | 0 |
| LT FREEZING RAIN | 0 | HAIL | 0 |
| HEAVY SNOW | 0 | SNOW | 0 |
| LIGHT SNOW | 0 | SLEET | 0 |
| FOG | 10 | FOG W/VIS <= 1/4 MILE | 0 |
| HAZE | 7 | | |

⁻ INDICATES NEGATIVE NUMBERS.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

R INDICATES RECORD WAS SET OR TIED.

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

```
000
CXUS56 KLOX 011630
CLMLGB
CLIMATE REPORT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD
930 AM PDT SUN AUG 01 2021
...THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF JULY 2021...
CLIMATE NORMAL PERIOD: 1991 TO 2020
CLIMATE RECORD PERIOD: 1958 TO 2021
WEATHER
             OBSERVED
                             NORMAL DEPART
                                            LAST YEAR'S
             VALUE DATE(S)
                                            VALUE
                             VALUE
                                    FROM
                                    NORMAL
 TEMPERATURE (F)
                   07/19
HIGHEST
               89
                   07/20
LOWEST
                   07/05
              61
AVG. MAXIMUM
             81.7
                              81.4
                                     0.3
                              64.9
AVG. MINIMUM
             65.7
                                      0.8
MEAN
             73.7
                              73.1
                                      0.6
DAYS MAX >= 90
DAYS MAX <= 32
                0
DAYS MIN <= 32
DAYS MIN <= 0
PRECIPITATION (INCHES)
TOTALS
             0.03
                              0.05
                                    -0.02
DAILY AVG.
             0.00
DAYS >= .01
                1
DAYS >= .10
                0
DAYS >= .50
DAYS >= 1.00
GREATEST
24 HR. TOTAL
             0.03
                   07/26 TO 07/26
STORM TOTAL
             0.03
DEGREE DAYS
HEATING TOTAL
SINCE 7/1
               0
                                0
                                       0
                                               0
COOLING TOTAL
              275
                               253
                                       22
                                             242
              494
SINCE 1/1
                               476
                                      18
                                             566
WIND (MPH)
AVERAGE WIND SPEED
                           5.9
HIGHEST WIND SPEED/DIRECTION
                           17/290
                                    DATE 07/01
                           17/290
                                         07/18
HIGHEST GUST SPEED/DIRECTION
                           20/190
                                    DATE 07/10
```

| 20/290 | 07/18 |
|--------|-------|
| 20/310 | 07/19 |
| 20/290 | 07/30 |

SKY COVER

POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.19
NUMBER OF DAYS FAIR 24
NUMBER OF DAYS PC 7
NUMBER OF DAYS CLOUDY 0

AVERAGE RH (PERCENT) 67

WEATHER CONDITIONS. NUMBER OF DAYS WITH

| THUNDERSTORM | 0 | MIXED PRECIP | 0 |
|------------------|----|-----------------------|---|
| HEAVY RAIN | 0 | RAIN | 0 |
| LIGHT RAIN | 1 | FREEZING RAIN | 0 |
| LT FREEZING RAIN | 0 | HAIL | 0 |
| HEAVY SNOW | 0 | SNOW | 0 |
| LIGHT SNOW | 0 | SLEET | 0 |
| FOG | 12 | FOG W/VIS <= 1/4 MILE | 0 |
| HAZF | 16 | | |

⁻ INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

Explanation of the Preliminary Monthly Climate Data (F6) Product

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

WFO Monthly/Daily Climate Data

150
CXUS56 KLOX 011155
CF6LGB
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: JULY
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

| TEMPERATURE IN F: | | | | | | PCPN: | | SNOW: | WI | ND | | :SUNS | SHINE | : SK | Y | :PK V | NND | |
|-------------------|------------|----------|----------|------------|-----------|-----------|-------|-----------|------------|---------------|--------------|------------|-----------|------------|-----------|------------|---------|------------|
| 1 | 2 | 3 | 4 | 5 | 6A | 6B | 7 | 8 | 9 12Z | 10 ΔVG | 11 MX | 12 2MIN | 13 | 14 | 15 | 16 | 5 17 | 18 |
| | | | | | HDD | | WTR | | DPTH | SPD | SPD | DIR | | | | | SPD | |
| | | | | | | | | | | | | | | | | | | |
| 1 | 84 | 63 | 74 | 3 | 0 | 9 | 0.00 | М | М | | | 290 | М | М | 4 | | | 290 |
| 2 | 82 | 64 | 73 | 1 | 0 | | 0.00 | М | М | | | 310 | М | М | | 18 | | 180 |
| 3 | 84 | 64 | 74 | 2 | 0 | | 0.00 | М | М | | | 310 | М | М | | 18 | | 310 |
| 4 | 80 | 62 | 71 | -1 | 0 | | 0.00 | М | М | | | 290 | М | М | | 8 | | 290 |
| 5 | 80 | 61 | 71 | -1 | 0 | | 0.00 | М | М | | | 300 | М | М | | 18 | | 320 |
| 6 | 80 | 62 | 71 | -1 | 0 | _ | 0.00 | М | М | | | 290 | М | М | - | 8 | _ | 300 |
| 7 | 73 | 64 | 69 | -3 | 0 | | 0.00 | М | М | | | 170 | М | М | 3 | | | 180 |
| 8 9 | 78 87 | 65 67 | 72 77 | 0 | 0 | | 0.00 | М | М | | _ | 160 | М | М | 1 | | | 160 150 |
| 10 | 83 | 67 | 77 75 | 4 2 | 0 0 | | 0.00 | M M | M M | | | 290 180 | M M | M M | 0 0 | | _ | 190 |
| 11 | 77 | 66 | 72 | -1 | 0 | | 0.00 | M | M | | | 190 | M | M | 1 | | | 180 |
| 12 | 74 | 66 | 70 | -3 | 0 | | 0.00 | M | M | | | 190 | M | M | 3 | | | 220 |
| 13 | 82 | 67 | 75 | 2 | 0 | _ | 0.00 | М | М | | | 160 | M | M | | 18 | | 170 |
| 14 | 77 | 68 | 73 | 0 | 0 | | 0.00 | М | М | | | 190 | М | М | 2 | 10 | | 180 |
| 15 | 83 | 67 | 75 | 2 | 0 | | 0.00 | M | M | | | 290 | М | M | | 8 | | 280 |
| 16 | 85 | 67 | 76 | 3 | 0 | | 0.00 | M | М | | | 300 | M | М | 2 | Ū | | 320 |
| 17 | 86 | 67 | 77 | 3 | 0 | | 0.00 | М | M | | | 320 | М | М | 1 | | | 290 |
| 18 | 87 | 68 | 78 | 4 | 0 | | 0.00 | М | М | | | 290 | М | М | 0 | | | 290 |
| 19 | 89 | 69 | 79 | 5 | 0 | 14 | 0.00 | М | М | 5.8 | 3 16 | 300 | М | М | 0 | 8 | | 310 |
| 20 | 89 | 67 | 78 | 4 | 0 | 13 | 0.00 | М | М | 5.5 | 5 15 | 290 | М | М | 0 | 18 | 18 | 280 |
| 21 | 87 | 67 | 77 | 3 | 0 | 12 | 0.00 | М | М | 6.6 | 13 | 280 | М | М | 0 | 18 | 17 | 290 |
| 22 | 78 | 68 | 73 | -1 | 0 | 8 | 0.00 | М | М | 6.8 | 3 13 | 200 | М | М | 4 | 18 | 18 | 200 |
| 23 | 81 | 67 | 74 | 0 | 0 | 9 | 0.00 | М | М | 5.3 | 1 12 | 300 | М | М | 5 | 18 | 15 | 190 |
| 24 | 79 | 67 | 73 | -1 | 0 | 8 | 0.00 | М | М | 4.3 | 3 13 | 180 | М | М | 2 | | 15 | 180 |
| 25 | 77 | 67 | 72 | -2 | 0 | 7 | 0.00 | М | М | 5.8 | 3 14 | 180 | М | М | 2 | | 18 | 190 |
| 26 | 77 | 67 | 72 | -2 | 0 | 7 | 0.03 | М | М | | | 200 | М | М | 6 | | _ | 190 |
| 27 | 81 | 66 | 74 | 0 | 0 | 9 | 0.00 | М | М | | | 290 | М | М | 5 | 8 | | 290 |
| 28 | 85 | 65 | 75 | 1 | 0 | | 0.00 | М | М | | | 290 | М | М | 0 | | | 290 |
| 29 | 83 | 64 | 74 | 0 | 0 | | 0.00 | М | М | | | 300 | М | М | 0 | 18 | | 300 |
| 30 | 84 | 64 | 74 | 0 | 0 | | 0.00 | М | М | | | 300 | М | М | 0 | 18 | | 290 |
| 31 | 80 ==== | 64 | 72 | -2 ==== | 0 ==== | 7 ==== | 0.00 | M ==== | M ===== | 7.2 ==== | 2 16 ==== | 310 | M ==== | M ===== | 0 ==== | 18 ==== | 19 | 310 |
| SM | 2532 | | | | | 275 | 0.03 | | | 182.7 | | | M | | 59 | | | |
| AV | 81.7 | 7 65 | | -=== | ==== | ==: | ===== | ====: | ====: | | | STST | ==== M | M | 2 | -=== | MAX(MPH | |

```
MISC ----> # 17 290 # 20 190
```

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6), PAGE 2

STATION: LONG BEACH AIRPORT CA

MONTH: JULY
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 73.7 TOTAL FOR MONTH: 0.03

DPTR FM NORMAL: 0.6 DPTR FM NORMAL: -0.02 HIGHEST: 89 ON 20,19 GRTST 24HR 0.03 ON 26-26

LOWEST: 61 ON 5

SNOW, ICE PELLETS, HAIL

TOTAL MONTH: M

GRTST 24HR M ON M GRTST DEPTH: M ON M

1 = FOG OR MIST

2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS

3 = THUNDER

X = TORNADO

4 = ICE PELLETS

5 = HAIL

6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
 VSBY 1/2 MILE OR LESS

8 = SMOKE OR HAZE 9 = BLOWING SNOW

[NO. OF DAYS WITH] [WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0 0.01 INCH OR MORE: 1 MAX 90 OR ABOVE: 0 0.10 INCH OR MORE: 0 MIN 32 OR BELOW: 0 0.50 INCH OR MORE: 0 MIN 0 OR BELOW: 0 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 0 CLEAR (SCALE 0-3) 24
DPTR FM NORMAL 0 PTCLDY (SCALE 4-7) 7
TOTAL FM JUL 1 0 CLOUDY (SCALE 8-10) 0

DPTR FM NORMAL

[CDD (BASE 65)] TOTAL THIS MO. 275

DPTR FM NORMAL 22 [PRESSURE DATA]

TOTAL FM JAN 1 494 HIGHEST SLP 30.05 ON 23 DPTR FM NORMAL 18 LOWEST SLP 29.77 ON 7

[REMARKS]

#FINAL-07-21#

Climatological Report (Monthly)

Issued by NWS

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```
000
CXUS56 KLOX 011630
CLMLGB
CLIMATE REPORT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD
930 AM PDT WED SEP 01 2021
...THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF AUGUST 2021...
CLIMATE NORMAL PERIOD: 1991 TO 2020
CLIMATE RECORD PERIOD: 1958 TO 2021
WEATHER
                OBSERVED
                                  NORMAL
                                          DEPART
                                                    LAST YEAR'S
                VALUE
                        DATE(S)
                                  VALUE
                                          FROM
                                                   VALUE
                                          NORMAL
TEMPERATURE (F)
HIGHEST
                  94
                       08/26
LOWEST
                  62
                       08/28
                       08/29
AVG. MAXIMUM
                83.2
                                   83.2
                                            0.0
AVG. MINIMUM
                65.4
                                   65.5
                                           -0.1
                74.3
                                   74.3
                                            0.0
MEAN
DAYS MAX >= 90
                   4
DAYS MAX <= 32
                   0
DAYS MIN <= 32
                   0
DAYS MIN <= 0
PRECIPITATION (INCHES)
TOTALS
                0.04
                                   0.01
                                           0.03
                0.00
DAILY AVG.
DAYS \Rightarrow .01
                   1
DAYS >= .10
DAYS >= .50
                   0
DAYS >= 1.00
                   0
GREATEST
 24 HR. TOTAL
                0.04
                       08/21 TO 08/21
STORM TOTAL
                0.04
DEGREE DAYS
HEATING TOTAL
                   0
                                      0
                                                       0
                                      0
                                              0
                                                       0
SINCE 7/1
                   0
COOLING TOTAL
                 296
                                    290
                                              6
                                                      347
                 790
SINCE 1/1
                                                     913
WIND (MPH)
AVERAGE WIND SPEED
                                5.7
HIGHEST WIND SPEED/DIRECTION
                                18/290
                                          DATE 08/01
                                18/290
                                                08/14
HIGHEST GUST SPEED/DIRECTION
                                          DATE 08/01
                                23/290
```

SKY COVER

POSSIBLE SUNSHINE (PERCENT) MM
AVERAGE SKY COVER 0.24
NUMBER OF DAYS FAIR 22
NUMBER OF DAYS PC 8
NUMBER OF DAYS CLOUDY 1

AVERAGE RH (PERCENT) 66

WEATHER CONDITIONS. NUMBER OF DAYS WITH

MIXED PRECIP THUNDERSTORM 0 0 **HEAVY RAIN** 0 RAIN 0 LIGHT RAIN 3 FREEZING RAIN 0 LT FREEZING RAIN 0 HAIL 0 **HEAVY SNOW** 0 SNOW 0 LIGHT SNOW 0 **SLEET** 0 FOG 16 FOG W/VIS <= 1/4 MILE 1 HAZE 16

- INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING. T INDICATES TRACE AMOUNT.

\$\$

National Weather Service Los Angeles, CA Weather Forecast Office 520 North Elevar Street Oxnard, CA 93030 805-988-6610 Page Author: LOX Webmaster

Web Master's E-mail: w-lox.webmaster@noaa.gov

Page last modified: Jun 8th, 2021 18:51 UTC

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WFO Monthly/Daily Climate Data

Issued by NWS

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000 CXUS56 KLOX 011155 CF6LGB

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: AUGUST
YEAR: 2021
LATITUDE: 33 49 N
LONGITUDE: 118 9 W

| 1 | | | | | | :PCPN: SNOW: WIND :SUNSHINE: SKY | | | | | | :PK WND | | | | | | |
|-----------|-------------|----------|----------|----------|--------|----------------------------------|-----------|-----------|----------|----------|--------------|-------------|-----------|------------|---------|-----|-------------------|------------|
| 1 | 2 | 3 | 4 | 5 | 6A | 6B | 7 | 8 | 9 12Z | 10 | 11 | 12 2MIN | 13 | 14 | 15 | 16 | | 18 |
| DY === | MAX ==== | MIN | AVG | DEP | HDD | - | WTR | | | SPD | SPD | DIR | | PSBL | S-S | | SPD | |
| 1 | 89 | 63 | 76 | 2 | 0 | 11 | 0.00 | М | М | 6.3 | 3 18 | 290 | М | М | 0 | | 23 | 296 |
| 2 | 92 | 64 | 78 | 4 | 0 | | 0.00 | М | M | | - | 290 | M | M | _ | 8 | | 296 |
| 3 | 89 | 64 | 77 | 3 | 0 | 12 | 0.00 | М | М | | | 300 | М | М | 0 | 8 | 18 | 296 |
| 4 | 85 | 65 | 75 | 1 | 0 | 10 | 0.00 | М | М | 5.9 | 15 | 310 | М | М | 0 | | | 316 |
| 5 | 85 | 65 | 75 | 1 | 0 | 10 | 0.00 | М | М | 5.8 | 3 13 | 200 | М | М | 0 | 18 | 16 | 196 |
| 6 | 73 | 66 | 70 | -4 | 0 | 5 | 0.00 | М | М | 6.2 | 2 12 | 170 | М | М | 7 | 1 | 21 | 200 |
| 7 | 76 | 64 | 70 | -4 | 0 | 5 | 0.00 | М | М | 5.4 | 1 12 | 170 | М | М | 6 | 1 | 15 | 196 |
| 8 | 83 | 65 | 74 | 0 | 0 | | 0.00 | М | М | | | 290 | М | М | 5 | | _ | 176 |
| 9 | 85 | 66 | 76 | 2 | 0 | | 0.00 | М | М | | | 290 | М | М | 1 | | _ | 296 |
| 10 | 86 | 63 | 75 | 1 | 0 | _ | 0.00 | М | М | | _ | 290 | М | М | | 18 | _ | 300 |
| 11 | 91 | 68 | 80 | 6 | 0 | 15 | T | М | М | | | 290 | М | М | 0 | | | 296 |
| 12 | 91 | 68 | 80 | 6 | 0 | | 0.00 | М | М | | | 310 | М | М | 0 | | | 210 |
| 13 | 83 | 66 | 75 | 1 | 0 | _ | 0.00 | М | М | | _ | 290 | М | М | 1 | | _ | 216 |
| 14 | 87 | 68 | 78 | 4 | 0 | | 0.00 | М | М | | | 290 | М | М | | 8 | | 296 |
| 15 | 88 | 67 | 78 | 4 | 0 | | 0.00 | М | М | | | 190 | М | М | 0 | 10 | | 200 |
| 16 | 80 | 68 | 74 72 | 0 | 0 | | 0.00 | М | М | | | 220 | М | М | | 18 | | 216 |
| 17 18 | 77 77 | 68 69 | 73 73 | -1 -1 | 0 0 | 8 | 0.00 T | М | М | | | 200 210 | М | М | 6 10 | 1 | _ | 216 186 |
| 19 | 80 | 67 | 73 74 | -1 | 0 | _ | 0.00 | M M | M M | | | 210 | М | M M | 2 | 1 | _ | 236 |
| 20 | 78 | 68 | 73 | -1 | 0 | | 0.00 | M | M | | | 290 | M M | M | 5 | | | 196 |
| 21 | 75 | 65 | 70 | -1 -4 | 0 | | 0.04 | M | M | | | 300 | M | M | 7 | 18 | _ | 160 |
| 22 | 77 | 66 | 72 | -2 | 0 | _ | 0.00 | M | M | | | 310 | M | M | 6 | 10 | _ | 316 |
| 23 | 77 | 63 | 70 | -4 | 0 | | 0.00 | М | M | | | 310 | М | M | _ | 18 | _ | 196 |
| 24 | 81 | 63 | 72 | -2 | 0 | | 0.00 | M | М | | | 290 | M | M | 0 | | | 296 |
| 25 | 87 | 64 | 76 | 2 | 0 | | 0.00 | М | М | | | 300 | М | М | | 1 | | 296 |
| 26 | 94 | 66 | 80 | 6 | 0 | | 0.00 | М | М | 4.7 | 7 17 | 310 | М | М | 0 | 18 | 21 | 296 |
| 27 | 89 | 64 | 77 | 3 | 0 | 12 | 0.00 | М | М | 6.6 | 15 | 300 | М | М | 0 | 18 | 18 | 300 |
| 28 | 87 | 62 | 75 | 1 | 0 | 10 | 0.00 | М | М | 4.7 | 7 12 | 150 | М | М | 3 | 128 | 3 16 | 156 |
| 29 | 84 | 62 | 73 | -1 | 0 | 8 | 0.00 | М | М | | | 300 | М | М | 3 | 18 | | 300 |
| 30 | 79 | 65 | 72 | -2 | 0 | 7 | 0.00 | М | М | 5.4 | 1 12 | 170 | М | М | 1 | 18 | 16 | 176 |
| 31 === | 74 | 65 | 70 | -4 | 0 | | 0.00 | M ==== | M | | | 220 | M ==== | M | - | 8 | 14 | 200 |
| SM | 2579 | 202 | 27 | | 0 | 296 | 0.04 | ı | 1 : | 175.9 | 9 | | М | | 74 | | | |
| | 83.2 | | | ===: | | | ===== | MISO | 3 | 5.7 + | 7 FA # 18 | STST 290 | ==== M | ===== M | 2 | | MAX(MPH 23 290 | H) |

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6), PAGE 2

STATION: LONG BEACH AIRPORT CA

MONTH: **AUGUST** YEAR: 2021 33 49 N LATITUDE: LONGITUDE: 118 9 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 74.3 TOTAL FOR MONTH: 0.04 1 = FOG OR MIST

DPTR FM NORMAL: 2 = FOG REDUCING VISIBILITY DPTR FM NORMAL: 0.0 0.03 HIGHEST: 94 ON 26 GRTST 24HR 0.04 ON 21-21 TO 1/4 MILE OR LESS

LOWEST: 62 ON 29,28 3 = THUNDER

SNOW, ICE PELLETS, HAIL 4 = ICE PELLETS

5 = HAILTOTAL MONTH: M GRTST 24HR M ON Μ

6 = FREEZING RAIN OR DRIZZLE GRTST DEPTH: M ON 7 = DUSTSTORM OR SANDSTORM: М VSBY 1/2 MILE OR LESS

> 8 = SMOKE OR HAZE9 = BLOWING SNOW

X = TORNADO

[NO. OF DAYS WITH] [WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0 0.01 INCH OR MORE: 1 MAX 90 OR ABOVE: 4 0.10 INCH OR MORE: 0 MIN 32 OR BELOW: 0 0.50 INCH OR MORE: 0 MIN Ø OR BELOW: 0 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 0 CLEAR (SCALE 0-3) 22 DPTR FM NORMAL PTCLDY (SCALE 4-7) 0 8 CLOUDY (SCALE 8-10) TOTAL FM JUL 1 0 1

DPTR FM NORMAL а

[CDD (BASE 65)] TOTAL THIS MO.

296 DPTR FM NORMAL [PRESSURE DATA] 6

TOTAL FM JAN 1 790 HIGHEST SLP 30.09 ON 14 DPTR FM NORMAL 24 LOWEST SLP 29.66 ON 27

[REMARKS] #FINAL-08-21#

National Weather Service Los Angeles, CA Weather Forecast Office 520 North Elevar Street Oxnard, CA 93030 805-988-6610 Page Author: LOX Webmaster

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000 CXUS56 KLOX 011155 CF6LGB

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: SEPTEMBER YEAR: 2021 LATITUDE: 33 49 N

LATITUDE: 33 49 N LONGITUDE: 118 9 W

| | TEMPERATURE IN F: | | | | | | :PCPN: | SNOW: | | WIND :SUNSHINE: SKY | | | | | :PK WND | | | |
|-----------|-------------------|------------|--------|-----------|-------|-----|---------------|-----------|------------|---------------------|----------|-------------|------------|-------|---------|------------|-------------------|-------------|
| 1 | 2 | 3 | 4 | 5 | 6A | 6B | 7 | 8 | 9 12Z | 10 | 11 | 12 2MIN | 13 | 14 | 15 | 16 | | 18 |
| | | | | | | | WTR | | DPTH | SPD | SPD | DIR | | | | | SPD | |
| 1 | 75 | 66 | 71 | -3 | 0 | 6 | 0.00 | М | М | 5.6 | 12 | 190 | М | М | 7 | 8 | 18 | 196 |
| 2 | 77 | 65 | 71 | -3 | 0 | _ | 0.00 | M | М | | | 300 | M | M | 6 | • | _ | 296 |
| 3 | 81 | 64 | 73 | -1 | 0 | | 0.00 | М | М | | | 280 | М | М | _ | 8 | | 300 |
| 4 | 92 | 62 | 77 | 3 | 0 | | 0.00 | М | М | | | 300 | М | М | | 18 | | 300 |
| 5 | 97 | 64 | 81 | 7 | 0 | | 0.00 | М | М | | | 300 | Μ | М | 0 | 18 | | 300 |
| 6 | 78 | 68 | 73 | -1 | 0 | 8 | 0.00 | М | М | 6.4 | 15 | 150 | Μ | М | 5 | 8 | 19 | 156 |
| 7 | 79 | 68 | 74 | 0 | 0 | 9 | 0.00 | М | М | 5.3 | 3 13 | 300 | Μ | М | 1 | 18 | 16 | 216 |
| 8 | 85 | 66 | 76 | 2 | 0 | 11 | 0.00 | М | М | 6.4 | 14 | 320 | Μ | М | 2 | 18 | 16 | 316 |
| 9 | 91 | 65 | 78 | 4 | 0 | 13 | 0.00 | М | М | 5.4 | 13 | 310 | Μ | М | 1 | 138 | 3 14 | 196 |
| 10 | 88 | 65 | 77 | 3 | 0 | 12 | T | М | М | 6.5 | 5 14 | 310 | Μ | М | 1 | 18 | | 300 |
| 11 | 92 | 68 | 80 | 6 | 0 | 15 | 0.00 | М | М | 6.6 | 18 | 300 | Μ | М | 0 | | | 300 |
| 12 | 89 | 61 | 75 | 1 | 0 | 10 | 0.00 | М | М | | | 300 | Μ | М | 0 | 18 | 20 | 296 |
| 13 | 85 | 59 | 72 | -2 | 0 | | 0.00 | М | М | | | 310 | Μ | М | 3 | 18 | | 296 |
| 14 | 76 | 60 | 68 | -6 | 0 | 3 | 0.00 | М | М | 4.7 | 10 | 310 | Μ | М | 2 | 1 | | 216 |
| 15 | 79 | 61 | 70 | -3 | 0 | | 0.00 | М | М | | | 290 | Μ | М | 4 | 8 | | 176 |
| 16 | 76 | 61 | 69 | -4 | 0 | 4 | 0.00 | М | М | 6.6 | 15 | 300 | М | М | 4 | | | 296 |
| 17 | 74 | 61 | 68 | -5 | 0 | 3 | 0.00 | М | М | 5.5 | 5 13 | 290 | М | М | 3 | | | 176 |
| 18 | 77 | 61 | 69 | -4 | 0 | | 0.00 | М | М | | | 290 | М | М | 3 | | | 300 |
| 19 | 73 | 58 | 66 | -7 | 0 | 1 | 0.00 | М | М | | | 190 | М | М | 1 | 18 | | 186 |
| 20 | 77 | 60 | 69 | -4 | 0 | | 0.00 | М | М | | | 180 | М | М | 0 | 18 | | 200 |
| 21 | 98 | 64 | 81 | 8 | 0 | | 0.00 | М | М | | | 290 | М | М | 0 | | | 296 |
| 22 | 89 | 68 | 79 | 7 | 0 | | 0.00 | М | М | | _ | 300 | М | М | 0 | | | 296 |
| 23 | 82 | 63 | 73 | 1 | 0 | | 0.00 | М | М | | | 310 | М | М | | 8 | | 296 |
| 24 | 79 | 61 | 70 | -2 | 0 | | 0.00 | М | М | | | 320 | М | М | | 18 | | 316 |
| 25 | 78 | 62 | 70 | -2 | 0 | | 0.00 | М | М | | | 280 | М | М | | 1 | | 296 |
| 26 | 70 | 62 | 66 | -6 | 0 | | 0.00 | М | М | | | 290 | М | М | 10 | | | 246 |
| 27 | 70 | 62 | 66 | -6 | 0 | | 0.00 | М | М | | | 180 | М | М | 10 | | | 200 |
| 28 | 72 | 63 | 68 | -3 | 0 | | 0.00 | М | М | | | 300 | М | М | 8 | | | 186 |
| 29 | 76 | 60 | 68 | -3 | 0 | | 0.00 | М | М | | | 290 | М | М | | 18 | | 326 |
| 30 === | 94 | 58 ==== | 76 | 5 ==== | 0 | | 0.00 ===== | M ==== | M :==== | | | 290 ==== | M ===== | M | 0 | 18 ==== | 23 ====== | 296 ==== |
| _ | 2449 | | - | | | 224 | T | | | 162.2 | | :===- | M | | 79 | ===- | ====== | ===- |
| | 81.6 | | | | | | | MIS | C | 5.4 -> | FA 23 | STST 300 | М | М | 3 | | MAX(MPI 27 290 | H) |

NOTES:

LAST OF SEVERAL OCCURRENCES

TO 1/4 MILE OR LESS

6 = FREEZING RAIN OR DRIZZLE

VSBY 1/2 MILE OR LESS

7 = DUSTSTORM OR SANDSTORM:

COLUMN 17 PEAK WIND IN M.P.H.

```
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6), PAGE 2
```

STATION: LONG BEACH AIRPORT CA

3 = THUNDER

5 = HAIL

4 = ICE PELLETS

8 = SMOKE OR HAZE

9 = BLOWING SNOW X = TORNADO

SEPTEMBER MONTH: YEAR: 2021 LATITUDE: 33 49 N LONGITUDE: 118 9 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16 AVERAGE MONTHLY: 72.3 TOTAL FOR MONTH: Т 1 = FOG OR MIST 2 = FOG REDUCING VISIBILITY

DPTR FM NORMAL: -0.8 DPTR FM NORMAL: -0.08 GRTST 24HR T ON 10-10 HIGHEST: 98 ON 21

58 ON 30,19 LOWEST:

> SNOW, ICE PELLETS, HAIL TOTAL MONTH: M

GRTST 24HR Μ ON ON Μ

GRTST DEPTH:

[NO. OF DAYS WITH] [WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0.01 INCH OR MORE: a a MAX 90 OR ABOVE: 0.10 INCH OR MORE: 0 6 MIN 32 OR BELOW: 0 0.50 INCH OR MORE: 0 MIN Ø OR BELOW: 0 1.00 INCH OR MORE:

[HDD (BASE 65)]

TOTAL THIS MO. 0 CLEAR (SCALE 0-3) 19 DPTR FM NORMAL PTCLDY (SCALE 4-7) -1 0 CLOUDY (SCALE 8-10) TOTAL FM JUL 1

DPTR FM NORMAL 0

[CDD (BASE 65)] TOTAL THIS MO. 224

DPTR FM NORMAL -21 [PRESSURE DATA]

TOTAL FM JAN 1 1014 HIGHEST SLP 30.08 ON 18 DPTR FM NORMAL 3 LOWEST SLP 29.78 ON 8

[REMARKS] #FINAL-09-21#

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```
000
CXUS56 KLOX 011630
CLMLGB
CLIMATE REPORT
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD
930 AM PDT FRI OCT 01 2021
...THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF SEPTEMBER 2021...
CLIMATE NORMAL PERIOD: 1991 TO 2020
CLIMATE RECORD PERIOD: 1958 TO 2021
WEATHER
                OBSERVED
                                 NORMAL
                                         DEPART
                                                   LAST YEAR'S
                VALUE
                       DATE(S)
                                 VALUE
                                         FROM
                                                  VALUE
                                         NORMAL
TEMPERATURE (F)
                  98
                       09/21
HIGHEST
                       09/19
LOWEST
                  58
                       09/30
AVG. MAXIMUM
                81.6
                                   82.4
                                          -0.8
AVG. MINIMUM
               62.9
                                  63.9
                                          -1.0
                                  73.1
                                          -0.8
MEAN
                72.3
DAYS MAX >= 90
                  6
DAYS MAX <= 32
                   0
DAYS MIN <= 32
DAYS MIN <= 0
PRECIPITATION (INCHES)
TOTALS
                                   0.08
                                         -0.08
DAILY AVG.
                   Т
                  0
DAYS \Rightarrow .01
DAYS >= .10
DAYS >= .50
                  0
DAYS >= 1.00
GREATEST
 24 HR. TOTAL
                 Τ
                       09/10 TO 09/10
STORM TOTAL
                0.00
DEGREE DAYS
                                     1
                                             -1
                                                       0
HEATING TOTAL
                  0
                                     0
                                             0
                                                       0
SINCE 7/1
                  0
COOLING TOTAL
                224
                                    245
                                            -21
                                                     315
               1014
                                   1011
SINCE 1/1
                                             3
                                                    1228
WIND (MPH)
AVERAGE WIND SPEED
                                5.4
HIGHEST WIND SPEED/DIRECTION
                               23/300
                                         DATE 09/22
HIGHEST GUST SPEED/DIRECTION
                             27/290
                                         DATE 09/22
SKY COVER
POSSIBLE SUNSHINE (PERCENT)
                             MM
```

AVERAGE SKY COVER 0.26

NUMBER OF DAYS FAIR 21

NUMBER OF DAYS PC 6

NUMBER OF DAYS CLOUDY 3

AVERAGE RH (PERCENT) 66

WEATHER CONDITIONS. NUMBER OF DAYS WITH

THUNDERSTORM MIXED PRECIP 0 1 **HEAVY RAIN** 0 **RAIN** 0 LIGHT RAIN 0 FREEZING RAIN 0 LT FREEZING RAIN 0 HAIL 0 **HEAVY SNOW** 0 **SNOW** LIGHT SNOW 0 SLEET 0 FOG 15 FOG W/VIS <= 1/4 MILE 0 HAZE 18

- INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

\$\$

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STATION:

000 CXUS56 KLOX 011155 CF6LGB

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

LONG BEACH AIRPORT CA MONTH: OCTOBER 2021 YEAR:

LATITUDE: 33 49 N LONGITUDE: 118 9 W

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

LONG BEACH AIRPORT CA STATION:

MONTH: **OCTOBER** YEAR: 2021 LATITUDE: 33 49 N LONGITUDE: 118 9 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST

AVERAGE MONTHLY: 66.6 TOTAL FOR MONTH: 0.39
DPTR FM NORMAL: -1.8 DPTR FM NORMAL: -0.14 2 = FOG REDUCING VISIBILITY 94 ON 3, 2 GRTST 24HR 0.14 ON 23-23 HIGHEST: TO 1/4 MILE OR LESS 50 ON 26,13 3 = THUNDER

SNOW, ICE PELLETS, HAIL 4 = ICE PELLETS TOTAL MONTH: M 5 = HAIL

```
6 = FREEZING RAIN OR DRIZZLE
                             GRTST 24HR
                                              M ON
                                                              7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
                             GRTST DEPTH: M ON
                                                              8 = SMOKE OR HAZE
                             [WEATHER - DAYS WITH]
[NO. OF DAYS WITH]
                                                              9 = BLOWING SNOW
                                                              X = TORNADO
MAX 32 OR BELOW:
                             0.01 INCH OR MORE:
MAX 90 OR ABOVE:
MIN 32 OR BELOW:
                       4
                             0.10 INCH OR MORE:
                             0.50 INCH OR MORE:
                       0
MIN 0 OR BELOW:
                             1.00 INCH OR MORE:
                                                      0
                       0
[HDD (BASE 65) ]
TOTAL THIS MO.
                            CLEAR (SCALE 0-3) 21
PTCLDY (SCALE 4-7) 9
                      35
DPTR FM NORMAL
                     16
TOTAL FM JUL 1
                             CLOUDY (SCALE 8-10) 1
                      35
                     18
DPTR FM NORMAL
[CDD (BASE 65) ]
TOTAL THIS MO.

DPTR FM NORMAL
                     92
                            [PRESSURE DATA]
HIGHEST SLP 30.18 ON 27
LOWEST SLP 29.61 ON 11
                    -32
TOTAL FM JAN 1 1106
DPTR FM NORMAL
                    -29
[REMARKS]
#FINAL-10-21#
```

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Los Angeles, CA

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| versions: 1 2 3 4 5 | 00/09 | 10 11 12 13 | 14 15 16 1 | 16 19 20 | <u> </u> | | |
|---|----------------------|------------------|-------------------|----------------|--------------|------------|------|
| 000 CXUS56 KLOX 011 CLMLGB | .630 | | | | | | |
| CLIMATE REPORT NATIONAL WEATHE 930 AM PDT MON | | | ELES/OXNA | ARD | | | |
| | | | | | | | |
| THE LONG BEA | CH AIRP | ORT CA CLI | MATE SUMM | MARY FOR T | THE MONTH | OF OCTOBER | 2021 |
| CLIMATE NORMAL CLIMATE RECORD | | | | | | | |
| WEATHER | OBSERV | ED | NORMAL | DEPART | LAST YE | AR`S | |
| | VALUE | DATE(S) | | FROM NORMAL | | | |
| TEMPERATURE (F) | | | | | | • • • • | |
| HIGHEST | 94 | 10/02 | | | | | |
| | | 10/03 | | | | | |
| LOWEST | | 10/13 10/26 | | | | | |
| AVG. MAXIMUM AVG. MINIMUM MEAN | 76.6 | 10, 20 | 77.7 | -1.1 | | | |
| AVG. MINIMUM | 56.5 | | 59.1 68.4 | -2.6 | | | |
| DAYS MAX >= 90 | 4 | | 00.4 | -1.8 | | | |
| DAYS MAX <= 32 | 0 | | | | | | |
| DAYS MIN <= 32 DAYS MIN <= 0 | | | | | | | |
| DATS FILM (= 0 | O | | | | | | |
| PRECIPITATION (| INCHES) | | 0.53 | 0.14 | | | |
| TOTALS DAILY AVG. | 0.39 | | 0.53 | -0.14 | | | |
| DAYS >= .01 | 5 | | | | | | |
| DAYS >= .10 | 2 | | | | | | |
| DAYS >= .50 DAYS >= 1.00 GREATEST | 0 | | | | | | |
| 24 HR. TOTAL STORM TOTAL | | 10/23 TO | 10/23 | | | | |
| DEGREE DAYS | | | | | | | |
| HEATING TOTAL | 35 | | 19 | 16 | 4 | | |
| SINCE 7/1 | 35 | | 17 | 18 | 4 | | |
| COOLING TOTAL SINCE 1/1 | 92 1106 | | 124 1135 | -32 -29 | 218 1446 | | |
| | | | | | | | |
| WIND (MPH) | | | | | | | |
| AVERAGE WIND SP | PEED | | 4.7 | | | | |
| HIGHEST WIND SE HIGHEST GUST SE | PEED/DIR PEED/DIR | ECTION ECTION | 33/350 41/350 | DATE 16 | 9/11 9/11 | | |
| SKY COVER | | | | | | | |
| POSSIBLE SUNSHI | | | | | | | |
| AVERAGE SKY COV NUMBER OF DAYS | | 0.24 21 | | | | | |
| NUMBER OF DAYS NUMBER OF DAYS | PC | 9 | | | | | |
| | | | | | | | |
| AVERAGE RH (PER | RCENT) | 61 | | | | | |
| WEATHER CONDITI | ONS. NU | | | | | | |
| THUNDERSTORM HEAVY RAIN | | | MIXED PRE RAIN | CIP | | 0 1 | |
| LIGHT RAIN | | | FREEZING | RAIN | | 0 | |
| LT FREEZING RAI | :N | | HAIL | | | 0 | |
| HEAVY SNOW LIGHT SNOW | | 0 0 | SNOW SLEET | | | 0 0 | |
| FOG | | 13 | FOG W/VIS | S <= 1/4 N | MILE | 1 | |
| HAZE | | 9 | | | | | |
| - INDICATES NE | | | IED. | | | | |

MM INDICATES DATA IS MISSING. T INDICATES TRACE AMOUNT.

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000 CXUS56 KLOX 020031 RRA CF6LGB

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA NOVEMBER MONTH:

YEAR: 2021 LATITUDE: 33 49 N LONGITUDE: 118 9 W

| TEMPERATURE IN F: | | | | | | PCPN: | | SNOW: | WIN | | | | SHINE | | | :PK | WND | |
|-------------------|----------|----------|----------|---------|--------|-------|------|--------|----------|-----------|-----|--------------|-----------|--------|----|-----|------------------|------------|
| 1 | 2 | 3 | 4 | 5 | 6A | 6B | 7 | 8 | 9 12Z | 10 AVG | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | | | | | | | WTR | | | | | | | PSBL | | | | |
| | | | | | | | | | | | | | | | | | | |
| 1 | 68 | 55 | 62 | -4 | 3 | | 0.00 | М | М | | | 300 | М | М | | 18 | | 310 |
| 2 | 68 | 55 | 62 | -3 | 3 | | 0.00 | М | М | | | 300 | М | М | | 18 | | 200 |
| 3 | 74 | 56 | 65 | 0 | 0 | | 0.00 | М | М | | | 300 | М | М | | 18 | | 300 |
| 4 | 69 | 56 | 63 | -2 | _ | | 0.00 | М | М | 3.6 | | 130 | М | М | | 128 | | 180 |
| 5 | 66 | 56 | 61 | -4 | 4 | | 0.00 | М | М | | | 180 | М | М | - | 128 | | 180 |
| 6 | 65 | 55 | 60 | -4 | 5 | | 0.00 | М | М | | | 310 | М | М | | 18 | | 280 |
| 7 | 67 | 56 | 62 | -2 | 3 | | 0.00 | М | М | | | 310 | М | М | | 18 | | 290 |
| 8 | 66 | 57 | 62 | -2 | 3 | | 0.00 | М | М | | | 230 | М | М | - | 18 | | 230 |
| 9 | 69 | 55 | 62 | -2 | 3 | | 0.00 | М | М | | | 280 | М | М | | 18 | | 290 |
| 10 | 71 | 58 | 65 | 1 | 0 | | 0.00 | М | М | | | 300 | М | М | | 18 | | 210 |
| 11 | 90 | 56 | 73 | 10 | 0 | | 0.00 | М | М | | | 320 | М | М | | 8 | | 300 |
| 12 13 | 95 88 | 58 | 77 | 14 | 0 | | 0.00 | М | М | | | 290 | М | М | 0 | | | 300 200 |
| | | 58 55 | 73 73 | 10 | 0 | | 0.00 | М | M M | | | 210 300 | M | M M | 0 | | | 300 |
| 14 15 | 90 81 | 54 | 68 | 11 6 | 0 0 | | 0.00 | M M | M | | | 300 | M M | M | - | 18 | | 290 |
| 16 | 63 | 56 | 60 | -2 | 5 | | 0.00 | M | M | | | 120 | M | M | | 18 | | 110 |
| 17 | 67 | 55 | 61 | -1 | 4 | | 0.00 | M | M | | | 310 | M | M | | 18 | | 300 |
| 18 | 66 | 51 | 59 | -2 | 6 | | 0.00 | M | M | | | 290 | M | M | | 18 | | 280 |
| 19 | 66 | 55 | 61 | -2 | 4 | | 0.00 | M | M | 3.4 | | 300 | M | M | | 18 | | 210 |
| 20 | 67 | 56 | 62 | 1 | 3 | | 0.00 | M | M | | | 290 | M | M | | 18 | | 300 |
| 21 | 86 | 52 | 69 | 8 | 0 | | 0.00 | M | M | | | 100 | M | M | | 18 | 25 | 80 |
| 22 | 86 | 56 | 71 | 11 | 0 | | 0.00 | М | М | | | 310 | М | М | 0 | 10 | | 310 |
| 23 | 72 | 55 | 64 | 4 | 1 | | 0.00 | М | М | | | 180 | М | М | 0 | | | 160 |
| 24 | 73 | 51 | 62 | 2 | 3 | | 0.00 | М. | М. | | 16 | | М. | М. | 0 | | 22 | 60 |
| 25 | 80 | 52 | 66 | 6 | 0 | | 0.00 | M | М | | | 100 | M | М | 0 | | | 100 |
| 26 | 80 | 48 | 64 | 5 | 1 | | 0.00 | М | М | | | 290 | М | М | 0 | | | 290 |
| 27 | 76 | 47 | 62 | 3 | 3 | 0 | 0.00 | М | М | 2.2 | . 9 | 170 | М | М | 0 | | 11 | 190 |
| 28 | 79 | 50 | 65 | 6 | 0 | 0 | 0.00 | М | М | 2.9 | 13 | 310 | М | М | 1 | 18 | 14 | 300 |
| 29 | 75 | 47 | 61 | 2 | 4 | 0 | 0.00 | М | М | 1.8 | 7 | 290 | М | М | 0 | 128 | 9 | 190 |
| 30 | 69 | 51 | 60 | 2 | 5 | | 0.00 | М | М | | | 150 | М | М | | 128 | | 150 |
| SM | 2232 | 162 | 22 | | 65 | 50 | 0.00 | 1 | 1 : | 112.8 | : | | М | | 85 | | | |
| | 74.4 | | | | | | | ==== | -===: | | | ==== STST | ==== M | M | 3 | | ===== ИАХ(МРІ | |
| | | | | | | | | MIS | 2 | -> | 23 | 100 | | | | 2 | 29 100 | |
| ==: | | | | | | | | | | | === | ==== | | | | | | |

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: LONG BEACH AIRPORT CA

1 = FOG OR MIST

4 = ICE PELLETS

MONTH: NOVEMBER YEAR: 2021 LATITUDE: 33 49 N LONGITUDE: 118 9 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 64.2 DPTR FM NORMAL: 2.2 HIGHEST:

TOTAL FOR MONTH: 0.00 DPTR FM NORMAL: -0.75 95 ON 12 GRTST 24HR 0.00 ON 1- 1 47 ON 29,27

2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS 3 = THUNDER

LOWEST: SNOW, ICE PELLETS, HAIL TOTAL MONTH: M

```
6 = FREEZING RAIN OR DRIZZLE
                             GRTST 24HR
                                             M ON
                                                             7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
                             GRTST DEPTH: M ON
                                                             8 = SMOKE OR HAZE
                             [WEATHER - DAYS WITH]
[NO. OF DAYS WITH]
                                                             9 = BLOWING SNOW
                                                             X = TORNADO
MAX 32 OR BELOW:
                             0.01 INCH OR MORE:
MAX 90 OR ABOVE:
MIN 32 OR BELOW:
                      3
                            0.10 INCH OR MORE:
                                                      0
                      0
                            0.50 INCH OR MORE:
MIN 0 OR BELOW:
                            1.00 INCH OR MORE:
                                                      0
                      0
[HDD (BASE 65) ]
TOTAL THIS MO.
                            CLEAR (SCALE 0-3) 16
PTCLDY (SCALE 4-7) 14
                     65
DPTR FM NORMAL
                    -53
TOTAL FM JUL 1
                    100
                            CLOUDY (SCALE 8-10) 0
DPTR FM NORMAL
                    -39
[CDD (BASE 65) ]
                     50
TOTAL THIS MO.
                            [PRESSURE DATA]
HIGHEST SLP 30.27 ON 25
LOWEST SLP 29.90 ON 23
DPTR FM NORMAL
                     21
TOTAL FM JAN 1 1156
DPTR FM NORMAL
                     -8
[REMARKS]
#FINAL-11-21#
```

National Weather Service Los Angeles, CA Weather Forecast Office 520 North Elevar Street Oxnard, CA 93030 805-988-6610

Page Author: LOX Webmaster

Web Master's E-mail: <u>w-lox.webmaster@noaa.gov</u> Page last modified: Nov 18th, 2021 21:12 UTC
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National Weather Service Weather Forecast Office

Los Angeles, CA

Climatological Report (Monthly) Issued by NWS

| 000 CXUS56 KLOX 011730 CLMLGB CLIMATE REPORT NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD 930 AM PST WED DEC 01 2021 THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF NOVEMBER 2 CLIMATE NORMAL PERIOD: 1991 TO 2020 CLIMATE RECORD PERIOD: 1958 TO 2021 WEATHER OBSERVED NORMAL NORMAL NORMAL | |
|---|-----|
| NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD 930 AM PST WED DEC 01 2021 | |
| THE LONG BEACH AIRPORT CA CLIMATE SUMMARY FOR THE MONTH OF NOVEMBER 2 CLIMATE NORMAL PERIOD: 1991 TO 2020 CLIMATE RECORD PERIOD: 1958 TO 2021 WEATHER OBSERVED NORMAL DEPART LAST YEAR`S VALUE DATE(S) VALUE FROM VALUE NORMAL | |
| CLIMATE NORMAL PERIOD: 1991 TO 2020 CLIMATE RECORD PERIOD: 1958 TO 2021 WEATHER OBSERVED NORMAL DEPART LAST YEAR`S VALUE DATE(S) VALUE FROM VALUE NORMAL | |
| CLIMATE RECORD PERIOD: 1958 TO 2021 WEATHER OBSERVED NORMAL DEPART LAST YEAR`S VALUE DATE(S) VALUE FROM VALUE NORMAL | 021 |
| NORMAL | |
| | |
| TEMPERATURE (F) HIGHEST 95 11/12 LOWEST 47 11/27 11/29 | |
| AVG. MAXIMUM 74.4 72.5 1.9 AVG. MINIMUM 54.1 51.6 2.5 | |
| MEAN 64.3 62.0 2.3 | |
| DAYS MAX >= 90 3 DAYS MAX <= 32 0 DAYS MIN <= 32 0 | |
| DAYS MIN <= 32 0 DAYS MIN <= 0 0 | |
| PRECIPITATION (INCHES) | |
| TOTALS 0.00 0.75 -0.75 DAILY AVG. 0.00 | |
| DAYS >= .01 0 DAYS >= .10 0 | |
| DAYS >= .50 0 | |
| DAYS >= 1.00 0 GREATEST | |
| 24 HR. TOTAL 0.00 10/31 TO 10/31 STORM TOTAL 0.00 | |
| DEGREE DAYS | |
| HEATING TOTAL 65 118 -53 126 | |
| SINCE 7/1 100 139 -39 MM COOLING TOTAL 50 29 21 41 SINCE 1/1 1156 1164 -8 MM | |
| COOLING TOTAL 50 29 21 41 SINCE 1/1 1156 1164 -8 MM | |
| WIND (MPH) | |
| AVERAGE WIND SPEED 3.8 | |
| HIGHEST WIND SPEED/DIRECTION 23/100 DATE 11/25 HIGHEST GUST SPEED/DIRECTION 29/100 DATE 11/25 | |
| SKY COVER POSSIBLE SUNSHINE (PERCENT) MM AVERAGE SKY COVER 0.28 | |
| NUMBER OF DAYS FAIR 16 NUMBER OF DAYS PC 12 NUMBER OF DAYS CLOUDY 2 | |
| AVERAGE RH (PERCENT) 62 | |
| WEATHER CONDITIONS. NUMBER OF DAYS WITH THUNDERSTORM 0 MIXED PRECIP 0 | |
| HEAVY RAIN 0 RAIN 0 LIGHT RAIN 0 FREEZING RAIN 0 | |
| LT FREEZING RAIN 0 HAIL 0 | |
| HEAVY SNOW 0 SNOW 0 LIGHT SNOW 0 SLEET 0 | |
| FOG 20 FOG W/VIS <= 1/4 MILE 4 HAZE 21 | |
| - INDICATES NEGATIVE NUMBERS. R INDICATES RECORD WAS SET OR TIED. MM INDICATES DATA IS MISSING. | |

Credits

T INDICATES TRACE AMOUNT.

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000 CXUS56 KLOX 011255 CF6LGB

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: LONG BEACH AIRPORT CA

MONTH: DECEMBER 2021 YEAR: LATITUDE: 33 49 N LONGITUDE: 118 9 W

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

LONG BEACH AIRPORT CA STATION:

MONTH: DECEMBER YEAR: 2021 LATITUDE: 33 49 N LONGITUDE: 118 9 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST

AVERAGE MONTHLY: 54.4 TOTAL FOR MONTH: 5.74 DPTR FM NORMAL: -2.3 DPTR FM NORMAL: 3.59 2 = FOG REDUCING VISIBILITY 69 ON 21,18 GRTST 24HR 2.42 ON 29-30 HIGHEST: TO 1/4 MILE OR LESS 3 = THUNDER 38 ON 15

SNOW, ICE PELLETS, HAIL 4 = ICE PELLETS

```
6 = FREEZING RAIN OR DRIZZLE
                            GRTST 24HR
                                             M ON
                                                             7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
                            GRTST DEPTH: M ON
                                                             8 = SMOKE OR HAZE
                             [WEATHER - DAYS WITH]
[NO. OF DAYS WITH]
                                                             9 = BLOWING SNOW
                                                             X = TORNADO
MAX 32 OR BELOW:
                            0.01 INCH OR MORE: 11
MAX 90 OR ABOVE:
MIN 32 OR BELOW:
                      0
                            0.10 INCH OR MORE:
                            0.50 INCH OR MORE:
                      0
MIN 0 OR BELOW:
                            1.00 INCH OR MORE:
                                                     2
                      0
[HDD (BASE 65) ]
TOTAL THIS MO.
                    323
                            CLEAR (SCALE 0-3) 12
PTCLDY (SCALE 4-7) 15
DPTR FM NORMAL
                     62
TOTAL FM JUL 1
                    423
                            CLOUDY (SCALE 8-10) 4
DPTR FM NORMAL
                     21
[CDD (BASE 65) ]
TOTAL THIS MO.
                      0
                            [PRESSURE DATA]
HIGHEST SLP 30.27 ON 15
LOWEST SLP 29.70 ON 31
DPTR FM NORMAL
                     -2
TOTAL FM JAN 1 1156
DPTR FM NORMAL
                    -10
[REMARKS]
#FINAL-12-21#
```

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Los Angeles, CA

Climatological Report (Monthly) Issued by NWS

| CLIMATE REPORT NATIONAL WEATHER 030 AM PST SAT | | | | | | | |
|--|------------------|-------------------|-----------------|--------------------------|-------------------|---------------|------|
| | JAN 01 2 | | ELES/OXNA | ARD | | | |
| | | | | | | | |
| THE LONG BEAG | CH AIRPO | RT CA CLIM | MATE SUMM | IARY FOR | THE MONTH | OF DECEMBER 2 | 2021 |
| CLIMATE NORMAL F | | | | | | | |
| VEATHER | OBSERVE VALUE | D DATE(S) | VALUE | DEPART FROM NORMAL | LAST YEA | AR`S | |
| EMPERATURE (F) | | • • • • • • • • • | | • • • • • • • • | • • • • • • • • • | • • • • | |
| HIGHEST | 69 | | | | | | |
| .OWEST | 38 | | | | | | |
| OWEST AVG. MAXIMUM AVG. MINIMUM MEAN | 62.3 | ,, | 66.7 46.6 | -4.4 | | | |
| AVG. MINIMUM | 46.5 | | 46.6 | -0.1 | | | |
| MEAN | 54.4 | | 56.7 | -2.3 | | | |
| DAYS MAX >= 90 DAYS MAX <= 32 | 0 | | | | | | |
| DAYS MIN <= 32 DAYS MIN <= 0 | | | | | | | |
| DAYS MIN <= 0 | 0 | | | | | | |
| PRECIPITATION (| INCHES) | | | | | | |
| OTALS | 5.74 | | 2.15 | 3.59 | | | |
| OTALS DAILY AVG. | 0.19 | | | | | | |
| DAYS >= .01 DAYS >= .10 | 11 6 | | | | | | |
| DAYS >= .10 DAYS >= .50 | 4 | | | | | | |
| DAYS >= 1.00 | 2 | | | | | | |
| GREATEST | | | | | | | |
| 24 HR. TOTAL STORM TOTAL | 2.42 | 12/29 TO 1 | 12/30 | | | | |
| | | | | | | | |
| DEGREE DAYS | | | | | | | |
| HEATING TOTAL | 323 | | | 62 | | | |
| HEATING TOTAL SINCE 7/1 COOLING TOTAL | 423 | | 402 | | | | |
| SINCE 1/1 | บ 1156 | | 2 1166 | -2 -10 | 4 MM | | |
| | | | | | | | |
| VIND (MPH) | | | | | | | |
| WEDACE LITHE COL | EED | 4 | 1.2 | | | | |
| HIGHEST WIND SPI HIGHEST GUST SPI | ED/DIRE | CTION 2 | 29/290 | DATE 1 | 2/14 | | |
| HIGHEST GUST SPI | EED/DIRE | CTION 3 | 38/270 | DATE 1 | 2/14 | | |
| SKY COVER | | | | | | | |
| OSSIBLE SUNSHI | NE (PERC | ENT) MM | | | | | |
| VERAGE SKY COVI | | | | | | | |
| IUMBER OF DAYS I IUMBER OF DAYS I | | 13 13 | | | | | |
| IUMBER OF DAYS (| | | | | | | |
| AVERAGE RH (PERG | CENT) | 73 | | | | | |
| WEATHER CONDITION | ONS. NUM | BER OF DAY | /S WITH | | | | |
| THUNDERSTORM | | | MIXED PRE | CIP | | 0 | |
| HEAVY RAIN | | | RAIN | DATN | | 7 | |
| .IGHT RAIN .T FREEZING RAIN | N | | REEZING HAIL | VATIN | | 0 | |
| HEAVY SNOW | • | | SNOW | | | 0 | |
| IGHT SNOW | | | SLEET | | | 0 | |
| FOG HAZE | | 28 F 20 | OG W/VIS | <= 1/4 | WILE | 3 | |
| IMAE | | 20 | | | | | |

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Dominguez Channel Estuary September 2021 Sediment Monitoring Report

Prepared for:

Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations 1801 East Sepulveda Boulevard Carson, CA 90745

Prepared by:

WGR Southwest, Inc. 11021 Winners Circle, Suite 101 Los Alamitos, CA 90720

Date:

January 21, 2022

TESORO REFINING & MARKETING COMPANY LLC LOS ANGELES REFINERY – CARSON OPERATIONS DOMINGUEZ CHANNEL ESTUARY SEDIMENT MONITORING REPORT 2021

TABLE OF CONTENTS

| 1.0 Introduction | Introduction1 | | | | | |
|------------------------|--|--|--|--|--|--|
| 2.0 Sediment Monit | Sediment Monitoring | | | | | |
| 3.0 Laboratory Resi | 2.0 Laboratory Results | | | | | |
| 4.0 Executive Sumr | mary | | | | | |
| | | | | | | |
| | <u>TABLES</u> | | | | | |
| Table 2.0: | Sediment Monitoring Field Observation and Analyses | | | | | |
| | <u>FIGURES</u> | | | | | |
| Figure 1: | Dominguez Channel Estuary Sediment Monitoring Locations | | | | | |
| | <u>ATTACHMENTS</u> | | | | | |
| Attachment 1: | Sediment Monitoring Field Logs | | | | | |
| Attachment 2, Table 1: | Sediment Monitoring Laboratory Result Summary Table | | | | | |
| Attachment 2, Table 2: | Sediment Monitoring Particle Grain Size Summary Table | | | | | |
| Attachment 3: | Sediment Monitoring Eurofins Calscience Analytical Laboratory Report | | | | | |
| Attachment 4: | Sediment Monitoring Aquatic Bioassay Analytical Laboratory Report | | | | | |
| Attachment 5: | Organic/Inorganic Analytical Validation Report | | | | | |
| Attachment 6: | Sediment Bioassay Data Validation Report | | | | | |

Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations Dominguez Channel Estuary September 2021 Sediment Monitoring Report Page 1 of 3

1.0 Introduction

On behalf of Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations (Tesoro LAR Carson), WGR Southwest, Inc. (WGR) conducted sediment monitoring of the Dominguez Channel Estuary in accordance with National Pollutant Discharge Elimination System Waste Discharge Requirements Permit Number CA0000680 Order Number R4-2015-0259 (WDR Permit). As required in Table E-7 of WDR Permit Attachment E, Monitoring and Reporting Program Number 5424 (MRP No. 5424), sediment monitoring is required at least once a year for all parameters and at least twice a year for Chronic Toxicity regardless of Tesoro LAR Carson discharge associated with the WDR Permit¹. Therefore, this report constitutes sediment monitoring for the first event of the 2021 reporting year, where the sediment samples collected were analyzed for all required parameters and all required monitoring (i.e. field observations and field analyses) was completed.

2.0 Sediment Monitoring

As shown in Figure 1, the WDR Permit designates seven sediment monitoring locations: SED-001, SED-002, SED-003, SED-004, SED-005, SED-006, and SED-007. WGR field personnel utilized an Ekman dredge and a Horiba U-50 Series Multi-Parameter Meter. According to historic Tesoro LAR Carson Sediment Monitoring Reports, samplers have been unable to collect sediment samples from SED-001 since 2003 and SED-002 since 2003.

Sediment monitoring was attempted at SED-001 and SED-002 sediment monitoring locations on September 8, 2021 and SED-003, SED-004, SED-005, SED-006 and SED-007 sediment monitoring locations on September 9, 2021. As detailed in the field logs (see Attachment 1), sediment samples and associated monitoring could only be feasibly completed at five of the seven sediment monitoring locations. Table 2.0 provides a summary of the field observations and analyses.

| Table 2.0: Sediment Monitoring Field Observation and Analyses | | | | | | | | | |
|---|-------------------------------------|--------------------|-------------|---------|----------------|-----------|------------|-----------------|------|
| | | Field Observations | | | Fi | eld A | nalys | ses | |
| Sample ID | Sediment Description | Biological Matter | Pollutants | pH (SU) | Salinity (PPT) | DO (mg/L) | SC (mS/Cm) | Turbidity (NTU) | Flow |
| SED-001 | Not Sampled | Not Sampled | Not Sampled | | | - | - | - | - |
| SED-002 | Not Sampled Not Sampled Not Sampled | | Not Sampled | | | | | | |

¹ Tesoro LAR Carson did not discharge under the WDR Permit during the 2021 calendar year.

Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations Dominguez Channel Estuary September 2021 Sediment Monitoring Report Page 2 of 3

| Table 2.0: Sediment Monitoring Field Observation and Analyses | | | | | | | | | | |
|---|--|--------------------|---------------|---------|----------------|-----------|----------------|-----------------|------|--|
| | Field Observations | | | | | | Field Analyses | | | |
| Sample ID | Sediment Description | Biological Matter | Pollutants | pH (SU) | Salinity (PPT) | DO (mg/L) | SC (mS/Cm) | Turbidity (NTU) | Flow | |
| SED-003 | Dark in color, vegetation and debris, biological odor | Vegetation present | Trash present | 7.82 | 24.76 | 9.11 | 37.6 | 20.7 | 1 | |
| SED-004 | Dark in color with vegetation and debris | Vegetation present | Trash present | 7.62 | 19.46 | 14.74 | 31.4 | 39.3 | 1 | |
| SED-005 | Dark in color with vegetation and debris, biological odor | Vegetation present | Trash present | 7.75 | 23.83 | 9.11 | 36.5 | 10.1 | 1 | |
| SED-006 | Dark in color | Vegetation present | Trash present | 6.65 | 21.59 | 14.39 | 34.9 | 14.8 | 1 | |
| SED-007 DO: Dissolved | Dark in color with some vegetation/debris, shells, salty, biological odor | Vegetation present | Trash present | 7.77 | 19.96 | 12.39 | 32.3 | 81.4 | 1 | |

DO: Dissolved Oxygen SC: Specific Conductance

3.0 Laboratory Results

Table 2.0 summarizes the field observations and analyses for the September 2021 sediment monitoring event. Laboratory results are summarized in Attachment 2. The Eurofins Calscience laboratory report is in Attachment 3 and the Aquatic Bioassay laboratory report is in Attachment 4. Data validation reports for these laboratory analytical reports are in Attachment 5 and Attachment 6.

4.0 Executive Summary

Receiving water sediment monitoring and analysis was conducted independent of any discharge from Tesoro LAR Carson. Pollutant concentrations demonstrated in this report are

Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations Dominguez Channel Estuary September 2021 Sediment Monitoring Report Page 3 of 3

not associated with any contribution from Tesoro LAR Carson to the receiving water. There are no pollutant concentration limits associated with this type of sampling as prescribed by the WDR Permit. Receiving water sediment monitoring and analysis was completed in compliance with the WDR Permit Attachment E, MRP No. 5424. As noted in the Organic/Inorganic Analytical Validation Report and the Sediment Bioassay Data Validation Report included in Attachment 5 and 6, respectively, analytical data obtained for this sampling event was deemed acceptable. No instances of non-compliance were identified.

FIGURE 1

DOMINGUEZ CHANNEL ESTUARY SEDIMENT MONITORING LOCATIONS

Figure 1: Dominguez Channel Estuary Sediment Monitoring Locations



ATTACHMENT 1

SEDIMENT MONITORING FIELD LOGS

| | WGR Southwest, Inc. Field Log | Page 1 of 3 Date: 9/8/202/ | |
|-------------|---|---|---|
| Project Nan | ne: LARC Sediment 2021 | Field Personnel: | we Montdorgo |
| 11. | nber: 021. ATC . 01 | Field Personnel: | 0 |
| Clear ! | tions/Project Discrepancies: Sunny Weather Light 82 F | + Breeze | |
| Time | | Field Notes | |
| 13:30 | Loaded truck at well meeting with Amber pr | e office. Co | / |
| 13:55 | Picked up water me | eter from F | ield Environ mental |
| 15:10 | equipment * Walked from 1 | # trush along of brielge. In r is murky, i us to collect Attempts coase IE corner of be | embankment. Dater level is 52ft unable to see sample Unable to al packed up |
| | | | |

| | WGR Southwest, Inc. | Page 2 of 3 |
|---------------------------|---|--|
| Duniant Mar | Field Log | Date: 9 9 202 |
| Project Na | | 9 |
| Project Nur Field Cond | nber: O2(. APC. 0(Field Peritions/Project Discrepancies: | sonner: |
| See | T9 1 | |
| Time | Field Note | es |
| 9:20 | Arrived at SED-0010, Weather Vegetation & Trash along embankenen corner of bridge to center. Water railing. Water IS murky, cannot 24.63°C, 6.65 pH, 34.9 mS/cm 20.6 g/L TDS, 21.59 ppt. De | Sun, Clear, Water in Channel 4. Walked 146ff from DW 1 PUEL IS 24ff from bridge See bottom, Sediment dark in a 14.8 NTU, 14.39 mg L DO, con & Packed. |
| 10:45 | Left SED-006 for SED-007 | |
| i0:55 | 5(off from SE corner of br | vegetation and shells deb |
| 11:45 | Left SED-007 for Home Depot | to get more Deron Water |
| 12:42 | Arrived at SED-DOH. Weather of from SE corner of bridge to from bridge railing. Trash & Wentenhamment Sediment churk in debnis, 25.78°C, 7.62 pH, 31/14.74 mg/L DD, 17.9 g/L TDS packed | center, 19ft to water egetation observed along color w/ some vegetation & |
| 13:47 | Left SED-004 for Lunch | |

| | WGR Southwest, Inc. Field Log | | Page 3 of 3 Date: 9/9/2/ |
|-------------|--|-------------------------------|---------------------------|
| Project Nan | ne: LARC Sedment 2021 | Field Personnel: | ave Mortelonen |
| Project Nur | | Field Personnel: | 9 |
| Field Condi | tions/Project Discrepancies: | | |
| See | Pg 1 | | |
| Time | | Field Notes | |
| 14:50 | Arrived at SED-005. Was from NE corner. Water 15 et trash along embankement bottom. Sealiment dark in Bio Decomp color. 24.87 10.1 NTU, 9.11 mg 1 DO Deron & Pached. | 23 ft from 6 - Water is mu | vojetation & debris |
| 16:00 | Left SED-005 for SE | ED-003 | |
| 16:10 | Arrived at SED-003. W Water level is 21ft from | 1 1 | to renter of bridges |
| 16:25 | Left SED-003 to return prior to close. | water moter | to Field Environmente |
| 17:15 | Arrived at SED-003. Wead Trush observed along embour with regetation & debris. 28.06°C, 7.82 pH, 37.60 22.5 g/L 705, 24.760 pp | nSlem 2017 | b Decomp. |
| 18:10 | Left SED-003 for WGE | 2 Office | |
| 18:46 | Arrived at WGR Office. | - End of Da | ay |
| | | | |
| | | | |

ATTACHMENT 2

SEDIMENT MONITORING LABORATORY RESULT SUMMARY TABLE AND PARTICLE GRAIN SIZE SUMMARY TABLE

| Sample ID | SED-001 | SED-002 | SED-003 | SED-004 | SED-005 | SED-006 | SED-007 |
|--|---------|---------|----------|-------------|---------------|----------|----------|
| Date Sampled | NS | NS | 9/9/2021 | 9/9/2021 | 9/9/2021 | 9/9/2021 | 9/9/2021 |
| Time Sampled | NS | NS | 17:55 | 13:30 | 15:45 | 10:25 | 11:30 |
| Total Metals | | | | | | | |
| Cadmium (EPA 6020) (mg/Kg) | NS | NS | ND<2.82 | ND<2.00 | ND<2.31 | ND<2.37 | ND<2.37 |
| Chromium (EPA 6020) (mg/Kg) | NS | NS | 54.1 | 37.9 | 40.3 | 44.3 | 42.6 |
| Copper (EPA 6020) (mg/Kg) | NS | NS | 134 | 93.5 | 95.9 | 111 | 92.7 |
| Lead (EPA 6020) (mg/Kg) | NS | NS | 76.8 | 57.6 | 57.8 | 65.3 | 55.4 |
| Nickel (EPA 6020) (mg/Kg) | NS | NS | 19 | 13.3 | 14 | 14 | 13.4 |
| Zinc (EPA 6020) (mg/Kg) | NS | NS | 565 | 353 | 386 | 386 | 328 |
| Mercury (EPA 7471A) (mg/Kg) | NS | NS | 0.222 | 0.246 | 0.334 | 0.3590 | 0.206 |
| Volatile/Semi-Volatile Organic Compounds | | | | | | | |
| Chlordane (EPA 8081A) (ug/Kg) | NS | NS | 15 | 81 | 8.9 | 27 | 12 |
| DDT (EPA 8081A) (ug/Kg, sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, | NS | NS | 53.4 | 33.2 | 28.5 | 51 | 20.7 |
| 4,4'-DDD, and 2,4'-DDD) | INO | INO | 33.4 | 33.2 | 26.5 | 31 | 20.7 |
| PCBs (EPA 8082) (ug/Kg, sum of Arochlor 1016, Arochlor 1221, Arochlor 1232, Arochlor 1242, Arochlor 1248, Arochlor 1254, and Arochlor 1260) | NS | NS | 360 | 199 | 240 | 198 | 300 |
| PAHs (EPA 8270C) (mg/Kg, sum of acenaphthene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, and pyrene) | NS | NS | 4.771 | 2.566 | 2.243 | 1.57 | 1.618 |
| Total Petroleum Hydrocarbons (EPA 8015B) (mg/Kg) | NS | NS | 800 | 1100 | 1500 | 2000 | 940 |
| Sediment Grain Size (ASTM D4464) | | | Refer | to Attachme | nt 2, Table 2 | | |
| Total Organic Carbon (EPA 9060A) (mg/Kg) | NS | NS | 49,900 | 38,800 | 44,200 | 41,500 | 33,700 |
| Tributyltin (Krone et al.) (ug/Kg) | NS | NS | 6.4 | ND<5.8 | ND<7.0 | 5.6 | ND<7.9 |
| Chronic Toxicity | | | | | | | |
| Eohaustorius estuarius (NOEC in mg/L) | NS | NS | 100% | 100% | 100% | 100% | 100% |
| Mytilus galloprovincialis (NOEC in mg/L) | NS | NS | 100% | 100% | 100% | 100% | 100% |

NS = Not Sampled

ND = Non-Detect

NOEC = No Observed Effect Concentration

| | | Particle Size Distribution (Weight Percent) | | | | | | | | |
|-----------|-------------------------|---|------------------------|----------------------------------|---|--------------------------------------|-----------------------------------|--------------------------------|--------------------------------------|-------------------|
| Sample ID | Mean Grain Size (mm) | Total Silt & Clay (0 - 0.0626 mm) | Clay (< 0.00391 mm) | Silt (0.00391 - 0.0625 mm) | Very Fine Sand (0.0625 - 0.125 mm) | Fine Sand (0.125 - 0.25 mm) | Medium Sand (0.25 - 0.5 mm) | Coarse Sand (0.5 - 1 mm) | Very Coarse Sand (1 - 2 mm) | Gravel (>2 mm) |
| SED-001 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| SED-002 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| SED-003 | 0.032 | 81.87 | 12.49 | 69.38 | 17.08 | 1.05 | ND<0.01 | ND<0.01 | ND<0.01 | ND<0.01 |
| SED-004 | 0.034 | 79.99 | 11.66 | 68.33 | 19.25 | 0.76 | ND<0.01 | ND<0.01 | ND<0.01 | ND<0.01 |
| SED-005 | 0.029 | 83.64 | 13.54 | 70.10 | 15.64 | 0.71 | ND<0.01 | ND<0.01 | ND<0.01 | ND<0.01 |
| SED-006 | 0.040 | 75.76 | 7.33 | 68.44 | 21.91 | 2.32 | ND<0.01 | ND<0.01 | ND<0.01 | ND<0.01 |
| SED-007 | 0.043 | 73.8 | 6.4 | 67.41 | 23.19 | 3.01 | ND<0.01 | ND<0.01 | ND<0.01 | ND<0.01 |

NS = Not Sampled

ND = Non-Detect

ATTACHMENT 3

SEDIMENT MONITORING EUROFINS CALSCIENCE ANALYTICAL LABORATORY REPORT

ANALYTICAL REPORT

Eurofins Calscience LLC 7440 Lincoln Way Garden Grove, CA 92841 Tel: (714)895-5494

Laboratory Job ID: 570-69878-1

Client Project/Site: Tesoro LA Refinery

For:

WGR Southwest Inc 11021 Winners Circle Suite 101 Los Alamitos, California 90720

Attn: Chelsea Dreyer

Spilatul

Authorized for release by: 9/27/2021 4:34:31 PM
Sheila Luu, Project Mgmt. Assistant Sheila.Luu@eurofinset.com

Designee for

Xuan Dang, Project Manager I (714)895-5494 Xuan.Dang@eurofinset.com

LINKS

Review your project results through

Total Access

Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: WGR Southwest Inc Project/Site: Tesoro LA Refinery Laboratory Job ID: 570-69878-1

Table of Contents

| Cover Page | 1 |
|------------------------|----|
| Table of Contents | 2 |
| Definitions/Glossary | 3 |
| Case Narrative | 5 |
| Detection Summary | 7 |
| Client Sample Results | 12 |
| Surrogate Summary | 33 |
| QC Sample Results | 35 |
| QC Association Summary | 46 |
| Lab Chronicle | 52 |
| Certification Summary | 57 |
| Method Summary | 58 |
| Sample Summary | 59 |
| Chain of Custody | 60 |
| Receipt Checklists | 61 |

A

5

7

9

10

12

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Definitions/Glossary

Client: WGR Southwest Inc

Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

Qualifiers

GC/MS Semi VOA

| Qualifier | Qualifier Description |
|-----------|---|
| □1 | MS and/or MSD recovery exceeds control limits |

F1 MS and/or MSD recovery exceeds control limits.

F2 MS/MSD RPD exceeds control limits

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

| Qualifier | Qualifier Description |
|-----------|---|
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not |
| | applicable. |
| F1 | MS and/or MSD recovery exceeds control limits. |
| F2 | MS/MSD RPD exceeds control limits |

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier Description

WS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

applicable.
F1 MS and/or MSD recovery exceeds control limits.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

EDL

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|--------------|--|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DFR | Duplicate Error Ratio (normalized absolute difference) |

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Padiochemistry)

MDA Minimum Detectable Activity (Radiochemistry)
MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

Eurofins Calscience LLC

Page 3 of 61 9/27/2021

6

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11

14

Definitions/Glossary

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Glossary (Continued)

Abbreviation These commonly used abbreviations may or may not be present in this report.

TNTC Too Numerous To Count

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Case Narrative

Client: WGR Southwest Inc Job ID: 570-69878-1
Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative 570-69878-1

Comments

No additional comments.

Receipt

The samples were received on 9/13/2021 1:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.9° C.

GC/MS Semi VOA

Method 8270C SIM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-178989 and 570-180052 and analytical batch 570-180477 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8270C SIM: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 570-178989 and 570-180052 and analytical batch 570-180477 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method Organotins SIM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-179948 and analytical batch 570-181787 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method 8015B: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with preparation batch 570-179051 and analytical batch 570-179136 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Diesel Range Organics [C10-C28] and C23-C40 in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 8081A: The following samples were diluted 5X due to the nature of the sample matrix: SED-003 (570-69878-1), SED-004 (570-69878-2), SED-005 (570-69878-3), SED-006 (570-69878-4) and SED-007 (570-69878-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-178989 and 570-181268 and analytical batch 570-181377 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 6020: Due to the high concentration of Zinc, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 570-178989 and 570-181268 and analytical batch 570-181377 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-181620 was flagged as being outside control limits due to a L.I.M.S. limitation: (570-70713-A-1) and (570-70713-A-1 DU). The mean grain size for the sample and

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Case Narrative

Client: WGR Southwest Inc Project/Site: Tesoro LA Refinery Job ID: 570-69878-1

Job ID: 570-69878-1 (Continued)

Laboratory: Eurofins Calscience LLC (Continued)

sample duplicate were within RPD acceptance criteria. Method D4464.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Detection Summary

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Client Sample ID: SED-003

Lab Sample ID: 570-69878-1

| Analyte | | Qualifier | RL | MDL | Unit | Dil Fac | D | | Prep Type |
|-------------------------------------|-----------|-----------|-------|--------|----------------|---------|-----------|----------------|----------------------|
| Acenaphthene | 0.046 | J | 0.057 | 0.0029 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Anthracene | 0.10 | | 0.057 | 0.0038 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 1,2-Benzanthracene | 0.28 | | 0.057 | 0.0063 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Benzo[a]pyrene | 0.45 | | 0.057 | 0.0077 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 3,4-Benzofluoranthene | 0.43 | | 0.057 | 0.0082 | mg/Kg | 2 | ☼ | 8270C SIM | Total/NA |
| Benzo[k]fluoranthene | 0.40 | | 0.057 | 0.0092 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 1,12-Benzoperylene | 0.35 | | 0.057 | 0.0083 | mg/Kg | 2 | ☼ | 8270C SIM | Total/NA |
| Chrysene | 0.55 | | 0.057 | 0.0044 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Dibenz(a,h)anthracene | 0.13 | | 0.057 | 0.0060 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Fluoranthene | 0.84 | | 0.057 | 0.0055 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Fluorene | 0.065 | | 0.057 | 0.0047 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Indeno[1,2,3-cd]pyrene | 0.21 | | 0.057 | 0.0071 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 1-Methylnaphthalene | 0.014 | J | 0.057 | 0.0041 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 2-Methylnaphthalene | 0.035 | J | 0.057 | 0.0041 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Naphthalene | 0.030 | J | 0.057 | 0.0044 | 0 0 | 2 | ₩ | 8270C SIM | Total/NA |
| Phenanthrene | 0.40 | | 0.057 | 0.0048 | | 2 | ∵ | 8270C SIM | Total/NA |
| Pyrene | 0.92 | | 0.057 | 0.0043 | 0 0 | 2 | | 8270C SIM | Total/NA |
| Tributyltin | 6.4 | J | 8.5 | | ug/Kg | 1 | | Organotins SIM | Total/NA |
| C9-C10 | 12 | | 14 | 11 | | | . ∵. | 8015B | Total/NA |
| C13-C14 | 15 | · | 14 | 11 | mg/Kg | 1 | ☼ | 8015B | Total/NA |
| C15-C16 | 110 | | 14 | 11 | | 1 | ☼ | 8015B | Total/NA |
| C17-C18 | 17 | | 14 | 11 | | | . ~. ∵ | 8015B | Total/NA |
| C19-C20 | 19 | | 14 | 11 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C21-C22 | 35 | | 14 | 11 | mg/Kg | 1 | ☼ | 8015B | Total/NA |
| C23-C24 | 61 | | 14 | 11 | mg/Kg | | . ∵. ‡ | 8015B | Total/NA |
| C25-C28 | 170 | | 14 | 11 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C29-C32 | 170 | | 14 | 11 | | 1 | | 8015B | Total/NA |
| C33-C36 | | | 14 | 11 | mg/Kg mg/Kg | | ₩ ₩ | 8015B | |
| C37-C40 | 130 50 | | | | | 1 | | | Total/NA |
| | 800 | | 14 | 11 | mg/Kg | 1 | ☆ | 8015B 8015B | Total/NA Total/NA |
| C6-C44 | | | 14 | 11 | | | .₩ | | |
| 2,4'-DDD | | J p | 5.0 | | ug/Kg | 5 | | 8081A | Total/NA |
| 2,4'-DDE | 11 | | 10 | 0.49 | 0 0 | 5 | | 8081A | Total/NA |
| 4,4'-DDD | | F1 | 5.0 | 2.5 | | | | 8081A | Total/NA |
| 4,4'-DDE | 21 | | 5.0 | 0.36 | 0 0 | 5 | | 8081A | Total/NA |
| Chlordane | 15 | J | 25 | 1.6 | 0 0 | 5 | | 8081A | Total/NA |
| Aroclor-1254 | 180 | ; | 29 | | ug/Kg | | | 8082 | Total/NA |
| Aroclor-1260 | 180 | F1 | 29 | | ug/Kg | 1 | | 8082 | Total/NA |
| Chromium | 54.1 | | 5.63 | | mg/Kg | 20 | ₩ | 6020 | Total/NA |
| Copper | 134 | | 2.82 | | mg/Kg | 20 | | 6020 | Total/NA |
| Lead | 76.8 | F1 | 2.82 | | mg/Kg | 20 | ₩ | | Total/NA |
| Nickel | 19.0 | | 2.82 | | mg/Kg | 20 | | 6020 | Total/NA |
| Zinc | 565 | | 14.1 | | mg/Kg | 20 | | 6020 | Total/NA |
| Mercury | 0.222 | J | 0.234 | 0.0380 | | 1 | ₩ | 7471A | Total/NA |
| Carbon, Total Organic | 49900 | | 1430 | | mg/Kg | 1 | ₩ | 9060A | Total/NA |
| Clay (less than 0.00391 mm) | 12.49 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Fine Sand (0.125 to 0.25mm) | 1.05 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Silt (0.00391 to 0.0625mm) | 69.38 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Total Silt and Clay (0 to 0.0626mm) | 81.87 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Very Fine Sand (0.0625 to 0.125 mm) | 17.08 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |

This Detection Summary does not include radiochemical test results.

Eurofins Calscience LLC

9/27/2021

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Client Sample ID: SED-004

Lab Sample ID: 570-69878-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--|--------|----------------|-------|--------------|-------|---------|-------------|-----------|----------------------|
| Acenaphthene | 0.0086 | J | 0.040 | 0.0020 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Anthracene | 0.053 | | 0.040 | 0.0026 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 1,2-Benzanthracene | 0.16 | | 0.040 | 0.0044 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Benzo[a]pyrene | 0.24 | | 0.040 | 0.0054 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 3,4-Benzofluoranthene | 0.23 | | 0.040 | 0.0057 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Benzo[k]fluoranthene | 0.19 | | 0.040 | 0.0064 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 1,12-Benzoperylene | 0.21 | | 0.040 | 0.0058 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Chrysene | 0.34 | | 0.040 | 0.0031 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Fluoranthene | 0.42 | | 0.040 | 0.0038 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |
| Fluorene | 0.014 | J | 0.040 | 0.0033 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |
| Indeno[1,2,3-cd]pyrene | 0.13 | | 0.040 | 0.0049 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |
| 1-Methylnaphthalene | 0.011 | J | 0.040 | 0.0028 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 2-Methylnaphthalene | 0.020 | J | 0.040 | 0.0028 | mg/Kg | 2 | ⊅ | 8270C SIM | Total/NA |
| Naphthalene | 0.021 | J | 0.040 | 0.0031 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Phenanthrene | 0.18 | | 0.040 | 0.0033 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |
| Pyrene | 0.57 | | 0.040 | 0.0030 | mg/Kg | 2 | | 8270C SIM | Total/NA |
| C13-C14 | 8.7 | J | 10 | 7.7 | | 1 | ₩ | 8015B | Total/NA |
| C15-C16 | 22 | | 10 | 7.7 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C17-C18 | 27 | | 10 | 7.7 | mg/Kg | 1 | | 8015B | Total/NA |
| C19-C20 | 120 | | 10 | 7.7 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C21-C22 | 96 | | 10 | 7.7 | | 1 | ₽ | 8015B | Total/NA |
| C23-C24 | 100 | | 10 | 7.7 | | 1 | ☆ | 8015B | Total/NA |
| C25-C28 | 240 | | 10 | 7.7 | 0 0 | 1 | ₽ | 8015B | Total/NA |
| C29-C32 | 250 | | 10 | 7.7 | 0 0 | 1 | ₩ | 8015B | Total/NA |
| C33-C36 | 180 | | 10 | 7.7 | mg/Kg | 1 | | 8015B | Total/NA |
| C37-C40 | 59 | | 10 | 7.7 | mg/Kg | 1 | | 8015B | Total/NA |
| C6-C44 | 1100 | | 10 | 7.7 | | | ₩ | 8015B | Total/NA |
| 2,4'-DDD | | | 5.0 | 0.32 | | 5 | | 8081A | Total/NA |
| 2,4'-DDE | 0.63 | | 10 | 0.48 | | 5 | | 8081A | Total/NA |
| 4,4'-DDD | 8.1 | • | 5.0 | 2.5 | | 5 | | 8081A | Total/NA |
| 4,4'-DDE | 22 | - - | 5.0 | 0.35 | ug/Kg | 5 | | 8081A | Total/NA |
| Chlordane | 81 | | 25 | 1.6 | ug/Kg | 5 | | 8081A | Total/NA |
| Aroclor-1254 | 89 | | 20 | 9.9 | | | ₩ | 8082 | Total/NA |
| Aroclor-1260 | 110 | | 20 | | ug/Kg | | . '''. ☆ | 8082 | Total/NA |
| Chromium | 37.9 | | 4.00 | | mg/Kg | 20 | ₩ | 6020 | Total/NA |
| Copper | 93.5 | | 2.00 | | mg/Kg | 20 | | 6020 | Total/NA |
| Lead | 57.6 | | 2.00 | | mg/Kg | 20 | . ~ . ☆ | 6020 | Total/NA |
| Nickel | 13.3 | | 2.00 | | mg/Kg | 20 | ~ | 6020 | Total/NA |
| Zinc | 353 | | 10.0 | | mg/Kg | 20 | | 6020 | Total/NA |
| Mercury | 0.246 | | 0.158 | 0.0256 | | | | 7471A | Total/NA |
| Carbon, Total Organic | 38800 | | 995 | | mg/Kg | | | 9060A | Total/NA |
| Carbon, Total Organic Clay (less than 0.00391 mm) | 11.66 | | 0.01 | 0.01 | | 1 | ٦-,٢ | D4464 | Total/NA |
| Fine Sand (0.125 to 0.25mm) | | | 0.01 | 0.01 | | | | D4464 | Total/NA |
| Silt (0.00391 to 0.0625mm) | 0.76 | | | | | 1 | | D4464 | |
| SIII (U.UUSB I IU U.UUZSIIIIII) | 68.33 | | 0.01 | 0.01 0.01 | | | | D4464 | Total/NA Total/NA |
| Total Silt and Clay (0 to 0.0626mm) | 79.99 | | 0.01 | () () 4 | | 1 | | | |

Client Sample ID: SED-005

Lab Sample ID: 570-69878-3

| Analyte | Result Qualifier | RL | MDL Unit | Dil Fac D Method | Prep Type |
|--------------|------------------|-------|--------------|------------------|-----------|
| Acenaphthene | 0.0081 J | 0.047 | 0.0024 mg/Kg | 2 🌣 8270C SIM | Total/NA |

This Detection Summary does not include radiochemical test results.

Eurofins Calscience LLC

Client: WGR Southwest Inc Project/Site: Tesoro LA Refinery Job ID: 570-69878-1

Client Sample ID: SED-005 (Continued)

Lab Sample ID: 570-69878-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|-------------------------------------|--------|-----------|-------|--------|-------|---------|-------|-----------|-----------|
| Anthracene | 0.058 | | 0.047 | 0.0032 | mg/Kg | 2 | ☼ | 8270C SIM | Total/NA |
| 1,2-Benzanthracene | 0.13 | | 0.047 | 0.0052 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Benzo[a]pyrene | 0.22 | | 0.047 | 0.0064 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |
| 3,4-Benzofluoranthene | 0.26 | | 0.047 | 0.0068 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Benzo[k]fluoranthene | 0.17 | | 0.047 | 0.0076 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 1,12-Benzoperylene | 0.16 | | 0.047 | 0.0068 | mg/Kg | 2 | ☼ | 8270C SIM | Total/NA |
| Chrysene | 0.31 | | 0.047 | 0.0036 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |
| Fluoranthene | 0.36 | | 0.047 | 0.0045 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |
| Fluorene | 0.017 | J | 0.047 | 0.0039 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Indeno[1,2,3-cd]pyrene | 0.090 | | 0.047 | 0.0059 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |
| 1-Methylnaphthalene | 0.012 | J | 0.047 | 0.0034 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 2-Methylnaphthalene | 0.025 | J | 0.047 | 0.0034 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Naphthalene | 0.026 | J | 0.047 | 0.0036 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Phenanthrene | 0.17 | | 0.047 | 0.0040 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Pyrene | 0.46 | | 0.047 | 0.0035 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| C15-C16 | 21 | | 12 | 9.2 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C17-C18 | 33 | | 12 | 9.2 | mg/Kg | 1 | ☼ | 8015B | Total/NA |
| C19-C20 | 50 | | 12 | 9.2 | mg/Kg | 1 | . ∵ | 8015B | Total/NA |
| C21-C22 | 86 | | 12 | 9.2 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C23-C24 | 140 | | 12 | 9.2 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C25-C28 | 400 | | 12 | 9.2 | mg/Kg | 1 | ₩. | 8015B | Total/NA |
| C29-C32 | 420 | | 12 | 9.2 | mg/Kg | 1 | ₽ | 8015B | Total/NA |
| C33-C36 | 250 | | 12 | 9.2 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C37-C40 | 98 | | 12 | 9.2 | mg/Kg | 1 | ₩. | 8015B | Total/NA |
| C41-C44 | 18 | | 12 | 9.2 | mg/Kg | 1 | ₽ | 8015B | Total/NA |
| C6-C44 | 1500 | | 12 | 9.2 | mg/Kg | 1 | ☼ | 8015B | Total/NA |
| 2,4'-DDD | 1.3 | Jр | 5.0 | 0.32 | ug/Kg | 5 | | 8081A | Total/NA |
| 2,4'-DDE | 2.5 | Jp | 10 | 0.48 | ug/Kg | 5 | | 8081A | Total/NA |
| 4,4'-DDD | 6.7 | р | 5.0 | 2.5 | ug/Kg | 5 | | 8081A | Total/NA |
| 4,4'-DDE | 18 | | 5.0 | 0.35 | ug/Kg | 5 | | 8081A | Total/NA |
| Chlordane | 8.9 | Jр | 25 | 1.6 | ug/Kg | 5 | | 8081A | Total/NA |
| Aroclor-1254 | 130 | | 24 | 12 | ug/Kg | 1 | ₽ | 8082 | Total/NA |
| Aroclor-1260 | 110 | | 24 | 12 | ug/Kg | 1 | ∵ | 8082 | Total/NA |
| Chromium | 40.3 | | 4.63 | 0.694 | mg/Kg | 20 | ☼ | 6020 | Total/NA |
| Copper | 95.9 | | 2.31 | 0.623 | mg/Kg | 20 | ₽ | 6020 | Total/NA |
| Lead | 57.8 | | 2.31 | 0.498 | mg/Kg | 20 | | 6020 | Total/NA |
| Nickel | 14.0 | | 2.31 | | mg/Kg | 20 | ₽ | 6020 | Total/NA |
| Zinc | 386 | | 11.6 | | mg/Kg | 20 | | 6020 | Total/NA |
| Mercury | 0.334 | | 0.208 | 0.0337 | | 1 | | 7471A | Total/NA |
| Carbon, Total Organic | 44200 | | 1190 | | mg/Kg | | | 9060A | Total/NA |
| Clay (less than 0.00391 mm) | 13.54 | | 0.01 | 0.01 | | 1 | | D4464 | Total/NA |
| Fine Sand (0.125 to 0.25mm) | 0.71 | | 0.01 | 0.01 | | 1 | | D4464 | Total/NA |
| Silt (0.00391 to 0.0625mm) | 70.10 | | 0.01 | 0.01 | | 1 | | D4464 | Total/NA |
| Total Silt and Clay (0 to 0.0626mm) | 83.64 | | 0.01 | 0.01 | | 1 | | D4464 | Total/NA |
| Very Fine Sand (0.0625 to 0.125 mm) | 15.64 | | 0.01 | 0.01 | | | | D4464 | Total/NA |

Client Sample ID: SED-006

Lab Sample ID: 570-69878-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------------|--------|-----------|-------|--------|-------|---------|---|-----------|-----------|
| Anthracene | 0.031 | J | 0.047 | 0.0032 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 1,2-Benzanthracene | 0.087 | | 0.047 | 0.0052 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |

This Detection Summary does not include radiochemical test results.

Page 9 of 61

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Client Sample ID: SED-006 (Continued)

Lab Sample ID: 570-69878-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|-------------------------------------|--------|-----------|-------|--------|-------|---------|---|----------------|-----------|
| Benzo[a]pyrene | 0.13 | | 0.047 | 0.0064 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 3,4-Benzofluoranthene | 0.16 | | 0.047 | 0.0068 | mg/Kg | 2 | ☼ | 8270C SIM | Total/NA |
| Benzo[k]fluoranthene | 0.098 | | 0.047 | 0.0076 | mg/Kg | 2 | ₽ | 8270C SIM | Total/NA |
| 1,12-Benzoperylene | 0.11 | | 0.047 | 0.0069 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Chrysene | 0.21 | | 0.047 | 0.0037 | mg/Kg | 2 | ⊅ | 8270C SIM | Total/NA |
| Fluoranthene | 0.29 | | 0.047 | 0.0046 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Fluorene | 0.015 | J | 0.047 | 0.0039 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Indeno[1,2,3-cd]pyrene | 0.069 | | 0.047 | 0.0059 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 1-Methylnaphthalene | 0.0079 | J | 0.047 | 0.0034 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| 2-Methylnaphthalene | 0.015 | J | 0.047 | 0.0034 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Naphthalene | 0.018 | J | 0.047 | 0.0037 | mg/Kg | 2 | ⊅ | 8270C SIM | Total/NA |
| Phenanthrene | 0.098 | | 0.047 | 0.0040 | mg/Kg | 2 | ₩ | 8270C SIM | Total/NA |
| Pyrene | 0.37 | | 0.047 | 0.0035 | mg/Kg | 2 | ☼ | 8270C SIM | Total/NA |
| Tributyltin | 5.6 | J | 7.0 | 3.5 | ug/Kg | 1 | ₩ | Organotins SIM | Total/NA |
| C13-C14 | 13 | | 12 | 9.1 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C15-C16 | 22 | | 12 | 9.1 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C17-C18 | 22 | | 12 | 9.1 | mg/Kg | 1 | ☼ | 8015B | Total/NA |
| C19-C20 | 33 | | 12 | 9.1 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C21-C22 | 79 | | 12 | 9.1 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C23-C24 | 180 | | 12 | 9.1 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C25-C28 | 580 | | 12 | 9.1 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C29-C32 | 640 | | 12 | 9.1 | mg/Kg | 1 | ☼ | 8015B | Total/NA |
| C33-C36 | 350 | | 12 | 9.1 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C37-C40 | 140 | | 12 | 9.1 | mg/Kg | 1 | ₽ | 8015B | Total/NA |
| C41-C44 | 28 | | 12 | 9.1 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C6-C44 | 2000 | | 12 | 9.1 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| 2,4'-DDD | 5.2 | p | 5.0 | 0.32 | ug/Kg | 5 | | 8081A | Total/NA |
| 2,4'-DDE | 5.8 | Jр | 9.9 | 0.48 | ug/Kg | 5 | | 8081A | Total/NA |
| 4,4'-DDD | 23 | | 5.0 | 2.5 | ug/Kg | 5 | | 8081A | Total/NA |
| 4,4'-DDE | 17 | | 5.0 | 0.35 | ug/Kg | 5 | | 8081A | Total/NA |
| Chlordane | 27 | | 25 | 1.6 | ug/Kg | 5 | | 8081A | Total/NA |
| Aroclor-1254 | 100 | | 24 | 12 | ug/Kg | 1 | ☼ | 8082 | Total/NA |
| Aroclor-1260 | 98 | | 24 | 12 | ug/Kg | 1 | ☼ | 8082 | Total/NA |
| Chromium | 44.3 | | 4.75 | 0.712 | mg/Kg | 20 | ₩ | 6020 | Total/NA |
| Copper | 111 | | 2.37 | 0.639 | mg/Kg | 20 | ⊅ | 6020 | Total/NA |
| Lead | 65.3 | | 2.37 | 0.510 | mg/Kg | 20 | ₩ | 6020 | Total/NA |
| Nickel | 14.0 | | 2.37 | 0.641 | mg/Kg | 20 | ₽ | 6020 | Total/NA |
| Zinc | 386 | | 11.9 | 11.0 | mg/Kg | 20 | ☼ | 6020 | Total/NA |
| Mercury | 0.359 | | 0.195 | 0.0315 | mg/Kg | 1 | ₽ | 7471A | Total/NA |
| Carbon, Total Organic | 41500 | | 1190 | 412 | mg/Kg | 1 | ₽ | 9060A | Total/NA |
| Clay (less than 0.00391 mm) | 7.33 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Fine Sand (0.125 to 0.25mm) | 2.32 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Silt (0.00391 to 0.0625mm) | 68.44 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Total Silt and Clay (0 to 0.0626mm) | 75.76 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Very Fine Sand (0.0625 to 0.125 mm) | 21.91 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |

Client Sample ID: SED-007

Lab Sample ID: 570-69878-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------------|--------|-----------|------|--------|-------|---------|---|-----------|-----------|
| Anthracene | 0.033 | J | 0.13 | 0.0089 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| 1,2-Benzanthracene | 0.10 | J | 0.13 | 0.015 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Client Sample ID: SED-007 (Continued)

Lab Sample ID: 570-69878-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|-------------------------------------|--------|-----------|-------|--------|-------|---------|---------|-----------|-----------|
| Benzo[a]pyrene | 0.13 | | 0.13 | 0.018 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| 3,4-Benzofluoranthene | 0.16 | | 0.13 | 0.019 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| Benzo[k]fluoranthene | 0.12 | J | 0.13 | 0.022 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| 1,12-Benzoperylene | 0.10 | J | 0.13 | 0.019 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| Chrysene | 0.22 | | 0.13 | 0.010 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| Fluoranthene | 0.29 | | 0.13 | 0.013 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| Fluorene | 0.017 | J | 0.13 | 0.011 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| Indeno[1,2,3-cd]pyrene | 0.068 | J | 0.13 | 0.017 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| 2-Methylnaphthalene | 0.027 | J | 0.13 | 0.0096 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| Naphthalene | 0.037 | J | 0.13 | 0.010 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| Phenanthrene | 0.11 | J | 0.13 | 0.011 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| Pyrene | 0.38 | | 0.13 | 0.010 | mg/Kg | 5 | ₩ | 8270C SIM | Total/NA |
| C17-C18 | 19 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C19-C20 | 33 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C21-C22 | 54 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C23-C24 | 92 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C25-C28 | 260 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C29-C32 | 270 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C33-C36 | 160 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C37-C40 | 59 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C41-C44 | 14 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| C6-C44 | 940 | | 14 | 10 | mg/Kg | 1 | ₩ | 8015B | Total/NA |
| 2,4'-DDD | 1.0 | Jp | 5.0 | 0.32 | ug/Kg | 5 | | 8081A | Total/NA |
| 2,4'-DDE | 1.6 | Jр | 9.9 | 0.48 | ug/Kg | 5 | | 8081A | Total/NA |
| 4,4'-DDD | 10 | р | 5.0 | | ug/Kg | 5 | | 8081A | Total/NA |
| 4,4'-DDE | 8.1 | p | 5.0 | 0.35 | ug/Kg | 5 | | 8081A | Total/NA |
| Chlordane | 12 | Jр | 25 | 1.6 | ug/Kg | 5 | | 8081A | Total/NA |
| Aroclor-1254 | 110 | | 27 | 13 | ug/Kg | 1 | ₩ | 8082 | Total/NA |
| Aroclor-1260 | 190 | | 27 | | ug/Kg | 1 | ∵ | 8082 | Total/NA |
| Chromium | 42.6 | | 5.45 | 0.818 | mg/Kg | 20 | ₩ | 6020 | Total/NA |
| Copper | 92.7 | | 2.73 | 0.733 | mg/Kg | 20 | ₩ | 6020 | Total/NA |
| Lead | 55.4 | | 2.73 | 0.586 | mg/Kg | 20 | ;;; | 6020 | Total/NA |
| Nickel | 13.4 | | 2.73 | | mg/Kg | 20 | ₩ | 6020 | Total/NA |
| Zinc | 328 | | 13.6 | 12.6 | mg/Kg | 20 | ₩ | 6020 | Total/NA |
| Mercury | 0.206 | J | 0.224 | 0.0362 | | 1 | | 7471A | Total/NA |
| Carbon, Total Organic | 33700 | | 1340 | | mg/Kg | 1 | ₩ | 9060A | Total/NA |
| Clay (less than 0.00391 mm) | 6.40 | | 0.01 | 0.01 | 0 0 | 1 | | D4464 | Total/NA |
| Fine Sand (0.125 to 0.25mm) | 3.01 | | 0.01 | 0.01 | | 1 | | D4464 | Total/NA |
| Silt (0.00391 to 0.0625mm) | 67.41 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Total Silt and Clay (0 to 0.0626mm) | 73.80 | | 0.01 | 0.01 | % | 1 | | D4464 | Total/NA |
| Very Fine Sand (0.0625 to 0.125 mm) | 23.19 | | 0.01 | 0.01 | | | | D4464 | Total/NA |

This Detection Summary does not include radiochemical test results.

Client: WGR Southwest Inc
Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

Method: 8270C SIM - PAHs (GC/MS SIM)

| Client Sample ID: SED-003 Date Collected: 09/09/21 17:55 Date Received: 09/13/21 13:50 | | | | | | | Lab San | nple ID: 570-6 Matrix | 9878-1 :: Solid |
|--|-----------|-----------|----------|--------|-------|-----------|----------------|--------------------------|--------------------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Acenaphthene | 0.046 | J | 0.057 | 0.0029 | mg/Kg | — <u></u> | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Acenaphthylene | ND | | 0.057 | 0.048 | mg/Kg | ₩ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Anthracene | 0.10 | | 0.057 | 0.0038 | mg/Kg | ₩ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| 1,2-Benzanthracene | 0.28 | | 0.057 | 0.0063 | mg/Kg | ☼ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Benzo[a]pyrene | 0.45 | | 0.057 | 0.0077 | mg/Kg | ₽ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| 3,4-Benzofluoranthene | 0.43 | | 0.057 | 0.0082 | mg/Kg | ₩ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Benzo[k]fluoranthene | 0.40 | | 0.057 | 0.0092 | mg/Kg | ₽ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| 1,12-Benzoperylene | 0.35 | | 0.057 | 0.0083 | mg/Kg | ⇔ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Chrysene | 0.55 | | 0.057 | 0.0044 | mg/Kg | ₩ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Dibenz(a,h)anthracene | 0.13 | | 0.057 | 0.0060 | mg/Kg | ₽ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Fluoranthene | 0.84 | | 0.057 | 0.0055 | mg/Kg | ₩ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Fluorene | 0.065 | | 0.057 | 0.0047 | mg/Kg | ₽ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Indeno[1,2,3-cd]pyrene | 0.21 | | 0.057 | 0.0071 | mg/Kg | ₽ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| 1-Methylnaphthalene | 0.014 | J | 0.057 | 0.0041 | mg/Kg | ₩ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| 2-Methylnaphthalene | 0.035 | J | 0.057 | 0.0041 | mg/Kg | ₩ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Naphthalene | 0.030 | J | 0.057 | 0.0044 | mg/Kg | ₩ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Phenanthrene | 0.40 | | 0.057 | 0.0048 | mg/Kg | ₩ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Pyrene | 0.92 | | 0.057 | 0.0043 | mg/Kg | ☼ | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl (Surr) | 70 | | 22 - 130 | | | | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| Nitrobenzene-d5 (Surr) | 44 | | 20 - 145 | | | | 09/17/21 18:49 | 09/20/21 21:52 | 2 |
| p-Terphenyl-d14 (Surr) | 90 | | 33 - 147 | | | | 09/17/21 18:49 | 09/20/21 21:52 | 2 |

Client Sample ID: SED-004 Lab Sample ID: 570-69878-2 Date Collected: 09/09/21 13:30 Matrix: Solid

| Date Received: 09/13/21 1 | 3:50 | | | | | | | |
|---------------------------|---------------------|----------|--------|-------|---------|----------------|----------------|---------|
| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Acenaphthene | 0.0086 J | 0.040 | 0.0020 | mg/Kg | <u></u> | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Acenaphthylene | ND | 0.040 | 0.034 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Anthracene | 0.053 | 0.040 | 0.0026 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| 1,2-Benzanthracene | 0.16 | 0.040 | 0.0044 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Benzo[a]pyrene | 0.24 | 0.040 | 0.0054 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| 3,4-Benzofluoranthene | 0.23 | 0.040 | 0.0057 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Benzo[k]fluoranthene | 0.19 | 0.040 | 0.0064 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| 1,12-Benzoperylene | 0.21 | 0.040 | 0.0058 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Chrysene | 0.34 | 0.040 | 0.0031 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Dibenz(a,h)anthracene | ND | 0.040 | 0.0042 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Fluoranthene | 0.42 | 0.040 | 0.0038 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Fluorene | 0.014 J | 0.040 | 0.0033 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Indeno[1,2,3-cd]pyrene | 0.13 | 0.040 | 0.0049 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| 1-Methylnaphthalene | 0.011 J | 0.040 | 0.0028 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| 2-Methylnaphthalene | 0.020 J | 0.040 | 0.0028 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Naphthalene | 0.021 J | 0.040 | 0.0031 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Phenanthrene | 0.18 | 0.040 | 0.0033 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Pyrene | 0.57 | 0.040 | 0.0030 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Surrogate | %Recovery Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl (Surr) | 61 | 22 - 130 | | | | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| Nitrobenzene-d5 (Surr) | 36 | 20 - 145 | | | | 09/17/21 18:49 | 09/23/21 03:11 | 2 |
| | | | | | | | | |

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Page 12 of 61

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14

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Method: 8270C SIM - PAHs (GC/MS SIM) (Continued)

Client Sample ID: SED-004 Lab Sample ID: 570-69878-2 Date Collected: 09/09/21 13:30 **Matrix: Solid**

Date Received: 09/13/21 13:50

%Recovery Qualifier Limits Prepared Analyzed Dil Fac p-Terphenyl-d14 (Surr) 81 33 - 147 09/17/21 18:49 09/23/21 03:11

Client Sample ID: SED-005 Lab Sample ID: 570-69878-3 Date Collected: 09/09/21 15:45 **Matrix: Solid**

Date Received: 09/13/21 13:50

| Analyte | Result Qu | ıalifier RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|-------------|--------|-------|---------|----------------|----------------|---------|
| Acenaphthene | 0.0081 J | 0.047 | 0.0024 | mg/Kg | <u></u> | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Acenaphthylene | ND | 0.047 | 0.040 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Anthracene | 0.058 | 0.047 | 0.0032 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| 1,2-Benzanthracene | 0.13 | 0.047 | 0.0052 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Benzo[a]pyrene | 0.22 | 0.047 | 0.0064 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| 3,4-Benzofluoranthene | 0.26 | 0.047 | 0.0068 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Benzo[k]fluoranthene | 0.17 | 0.047 | 0.0076 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| 1,12-Benzoperylene | 0.16 | 0.047 | 0.0068 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Chrysene | 0.31 | 0.047 | 0.0036 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Dibenz(a,h)anthracene | ND | 0.047 | 0.0050 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Fluoranthene | 0.36 | 0.047 | 0.0045 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Fluorene | 0.017 J | 0.047 | 0.0039 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Indeno[1,2,3-cd]pyrene | 0.090 | 0.047 | 0.0059 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| 1-Methylnaphthalene | 0.012 J | 0.047 | 0.0034 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| 2-Methylnaphthalene | 0.025 J | 0.047 | 0.0034 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Naphthalene | 0.026 J | 0.047 | 0.0036 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Phenanthrene | 0.17 | 0.047 | 0.0040 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Pyrene | 0.46 | 0.047 | 0.0035 | mg/Kg | ☆ | 09/17/21 18:49 | 09/23/21 03:30 | 2 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|-------------------------|-----------|-----------|----------|----------------|----------------|---------|
| 2-Fluorobiphenyl (Surr) | 72 | | 22 - 130 | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| Nitrobenzene-d5 (Surr) | 45 | | 20 - 145 | 09/17/21 18:49 | 09/23/21 03:30 | 2 |
| p-Terphenyl-d14 (Surr) | 91 | | 33 - 147 | 09/17/21 18:49 | 09/23/21 03:30 | 2 |

Client Sample ID: SED-006 Lab Sample ID: 570-69878-4 Date Collected: 09/09/21 10:25 **Matrix: Solid**

Date Received: 09/13/21 13:50

| Date Received: 09/13/21 13: | :50 | | | | | | | |
|-----------------------------|--------------|---------|--------|-------|---------|----------------|----------------|---------|
| Analyte | Result Quali | fier RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Acenaphthene | ND ND | 0.047 | 0.0024 | mg/Kg | <u></u> | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Acenaphthylene | ND | 0.047 | 0.040 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Anthracene | 0.031 J | 0.047 | 0.0032 | mg/Kg | ☆ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| 1,2-Benzanthracene | 0.087 | 0.047 | 0.0052 | mg/Kg | ₽ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Benzo[a]pyrene | 0.13 | 0.047 | 0.0064 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| 3,4-Benzofluoranthene | 0.16 | 0.047 | 0.0068 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Benzo[k]fluoranthene | 0.098 | 0.047 | 0.0076 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| 1,12-Benzoperylene | 0.11 | 0.047 | 0.0069 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Chrysene | 0.21 | 0.047 | 0.0037 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Dibenz(a,h)anthracene | ND | 0.047 | 0.0050 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Fluoranthene | 0.29 | 0.047 | 0.0046 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Fluorene | 0.015 J | 0.047 | 0.0039 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Indeno[1,2,3-cd]pyrene | 0.069 | 0.047 | 0.0059 | mg/Kg | ₽ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| 1-Methylnaphthalene | 0.0079 J | 0.047 | 0.0034 | mg/Kg | ☆ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| 2-Methylnaphthalene | 0.015 J | 0.047 | 0.0034 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Naphthalene | 0.018 J | 0.047 | 0.0037 | mg/Kg | ≎ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| | | | | | | | | |

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: 8270C SIM - PAHs (GC/MS SIM) (Continued)

Nitrobenzene-d5 (Surr)

p-Terphenyl-d14 (Surr)

| Client Sample ID: SED-006 | | | | | | | Lab San | nple ID: 570-6 | 9878-4 |
|-------------------------------|-----------|-----------|----------|--------|-------|--------------|----------------|----------------|---------|
| Date Collected: 09/09/21 10:2 | 5 | | | | | | | Matrix | : Solid |
| Date Received: 09/13/21 13:5 | 0 | | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Phenanthrene | 0.098 | | 0.047 | 0.0040 | mg/Kg | - | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Pyrene | 0.37 | | 0.047 | 0.0035 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl (Surr) | 56 | | 22 - 130 | | | | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| Nitrobenzene-d5 (Surr) | 34 | | 20 - 145 | | | | 09/17/21 18:49 | 09/23/21 03:50 | 2 |
| p-Terphenyl-d14 (Surr) | 80 | | 33 - 147 | | | | 09/17/21 18:49 | 09/23/21 03:50 | 2 |

| Client Sample ID: SED-007 | | | | | | | Lab San | nple ID: 570-6 | |
|---|-----------|-----------|----------|--------|-------|---------|----------------|----------------|----------|
| Date Collected: 09/09/21 11:30 Date Received: 09/13/21 13:50 | | | | | | | | Matrix | c: Solid |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Acenaphthene | ND | | 0.13 | 0.0067 | mg/Kg | <u></u> | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Acenaphthylene | ND | | 0.13 | 0.11 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Anthracene | 0.033 | J | 0.13 | 0.0089 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| 1,2-Benzanthracene | 0.10 | J | 0.13 | 0.015 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Benzo[a]pyrene | 0.13 | | 0.13 | 0.018 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| 3,4-Benzofluoranthene | 0.16 | | 0.13 | 0.019 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Benzo[k]fluoranthene | 0.12 | J | 0.13 | 0.022 | mg/Kg | ⊅ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| 1,12-Benzoperylene | 0.10 | J | 0.13 | 0.019 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Chrysene | 0.22 | | 0.13 | 0.010 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Dibenz(a,h)anthracene | ND | | 0.13 | 0.014 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Fluoranthene | 0.29 | | 0.13 | 0.013 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Fluorene | 0.017 | J | 0.13 | 0.011 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Indeno[1,2,3-cd]pyrene | 0.068 | J | 0.13 | 0.017 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| 1-Methylnaphthalene | ND | | 0.13 | 0.0096 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| 2-Methylnaphthalene | 0.027 | J | 0.13 | 0.0096 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Naphthalene | 0.037 | J | 0.13 | 0.010 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Phenanthrene | 0.11 | J | 0.13 | 0.011 | mg/Kg | ☼ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Pyrene | 0.38 | | 0.13 | 0.010 | mg/Kg | ₩ | 09/17/21 18:49 | 09/23/21 04:10 | 5 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl (Surr) | 71 | | 22 - 130 | | | | 09/17/21 18:49 | 09/23/21 04:10 | 5 |

20 - 145

33 - 147

54

103

09/17/21 18:49 09/23/21 04:10

09/17/21 18:49 09/23/21 04:10

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Tributyltin

Surrogate

Tripentyltin

| Client Sample ID: SED-003 | | | | | | | Lab San | nple ID: 570-6 | |
|--------------------------------|-----------|-----------|----------|-----|--------|----------------|-------------------------|-------------------------|----------|
| Date Collected: 09/09/21 17:55 | | | | | | | | Matrix | c: Solid |
| Date Received: 09/13/21 13:50 | Decult | Ouglifier | DI | MDI | l lmi4 | _ | Dramarad | Analysed | Dil Faa |
| Analyte | | Qualifier | RL 8.5 | | Unit | — <u>D</u> | Prepared 09/17/21 12:08 | Analyzed 09/24/21 22:36 | Dil Fac |
| Tributyltin | 6.4 | J | 6.5 | 4.2 | ug/Kg | 1 ; | 09/1//21 12:06 | 09/24/21 22:30 | |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| Tripentyltin | 80 | | 10 - 120 | | | | 09/17/21 12:08 | 09/24/21 22:36 | 1 |
| Client Sample ID: SED-004 | | | | | | | Lab San | nple ID: 570-6 | 9878-2 |
| Date Collected: 09/09/21 13:30 | | | | | | | | • | c: Solid |
| Date Received: 09/13/21 13:50 | | | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Tributyltin | ND | | 5.8 | 2.9 | ug/Kg | * | 09/17/21 12:08 | 09/24/21 22:54 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| Tripentyltin | 104 | | 10 - 120 | | | | 09/17/21 12:08 | 09/24/21 22:54 | 1 |
| Client Sample ID: SED-005 | | | | | | | l ah San | nple ID: 570-6 | 9878-3 |
| Date Collected: 09/09/21 15:45 | | | | | | | Lab Gan | • | c: Solid |
| Date Received: 09/13/21 13:50 | | | | | | | | Macin | Cond |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Tributyltin | ND | <u> </u> | 7.0 | 3.5 | ug/Kg | <u></u> | 09/17/21 12:08 | 09/24/21 23:11 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| Tripentyltin | 91 | Quantier | 10 - 120 | | | | | 09/24/21 23:11 | 1 |
| Client Sample ID: SED-006 | | | | | | | l ah Can | nple ID: 570-6 | 0070 4 |
| Date Collected: 09/09/21 10:25 | | | | | | | Lab Sali | - | c: Solid |
| Date Received: 09/13/21 13:50 | | | | | | | | Watiix | t. John |
| Analyte | Result | Qualifier | RL | MDI | Unit | D | Prepared | Analyzed | Dil Fac |
| Tributyltin | 5.6 | | 7.0 | | ug/Kg | — - | | 09/24/21 23:28 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| Tripentyltin | 90 | Qualifier | 10 - 120 | | | | | 09/24/21 23:28 | DII Fac |
| · | 00 | | 70 - 720 | | | | 00/11/21 12:00 | 00/2 1/21 20:20 | , |
| Client Sample ID: SED-007 | | | | | | | Lab San | nple ID: 570-6 | 9878-5 |
| Date Collected: 09/09/21 11:30 | | | | | | | | Matrix | c: Solid |
| Date Received: 09/13/21 13:50 | | | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |

09/17/21 12:08 09/24/21 23:46

Analyzed

Dil Fac

Prepared

7.9

Limits

10 - 120

3.9 ug/Kg

ND

%Recovery Qualifier

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Client Sample ID: SED-003

C29-C32

C33-C36

C37-C40

C41-C44

C6-C44

n-Octacosane (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

190

130

50

ND

800

127

| Date Collected: 09/09 | /21 17:55 | | | | | | | Matrix | c: Solid |
|-----------------------|-----------|-----------|----|-----|-------|---|----------------|----------------|----------|
| Date Received: 09/13/ | /21 13:50 | | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| C6 as C6 | ND | | 14 | 11 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C7 as C7 | ND | | 14 | 11 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C8 as C8 | ND | | 14 | 11 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C9-C10 | 12 | J | 14 | 11 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C11-C12 | ND | | 14 | 11 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C13-C14 | 15 | | 14 | 11 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C15-C16 | 110 | | 14 | 11 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C17-C18 | 17 | | 14 | 11 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C19-C20 | 19 | | 14 | 11 | mg/Kg | ≎ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C21-C22 | 35 | | 14 | 11 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C23-C24 | 61 | | 14 | 11 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |
| C25-C28 | 170 | | 14 | 11 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 08:37 | 1 |

| Surrogate | %Recovery Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---------------------|---------------------|----------|----------------|----------------|---------|
| n-Octacosane (Surr) | 122 | 60 - 138 | 09/14/21 12:44 | 09/16/21 08:37 | 1 |

14

14

14

14

14

11 mg/Kg

11 mg/Kg

11 mg/Kg

11 mg/Kg

11 mg/Kg

Client Sample ID: SED-004 Lab Sample ID: 570-69878-2 Date Collected: 09/09/21 13:30 **Matrix: Solid**

| Date Received: 09/1 | 3/21 13:50 | | | | | | | | |
|---------------------|--------------------|-----------|--------|-----|-------|--------------|----------------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| C6 as C6 | ND | | 10 | 7.7 | mg/Kg | - | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C7 as C7 | ND | | 10 | 7.7 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C8 as C8 | ND | | 10 | 7.7 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C9-C10 | ND | | 10 | 7.7 | mg/Kg | ₽ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C11-C12 | ND | | 10 | 7.7 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C13-C14 | 8.7 | J | 10 | 7.7 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C15-C16 | 22 | | 10 | 7.7 | mg/Kg | ₽ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C17-C18 | 27 | | 10 | 7.7 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C19-C20 | 120 | | 10 | 7.7 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C21-C22 | 96 | | 10 | 7.7 | mg/Kg | ₽ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C23-C24 | 100 | | 10 | 7.7 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C25-C28 | 240 | | 10 | 7.7 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C29-C32 | 250 | | 10 | 7.7 | mg/Kg | ₽ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C33-C36 | 180 | | 10 | 7.7 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C37-C40 | 59 | | 10 | 7.7 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C41-C44 | ND | | 10 | 7.7 | mg/Kg | ₽ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| C6-C44 | 1100 | | 10 | 7.7 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 08:59 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |

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Page 16 of 61

60 - 138

Lab Sample ID: 570-69878-1

© 09/14/21 12:44 09/16/21 08:37

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© 09/14/21 12:44 09/16/21 08:37

© 09/14/21 12:44 09/16/21 08:37

© 09/14/21 12:44 09/16/21 08:37

09/14/21 12:44 09/16/21 08:59

Job ID: 570-69878-1

Client: WGR Southwest Inc Project/Site: Tesoro LA Refinery

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: SED-005 Lab Sample ID: 570-69878-3 **Matrix: Solid**

Date Collected: 09/09/21 15:45 Date Received: 09/13/21 13:50

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|--------|-----------|----|-----|-------|---------|----------------|----------------|---------|
| C6 as C6 | ND | | 12 | 9.2 | mg/Kg | <u></u> | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C7 as C7 | ND | | 12 | 9.2 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C8 as C8 | ND | | 12 | 9.2 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C9-C10 | ND | | 12 | 9.2 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C11-C12 | ND | | 12 | 9.2 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C13-C14 | ND | | 12 | 9.2 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C15-C16 | 21 | | 12 | 9.2 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C17-C18 | 33 | | 12 | 9.2 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C19-C20 | 50 | | 12 | 9.2 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C21-C22 | 86 | | 12 | 9.2 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C23-C24 | 140 | | 12 | 9.2 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C25-C28 | 400 | | 12 | 9.2 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C29-C32 | 420 | | 12 | 9.2 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C33-C36 | 250 | | 12 | 9.2 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C37-C40 | 98 | | 12 | 9.2 | mg/Kg | ☼ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C41-C44 | 18 | | 12 | 9.2 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |
| C6-C44 | 1500 | | 12 | 9.2 | mg/Kg | ₽ | 09/14/21 12:44 | 09/16/21 09:21 | 1 |

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 09/14/21 12:44 09/16/21 09:21 n-Octacosane (Surr) 60 - 138 127

Client Sample ID: SED-006 Date Collected: 09/09/21 10:25

C6-C44

| Date Received: 09/13/ | 21 13:50 | | | | | | | |
|-----------------------|------------------|----|-----|-------|---------|----------------|----------------|---------|
| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| C6 as C6 | ND ND | 12 | 9.1 | mg/Kg | <u></u> | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C7 as C7 | ND | 12 | 9.1 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C8 as C8 | ND | 12 | 9.1 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C9-C10 | ND | 12 | 9.1 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C11-C12 | ND | 12 | 9.1 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C13-C14 | 13 | 12 | 9.1 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C15-C16 | 22 | 12 | 9.1 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C17-C18 | 22 | 12 | 9.1 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C19-C20 | 33 | 12 | 9.1 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C21-C22 | 79 | 12 | 9.1 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C23-C24 | 180 | 12 | 9.1 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C25-C28 | 580 | 12 | 9.1 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C29-C32 | 640 | 12 | 9.1 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C33-C36 | 350 | 12 | 9.1 | mg/Kg | ☆ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C37-C40 | 140 | 12 | 9.1 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |
| C41-C44 | 28 | 12 | 9.1 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 09:44 | 1 |

%Recovery Qualifier Limits Prepared Analyzed Dil Fac Surrogate n-Octacosane (Surr) 135 60 - 138 09/14/21 12:44 09/16/21 09:44

12

9.1 mg/Kg

2000

Eurofins Calscience LLC

© 09/14/21 12:44 09/16/21 09:44

Lab Sample ID: 570-69878-4

Matrix: Solid

Client: WGR Southwest Inc Job ID: 570-69878-1
Project/Site: Tesoro LA Refinery

Method: 8015B - Diesel Range Organics (DRO) (GC)

160

59

14

940

127

%Recovery Qualifier

C33-C36

C37-C40

C41-C44

C6-C44

Surrogate

n-Octacosane (Surr)

| Client Sample ID: SED-007 Date Collected: 09/09/21 11:30 | | | | | | Lab San | nple ID: 570-6 Matrix | 9878-5 :: Solid |
|---|------------------|----|-----|-------|----------------|----------------|--------------------------|--------------------|
| Date Received: 09/13/21 13:50 Analyte | Result Qualifier | RL | MDI | Unit | D | Prepared | Analyzed | Dil Fac |
| C6 as C6 | ND Qualifier | 14 | | mg/Kg | — " | 09/14/21 12:44 | | 1 |
| C7 as C7 | ND | 14 | | mg/Kg | | 09/14/21 12:44 | | 1 |
| C8 as C8 | ND | 14 | | mg/Kg | ₽ | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C9-C10 | ND | 14 | | mg/Kg | \$ | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C11-C12 | ND | 14 | | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C13-C14 | ND | 14 | 10 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C15-C16 | ND | 14 | 10 | mg/Kg | | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C17-C18 | 19 | 14 | 10 | mg/Kg | ₽ | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C19-C20 | 33 | 14 | 10 | mg/Kg | ≎ | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C21-C22 | 54 | 14 | 10 | mg/Kg | | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C23-C24 | 92 | 14 | 10 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C25-C28 | 260 | 14 | 10 | mg/Kg | ₽ | 09/14/21 12:44 | 09/16/21 10:07 | 1 |
| C29-C32 | 270 | 14 | 10 | mg/Kg | ₩ | 09/14/21 12:44 | 09/16/21 10:07 | 1 |

14

14

14

14

Limits

60 - 138

10 mg/Kg

10 mg/Kg

10 mg/Kg

10 mg/Kg

© 09/14/21 12:44 09/16/21 10:07

© 09/14/21 12:44 09/16/21 10:07

© 09/14/21 12:44 09/16/21 10:07

© 09/14/21 12:44 09/16/21 10:07

09/14/21 12:44 09/16/21 10:07

Analyzed

Prepared

13

Dil Fac

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: 8081A - Organochlorine Pesticides (GC)

| Client Sample ID: SED-003 Date Collected: 09/09/21 17: Date Received: 09/13/21 13: | | | | | | | Lab San | nple ID: 570-6 Matrix | 9878-1 :: Solid |
|--|-----------|-----------|----------|------|-------|---|----------------|--------------------------|--------------------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| 2,4'-DDD | 3.4 | J p | 5.0 | 0.32 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:19 | 5 |
| 2,4'-DDE | 11 | p | 10 | 0.49 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:19 | 5 |
| 2,4'-DDT | ND | | 5.0 | 0.46 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:19 | 5 |
| 4,4'-DDD | 18 | F1 | 5.0 | 2.5 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:19 | 5 |
| 4,4'-DDE | 21 | | 5.0 | 0.36 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:19 | 5 |
| 4,4'-DDT | ND | F1 F2 | 5.0 | 0.89 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:19 | 5 |
| Chlordane | 15 | J | 25 | 1.6 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:19 | 5 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| Tetrachloro-m-xylene | 25 | p | 20 - 131 | | | | 09/17/21 20:21 | 09/23/21 19:19 | 5 |
| DCB Decachlorobiphenyl (Surr) | 96 | p | 20 - 180 | | | | 09/17/21 20:21 | 09/23/21 19:19 | 5 |

| Client Sample ID: SED-004 Date Collected: 09/09/21 13:30 Date Received: 09/13/21 13:50 Lab Sample ID: 570 Material Sample ID: 570 | | | | | | | | • | -69878-2 ix: Solid | |
|---|--------|-----------|-----|------|-------|---|----------------|----------------|-----------------------|--|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac | |
| 2,4'-DDD | 2.5 | J p | 5.0 | 0.32 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:34 | 5 | |
| 2,4'-DDE | 0.63 | Jp | 10 | 0.48 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:34 | 5 | |
| 2,4'-DDT | ND | | 5.0 | 0.46 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:34 | 5 | |
| 4,4'-DDD | 8.1 | p | 5.0 | 2.5 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:34 | 5 | |
| 4,4'-DDE | 22 | | 5.0 | 0.35 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:34 | 5 | |
| 4,4'-DDT | ND | | 5.0 | 0.88 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:34 | 5 | |
| Chlordane | 81 | | 25 | 1.6 | ug/Kg | | 09/17/21 20:21 | 09/23/21 19:34 | 5 | |

| Surrogate | %Recovery (| Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|-------------------------------|-------------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 50 p | מ | 20 - 131 | 09/17/21 20:21 | 09/23/21 19:34 | 5 |
| DCB Decachlorobiphenyl (Surr) | 98 | | 20 - 180 | 09/17/21 20:21 | 09/23/21 19:34 | 5 |

Client Sample ID: SED-005 Date Collected: 09/09/21 15:45 Lab Sample ID: 570-69878-3 **Matrix: Solid** Date Received: 09/13/21 13:50

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-----------|--------|-----------|-----|------|-------|---|----------------|----------------|---------|
| 2,4'-DDD | 1.3 | J p | 5.0 | 0.32 | ug/Kg | | 09/17/21 20:23 | 09/23/21 19:48 | 5 |
| 2,4'-DDE | 2.5 | Jp | 10 | 0.48 | ug/Kg | | 09/17/21 20:23 | 09/23/21 19:48 | 5 |
| 2,4'-DDT | ND | | 5.0 | 0.46 | ug/Kg | | 09/17/21 20:23 | 09/23/21 19:48 | 5 |
| 4,4'-DDD | 6.7 | p | 5.0 | 2.5 | ug/Kg | | 09/17/21 20:23 | 09/23/21 19:48 | 5 |
| 4,4'-DDE | 18 | | 5.0 | 0.35 | ug/Kg | | 09/17/21 20:23 | 09/23/21 19:48 | 5 |
| 4,4'-DDT | ND | | 5.0 | 0.88 | ug/Kg | | 09/17/21 20:23 | 09/23/21 19:48 | 5 |
| Chlordane | 8.9 | J p | 25 | 1.6 | ug/Kg | | 09/17/21 20:23 | 09/23/21 19:48 | 5 |

| Surrogate | %Recovery Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|-------------------------------|---------------------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 67 p | 20 - 131 | 09/17/21 20:23 | 09/23/21 19:48 | 5 |
| DCB Decachlorobiphenyl (Surr) | 81 p | 20 - 180 | 09/17/21 20:23 | 09/23/21 19:48 | 5 |

| DCB Decachlorobiphenyl (Surr) | 81 p | 20 - 180 | 09/17/21 20:23 09/23/21 19:48 5 |
|---|------|----------|---|
| Client Sample ID: SED-006 Date Collected: 09/09/21 10:25 | | | Lab Sample ID: 570-69878-4 Matrix: Solid |

| Date Received: 09/13/21 13:50 | | | | | | | | | |
|-------------------------------|--------|-----------|-----|------|-------|---|----------------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| 2,4'-DDD | 5.2 | p | 5.0 | 0.32 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:02 | 5 |
| 2,4'-DDE | 5.8 | Jр | 9.9 | 0.48 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:02 | 5 |
| 2,4'-DDT | ND | | 5.0 | 0.46 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:02 | 5 |

Page 19 of 61

Client Sample Results

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

| Client Sample ID: SED-006 | | | | | | Lab San | nple ID: 570-6 | 69878-4 |
|--------------------------------|--------|-----------|----|----------|---|----------|----------------|----------|
| Date Collected: 09/09/21 10:25 | | | | | | | Matrix | x: Solid |
| Date Received: 09/13/21 13:50 | | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL Unit | D | Prepared | Analyzed | Dil Fac |

| Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------|----------|----------------------------|--|--|--|---|--|
| 23 | 5.0 | 2.5 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:02 | 5 |
| 17 | 5.0 | 0.35 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:02 | 5 |
| ND | 5.0 | 0.88 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:02 | 5 |
| 27 | 25 | 1.6 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:02 | 5 |
| | 23 17 | 23 5.0 17 5.0 ND 5.0 | 23 5.0 2.5 17 5.0 0.35 ND 5.0 0.88 | 23 5.0 2.5 ug/Kg 17 5.0 0.35 ug/Kg ND 5.0 0.88 ug/Kg | 23 5.0 2.5 ug/Kg 17 5.0 0.35 ug/Kg ND 5.0 0.88 ug/Kg | 23 5.0 2.5 ug/Kg 09/17/21 20:23 17 5.0 0.35 ug/Kg 09/17/21 20:23 ND 5.0 0.88 ug/Kg 09/17/21 20:23 | 23 5.0 2.5 ug/Kg 09/17/21 20:23 09/23/21 20:02 17 5.0 0.35 ug/Kg 09/17/21 20:23 09/23/21 20:02 ND 5.0 0.88 ug/Kg 09/17/21 20:23 09/23/21 20:02 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|-------------------------------|-----------|-----------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 45 | p | 20 - 131 | 09/17/21 20:23 | 09/23/21 20:02 | 5 |
| DCB Decachlorobiphenyl (Surr) | 137 | | 20 - 180 | 09/17/21 20:23 | 09/23/21 20:02 | 5 |

Client Sample ID: SED-007 Lab Sample ID: 570-69878-5 Date Collected: 09/09/21 11:30 **Matrix: Solid** Date Received: 09/13/21 13:50

| Date Received, 03/13/2 | E 1 10.00 | | | | | | | | |
|------------------------|-----------|-----------|-----|------|-------|---|----------------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| 2,4'-DDD | 1.0 | J p | 5.0 | 0.32 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:16 | 5 |
| 2,4'-DDE | 1.6 | Jp | 9.9 | 0.48 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:16 | 5 |
| 2,4'-DDT | ND | | 5.0 | 0.46 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:16 | 5 |
| 4,4'-DDD | 10 | p | 5.0 | 2.5 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:16 | 5 |
| 4,4'-DDE | 8.1 | р | 5.0 | 0.35 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:16 | 5 |
| 4,4'-DDT | ND | | 5.0 | 0.88 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:16 | 5 |
| Chlordane | 12 | Jp | 25 | 1.6 | ug/Kg | | 09/17/21 20:23 | 09/23/21 20:16 | 5 |
| | | | | | | | | | |

| Surrogate | %Recovery Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|-------------------------------|---------------------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 40 p | 20 - 131 | 09/17/21 20:23 | 09/23/21 20:16 | 5 |
| DCB Decachlorobiphenyl (Surr) | 112 p | 20 - 180 | 09/17/21 20:23 | 09/23/21 20:16 | 5 |

Job ID: 570-69878-1

Client: WGR Southwest Inc

Project/Site: Tesoro LA Refinery

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Client Sample ID: SED-003 Date Collected: 09/09/21 17 Date Received: 09/13/21 13 | | | | | | | Lab San | nple ID: 570-6 Matrix | 9878-1 :: Solid |
|--|-----------|-----------|----------|-----|-------|---------|----------------|--------------------------|--------------------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Aroclor-1016 | ND | F2 F1 | 29 | 16 | ug/Kg | <u></u> | 09/17/21 20:21 | 09/23/21 18:29 | 1 |
| Aroclor-1221 | ND | | 29 | 16 | ug/Kg | ☼ | 09/17/21 20:21 | 09/23/21 18:29 | 1 |
| Aroclor-1232 | ND | | 29 | 16 | ug/Kg | ☼ | 09/17/21 20:21 | 09/23/21 18:29 | 1 |
| Aroclor-1242 | ND | | 29 | 16 | ug/Kg | ₩ | 09/17/21 20:21 | 09/23/21 18:29 | 1 |
| Aroclor-1248 | ND | | 29 | 16 | ug/Kg | ☼ | 09/17/21 20:21 | 09/23/21 18:29 | 1 |
| Aroclor-1254 | 180 | | 29 | 14 | ug/Kg | ₽ | 09/17/21 20:21 | 09/23/21 18:29 | 1 |
| Aroclor-1260 | 180 | F1 | 29 | 14 | ug/Kg | ₩ | 09/17/21 20:21 | 09/23/21 18:29 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| DCB Decachlorobiphenyl (Surr) | 44 | | 20 - 155 | | | | 09/17/21 20:21 | 09/23/21 18:29 | 1 |
| Tetrachloro-m-xylene (Surr) | 45 | | 25 - 126 | | | | 09/17/21 20:21 | 09/23/21 18:29 | 1 |

Client Sample ID: SED-004 Lab Sample ID: 570-69878-2 Date Collected: 09/09/21 13:30 **Matrix: Solid** Date Received: 09/13/21 13:50

| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|------------------|----|-----|-------|---|----------------|----------------|---------|
| Aroclor-1016 | ND ND | 20 | 11 | ug/Kg | ☆ | 09/17/21 20:21 | 09/23/21 18:47 | 1 |
| Aroclor-1221 | ND | 20 | 11 | ug/Kg | ≎ | 09/17/21 20:21 | 09/23/21 18:47 | 1 |
| Aroclor-1232 | ND | 20 | 11 | ug/Kg | ₩ | 09/17/21 20:21 | 09/23/21 18:47 | 1 |
| Aroclor-1242 | ND | 20 | 11 | ug/Kg | ₽ | 09/17/21 20:21 | 09/23/21 18:47 | 1 |
| Aroclor-1248 | ND | 20 | 11 | ug/Kg | ₽ | 09/17/21 20:21 | 09/23/21 18:47 | 1 |
| Aroclor-1254 | 89 | 20 | 9.9 | ug/Kg | ₩ | 09/17/21 20:21 | 09/23/21 18:47 | 1 |
| Aroclor-1260 | 110 | 20 | 9.9 | ug/Kg | ≎ | 09/17/21 20:21 | 09/23/21 18:47 | 1 |
| | | | | | | | | |

| Surrogate | %Recovery Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|-------------------------------|---------------------|----------|----------------|----------------|---------|
| DCB Decachlorobiphenyl (Surr) | 78 | 20 - 155 | 09/17/21 20:21 | 09/23/21 18:47 | 1 |
| Tetrachloro-m-xylene (Surr) | 65 | 25 - 126 | 09/17/21 20:21 | 09/23/21 18:47 | 1 |

Client Sample ID: SED-005 Lab Sample ID: 570-69878-3 Date Collected: 09/09/21 15:45 **Matrix: Solid** Date Received: 09/13/21 13:50

| Date Received. 00/10/2 | 1 10.00 | | | | | | | |
|------------------------|------------------|----|-----|-------|----------------|----------------|----------------|---------|
| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Aroclor-1016 | ND ND | 24 | 13 | ug/Kg | — - | 09/17/21 20:23 | 09/23/21 19:05 | 1 |
| Aroclor-1221 | ND | 24 | 13 | ug/Kg | ₽ | 09/17/21 20:23 | 09/23/21 19:05 | 1 |
| Aroclor-1232 | ND | 24 | 13 | ug/Kg | ₽ | 09/17/21 20:23 | 09/23/21 19:05 | 1 |
| Aroclor-1242 | ND | 24 | 13 | ug/Kg | ₩ | 09/17/21 20:23 | 09/23/21 19:05 | 1 |
| Aroclor-1248 | ND | 24 | 13 | ug/Kg | ₽ | 09/17/21 20:23 | 09/23/21 19:05 | 1 |
| Aroclor-1254 | 130 | 24 | 12 | ug/Kg | ₩ | 09/17/21 20:23 | 09/23/21 19:05 | 1 |
| Aroclor-1260 | 110 | 24 | 12 | ug/Kg | ₩ | 09/17/21 20:23 | 09/23/21 19:05 | 1 |
| | | | | | | | | |

| Surrogate | %Recovery Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|-------------------------------|---------------------|----------|----------------|----------------|---------|
| DCB Decachlorobiphenyl (Surr) | 76 | 20 - 155 | 09/17/21 20:23 | 09/23/21 19:05 | 1 |
| Tetrachloro-m-xylene (Surr) | 64 | 25 - 126 | 09/17/21 20:23 | 09/23/21 19:05 | 1 |

Client Sample ID: SED-006 Lab Sample ID: 570-69878-4

Date Collected: 09/09/21 10:25 Date Received: 09/13/21 13:50

| Date Neceived, 03/13/21 13.30 | | | | | | | | | |
|-------------------------------|--------|-----------|----|-----|-------|-------------|----------------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Aroclor-1016 | ND | | 24 | 13 | ug/Kg | | 09/17/21 20:23 | 09/23/21 19:23 | 1 |
| Aroclor-1221 | ND | | 24 | 13 | ug/Kg | ₽ | 09/17/21 20:23 | 09/23/21 19:23 | 1 |
| Aroclor-1232 | ND | | 24 | 13 | ug/Kg | ₽ | 09/17/21 20:23 | 09/23/21 19:23 | 1 |

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Page 21 of 61

Matrix: Solid

Client Sample Results

Client: WGR Southwest Inc
Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

| Client Sample ID: SED-006 | Lab Sample ID: 570-69878-4 |
|--------------------------------|----------------------------|
| Date Collected: 09/09/21 10:25 | Matrix: Solid |
| Date Received: 09/13/21 13:50 | |

| Date Received: 09/13/21 13: | 50 | | | | | | | |
|-------------------------------|---------------------|----------|-----|-------|---------|----------------|----------------|---------|
| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Aroclor-1242 | ND ND | 24 | 13 | ug/Kg | <u></u> | 09/17/21 20:23 | 09/23/21 19:23 | 1 |
| Aroclor-1248 | ND | 24 | 13 | ug/Kg | ₩ | 09/17/21 20:23 | 09/23/21 19:23 | 1 |
| Aroclor-1254 | 100 | 24 | 12 | ug/Kg | ₩ | 09/17/21 20:23 | 09/23/21 19:23 | 1 |
| Aroclor-1260 | 98 | 24 | 12 | ug/Kg | ಘ | 09/17/21 20:23 | 09/23/21 19:23 | 1 |
| Surrogate | %Recovery Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| DCB Decachlorobiphenyl (Surr) | | 20 - 155 | | | | 09/17/21 20:23 | 09/23/21 19:23 | |

| our oguto | fortooorory quantitor | | opu. ou | 7 111 all y 2 c a | 2 |
|-------------------------------|-----------------------|----------|----------------|-------------------|---|
| DCB Decachlorobiphenyl (Surr) | 75 | 20 - 155 | 09/17/21 20:23 | 09/23/21 19:23 | 1 |
| Tetrachloro-m-xylene (Surr) | 63 | 25 - 126 | 09/17/21 20:23 | 09/23/21 19:23 | 1 |
| | | | | | |

| Client Sample ID: SED-007 | | | | | Lab San | ոple ID: 570- | 69878-5 | |
|--------------------------------|------------------|----|----------|---|----------|---------------|----------------|--|
| Date Collected: 09/09/21 11:30 | | | | | | Matri | x: Solid | |
| Date Received: 09/13/21 13:50 | | | | | | | | |
| Analyte | Result Qualifier | RL | MDL Unit | D | Prepared | Analyzed | Dil Fac | |

| Analyte | Result (| Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|----------|-----------|----|-----|-------|---------|----------------|----------------|---------|
| Aroclor-1016 | ND ND | | 27 | 15 | ug/Kg | <u></u> | 09/17/21 20:23 | 09/23/21 19:41 | 1 |
| Aroclor-1221 | ND | | 27 | 15 | ug/Kg | ☼ | 09/17/21 20:23 | 09/23/21 19:41 | 1 |
| Aroclor-1232 | ND | | 27 | 15 | ug/Kg | ☼ | 09/17/21 20:23 | 09/23/21 19:41 | 1 |
| Aroclor-1242 | ND | | 27 | 15 | ug/Kg | ₩ | 09/17/21 20:23 | 09/23/21 19:41 | 1 |
| Aroclor-1248 | ND | | 27 | 15 | ug/Kg | ₩ | 09/17/21 20:23 | 09/23/21 19:41 | 1 |
| Aroclor-1254 | 110 | | 27 | 13 | ug/Kg | ☼ | 09/17/21 20:23 | 09/23/21 19:41 | 1 |
| Aroclor-1260 | 190 | | 27 | 13 | ug/Kg | ₽ | 09/17/21 20:23 | 09/23/21 19:41 | 1 |
| | | | | | | | | | |

| Surrogate | %Recovery Q | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|-------------------------------|-------------|-----------|----------|----------------|----------------|---------|
| DCB Decachlorobiphenyl (Surr) | 71 | | 20 - 155 | 09/17/21 20:23 | 09/23/21 19:41 | 1 |
| Tetrachloro-m-xylene (Surr) | 52 | | 25 - 126 | 09/17/21 20:23 | 09/23/21 19:41 | 1 |

Client: WGR Southwest Inc Job ID: 570-69878-1
Project/Site: Tesoro LA Refinery

Method: 6020 - Metals (ICP/MS)

Zinc

| Client Sample ID: SED-003 Date Collected: 09/09/21 17:55 Date Received: 09/13/21 13:50 | | | | | | | Lab San | nple ID: 570-6 Matrix | 9878-1 :: Solid |
|--|--------|-----------|------|-------|-------|------------|----------------|--------------------------|--------------------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Cadmium | ND | | 2.82 | 1.27 | mg/Kg | — <u>~</u> | 09/23/21 08:25 | 09/23/21 13:56 | 20 |
| Chromium | 54.1 | | 5.63 | 0.845 | mg/Kg | ₩ | 09/23/21 08:25 | 09/23/21 13:56 | 20 |
| Copper | 134 | F1 | 2.82 | 0.758 | mg/Kg | ₩ | 09/23/21 08:25 | 09/23/21 13:56 | 20 |
| Lead | 76.8 | F1 | 2.82 | 0.605 | mg/Kg | ₩ | 09/23/21 08:25 | 09/23/21 13:56 | 20 |
| Nickel | 19.0 | | 2.82 | 0.760 | mg/Kg | ☼ | 09/23/21 08:25 | 09/23/21 13:56 | 20 |

14.1

13.0 mg/Kg

565

Client Sample ID: SED-004 Lab Sample ID: 570-69878-2 Date Collected: 09/09/21 13:30 **Matrix: Solid** Date Received: 09/13/21 13:50 Analyte Result Qualifier RL MDL Unit Prepared Dil Fac Analyzed Cadmium ND 2.00 0.900 mg/Kg © 09/23/21 08:25 09/23/21 14:18 20 4.00 20 **Chromium** 37.9 0.600 mg/Kg © 09/23/21 08:25 09/23/21 14:18 0.538 mg/Kg 2.00 © 09/23/21 08:25 09/23/21 14:18 20 Copper 93.5 20 2.00 0.430 mg/Kg Lead 57.6 © 09/23/21 08:25 09/23/21 14:18 Nickel 2.00 0.540 mg/Kg © 09/23/21 08:25 09/23/21 14:18 20 13.3 10.0 9.24 mg/Kg © 09/23/21 08:25 09/23/21 14:18 Zinc 353

| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|------------------|------|-------|-------|----------------|----------------|----------------|---------|
| Cadmium | ND ND | 2.31 | 1.04 | mg/Kg | — - | 09/23/21 08:25 | 09/23/21 14:21 | 20 |
| Chromium | 40.3 | 4.63 | 0.694 | mg/Kg | ₽ | 09/23/21 08:25 | 09/23/21 14:21 | 20 |
| Copper | 95.9 | 2.31 | 0.623 | mg/Kg | ₽ | 09/23/21 08:25 | 09/23/21 14:21 | 20 |
| Lead | 57.8 | 2.31 | 0.498 | mg/Kg | ₽ | 09/23/21 08:25 | 09/23/21 14:21 | 20 |
| Nickel | 14.0 | 2.31 | 0.625 | mg/Kg | ₽ | 09/23/21 08:25 | 09/23/21 14:21 | 20 |
| Zinc | 386 | 11.6 | 10.7 | mg/Kg | ≎ | 09/23/21 08:25 | 09/23/21 14:21 | 20 |

Client Sample ID: SED-006

Date Collected: 09/09/21 10:25

Date Received: 09/13/21 13:50

Lab Sample ID: 570-69878-4

Matrix: Solid

| Result Quali | lifier RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|-----------------------------------|--|---|---|---|---|--|
| ND | 2.37 | 1.07 | mg/Kg | * | 09/23/21 08:25 | 09/23/21 14:24 | 20 |
| 44.3 | 4.75 | 0.712 | mg/Kg | ₽ | 09/23/21 08:25 | 09/23/21 14:24 | 20 |
| 111 | 2.37 | 0.639 | mg/Kg | ₽ | 09/23/21 08:25 | 09/23/21 14:24 | 20 |
| 65.3 | 2.37 | 0.510 | mg/Kg | ₽ | 09/23/21 08:25 | 09/23/21 14:24 | 20 |
| 14.0 | 2.37 | 0.641 | mg/Kg | ₽ | 09/23/21 08:25 | 09/23/21 14:24 | 20 |
| 386 | 11.9 | 11.0 | mg/Kg | ☼ | 09/23/21 08:25 | 09/23/21 14:24 | 20 |
| | ND 44.3 111 65.3 14.0 | ND 2.37 44.3 4.75 111 2.37 65.3 2.37 14.0 2.37 | ND 2.37 1.07 44.3 4.75 0.712 111 2.37 0.639 65.3 2.37 0.510 14.0 2.37 0.641 | ND 2.37 1.07 mg/Kg 44.3 4.75 0.712 mg/Kg 111 2.37 0.639 mg/Kg 65.3 2.37 0.510 mg/Kg 14.0 2.37 0.641 mg/Kg | ND 2.37 1.07 mg/Kg ☆ 44.3 4.75 0.712 mg/Kg ☆ 111 2.37 0.639 mg/Kg ☆ 65.3 2.37 0.510 mg/Kg ☆ 14.0 2.37 0.641 mg/Kg ☆ | ND 2.37 1.07 mg/Kg □ 09/23/21 08:25 44.3 4.75 0.712 mg/Kg □ 09/23/21 08:25 111 2.37 0.639 mg/Kg □ 09/23/21 08:25 65.3 2.37 0.510 mg/Kg □ 09/23/21 08:25 14.0 2.37 0.641 mg/Kg □ 09/23/21 08:25 | ND 2.37 1.07 mg/Kg \$\infty\$ 09/23/21 08:25 09/23/21 14:24 44.3 4.75 0.712 mg/Kg \$\infty\$ 09/23/21 08:25 09/23/21 14:24 111 2.37 0.639 mg/Kg \$\infty\$ 09/23/21 08:25 09/23/21 14:24 65.3 2.37 0.510 mg/Kg \$\infty\$ 09/23/21 08:25 09/23/21 14:24 14.0 2.37 0.641 mg/Kg \$\infty\$ 09/23/21 08:25 09/23/21 14:24 |

Client Sample ID: SED-007

Date Collected: 09/09/21 11:30

Date Received: 09/13/21 13:50

Matrix: Solid

| Date Received. 03/13/21 | 13.30 | | | | | | | |
|-------------------------|------------------|------|-------|-------|---------|----------------|----------------|---------|
| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Cadmium | ND ND | 2.73 | 1.23 | mg/Kg | <u></u> | 09/23/21 08:25 | 09/23/21 14:28 | 20 |
| Chromium | 42.6 | 5.45 | 0.818 | mg/Kg | ₩ | 09/23/21 08:25 | 09/23/21 14:28 | 20 |
| Copper | 92.7 | 2.73 | 0.733 | mg/Kg | ₩ | 09/23/21 08:25 | 09/23/21 14:28 | 20 |
| Lead | 55.4 | 2.73 | 0.586 | mg/Kg | ₽ | 09/23/21 08:25 | 09/23/21 14:28 | 20 |
| Nickel | 13.4 | 2.73 | 0.736 | mg/Kg | ₩ | 09/23/21 08:25 | 09/23/21 14:28 | 20 |
| Zinc | 328 | 13.6 | 12.6 | mg/Kg | ₩ | 09/23/21 08:25 | 09/23/21 14:28 | 20 |
| _ | | | | | | | | |

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Page 23 of 61 9/27/2021

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09/23/21 08:25 09/23/21 13:56

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Client Sample Results

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

| motifical in the motion of the transfer | Method: | 7471A - | Mercury | (CVAA) |
|---|----------------|---------|---------|--------|
|---|----------------|---------|---------|--------|

| Client Sample ID: SED-003 Date Collected: 09/09/21 17:55 | | | | | | | Lab San | nple ID: 570-6 Matrix | 9878-1 :: Solid |
|---|--------|-----------|-------|--------|-------|-----------|----------------|--------------------------|--------------------|
| Date Received: 09/13/21 13:50 Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Mercury | 0.222 | J | 0.234 | 0.0380 | mg/Kg | — <u></u> | 09/23/21 09:54 | 09/23/21 14:29 | 1 |
| Client Sample ID: SED-004 | | | | | | | Lab San | nple ID: 570-6 | 9878-2 |
| Date Collected: 09/09/21 13:30 | | | | | | | | Matrix | : Solid |
| Date Received: 09/13/21 13:50 | | | | | | _ | | | |
| Analyte | | Qualifier | RL | MDL | | D | Prepared | Analyzed | Dil Fac |
| Mercury | 0.246 | | 0.158 | 0.0256 | mg/Kg | ₩ | 09/23/21 09:54 | 09/23/21 14:34 | 1 |
| Client Sample ID: SED-005 | | | | | | | Lab San | nple ID: 570-6 | 9878-3 |
| Date Collected: 09/09/21 15:45 | | | | | | | | • | : Solid |
| Date Received: 09/13/21 13:50 | | | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Mercury | 0.334 | | 0.208 | 0.0337 | mg/Kg | <u></u> | 09/23/21 09:54 | 09/23/21 14:36 | 1 |
| Client Sample ID: SED-006 | | | | | | | Lab San | nple ID: 570-6 | 9878-4 |
| Date Collected: 09/09/21 10:25 | | | | | | | | - | : Solid |
| Date Received: 09/13/21 13:50 | | | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Mercury | 0.359 | | 0.195 | 0.0315 | mg/Kg | ₩ | 09/23/21 09:54 | 09/23/21 14:38 | 1 |
| Client Sample ID: SED-007 | | | | | | | Lab San | nple ID: 570-6 | 9878-5 |
| Date Collected: 09/09/21 11:30 | | | | | | | | • | : Solid |
| Date Received: 09/13/21 13:50 | | | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Mercury | 0.206 | J | 0.224 | 0.0362 | mg/Kg | <u></u> | 09/23/21 09:54 | 09/23/21 14:40 | 1 |

Client Sample Results

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

General Chemistry

| Client Sample ID: SED-003 Date Collected: 09/09/21 17:55 | | | | | | | Lab Sa | mple ID: 570-6 Matrix | 9878-1 :: Solid |
|--|--------|-----------|------|-----|-------|------------------|----------|--------------------------|--------------------|
| Date Received: 09/13/21 13:50 Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Carbon, Total Organic | 49900 | | 1430 | | mg/Kg | — - - | | 09/15/21 10:51 | 1 |
| Percent Moisture | 65.0 | | 0.1 | 0.1 | | | | 09/14/21 16:15 | 1 |
| Client Sample ID: SED-004 Date Collected: 09/09/21 13:30 Date Received: 09/13/21 13:50 | | | | | | | Lab Sa | mple ID: 570-6 Matrix | 9878-2 :: Solid |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Carbon, Total Organic | 38800 | | 995 | 346 | mg/Kg | <u> </u> | - | 09/16/21 10:51 | 1 |
| Percent Moisture | 49.8 | | 0.1 | 0.1 | % | | | 09/14/21 16:15 | 1 |
| Client Sample ID: SED-005 Date Collected: 09/09/21 15:45 Date Received: 09/13/21 13:50 | | | | | | | Lab Sa | mple ID: 570-6 Matrix | 9878-3 :: Solid |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Carbon, Total Organic | 44200 | | 1190 | 412 | mg/Kg | — - | | 09/16/21 10:51 | 1 |
| Percent Moisture | 57.8 | | 0.1 | 0.1 | | | | 09/14/21 16:15 | 1 |
| Client Sample ID: SED-006 Date Collected: 09/09/21 10:25 Date Received: 09/13/21 13:50 | | | | | | | Lab Sa | mple ID: 570-6 Matrix | 9878-4 :: Solid |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Carbon, Total Organic | 41500 | | 1190 | 412 | mg/Kg | - | <u> </u> | 09/15/21 10:32 | 1 |
| Percent Moisture | 57.9 | | 0.1 | 0.1 | | | | 09/14/21 16:15 | 1 |
| Client Sample ID: SED-007 Date Collected: 09/09/21 11:30 Date Received: 09/13/21 13:50 | | | | | | | Lab Sa | mple ID: 570-6 Matrix | 9878-5 :: Solid |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Carbon, Total Organic | 33700 | | 1340 | 466 | mg/Kg | - | | 09/15/21 10:32 | 1 |
| | 62.7 | | 0.1 | 0.1 | | | | 09/14/21 16:15 | 1 |

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: SED-003

Lab Sample ID: 570-69878-1

Date Collected: 09/09/21 17:55

Matrix: Solid

Date Collected: 09/09/21 17:55 Date Received: 09/13/21 13:50

| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------------------------------|------------------|------|------|------|---|----------|----------------|---------|
| Clay (less than 0.00391 mm) | 12.49 | 0.01 | 0.01 | % | | | 09/23/21 15:57 | 1 |
| Coarse Sand (0.5mm to 1mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 15:57 | 1 |
| Fine Sand (0.125 to 0.25mm) | 1.05 | 0.01 | 0.01 | % | | | 09/23/21 15:57 | 1 |
| Gravel (greater than 2 mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 15:57 | 1 |
| Medium Sand (0.25 to 0.5 mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 15:57 | 1 |
| Silt (0.00391 to 0.0625mm) | 69.38 | 0.01 | 0.01 | % | | | 09/23/21 15:57 | 1 |
| Total Silt and Clay (0 to 0.0626mm) | 81.87 | 0.01 | 0.01 | % | | | 09/23/21 15:57 | 1 |
| Very Coarse Sand (1 to 2mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 15:57 | 1 |
| Very Fine Sand (0.0625 to 0.125 mm) | 17.08 | 0.01 | 0.01 | % | | | 09/23/21 15:57 | 1 |

Client Sample ID: SED-004

Date Collected: 09/09/21 13:30

Lab Sample ID: 570-69878-2

Matrix: Solid

Date Received: 09/13/21 13:50

| Date Received: 09/13/21 13:50 | | | | | | | | |
|-------------------------------------|------------------|------|------|------|---|----------|----------------|---------|
| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Clay (less than 0.00391 mm) | 11.66 | 0.01 | 0.01 | % | | | 09/23/21 16:03 | 1 |
| Coarse Sand (0.5mm to 1mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:03 | 1 |
| Fine Sand (0.125 to 0.25mm) | 0.76 | 0.01 | 0.01 | % | | | 09/23/21 16:03 | 1 |
| Gravel (greater than 2 mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:03 | 1 |
| Medium Sand (0.25 to 0.5 mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:03 | 1 |
| Silt (0.00391 to 0.0625mm) | 68.33 | 0.01 | 0.01 | % | | | 09/23/21 16:03 | 1 |
| Total Silt and Clay (0 to 0.0626mm) | 79.99 | 0.01 | 0.01 | % | | | 09/23/21 16:03 | 1 |
| Very Coarse Sand (1 to 2mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:03 | 1 |
| Very Fine Sand (0.0625 to 0.125 | 19.25 | 0.01 | 0.01 | % | | | 09/23/21 16:03 | 1 |

Client Sample ID: SED-005

Date Collected: 09/09/21 15:45

Lab Sample ID: 570-69878-3

Matrix: Solid

Date Received: 09/13/21 13:50

mm)

| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------------------------------|------------------|------|------|------|---|----------|----------------|---------|
| Clay (less than 0.00391 mm) | 13.54 | 0.01 | 0.01 | % | | | 09/23/21 16:09 | 1 |
| Coarse Sand (0.5mm to 1mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:09 | 1 |
| Fine Sand (0.125 to 0.25mm) | 0.71 | 0.01 | 0.01 | % | | | 09/23/21 16:09 | 1 |
| Gravel (greater than 2 mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:09 | 1 |
| Medium Sand (0.25 to 0.5 mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:09 | 1 |
| Silt (0.00391 to 0.0625mm) | 70.10 | 0.01 | 0.01 | % | | | 09/23/21 16:09 | 1 |
| Total Silt and Clay (0 to 0.0626mm) | 83.64 | 0.01 | 0.01 | % | | | 09/23/21 16:09 | 1 |
| Very Coarse Sand (1 to 2mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:09 | 1 |
| Very Fine Sand (0.0625 to 0.125 mm) | 15.64 | 0.01 | 0.01 | % | | | 09/23/21 16:09 | 1 |

Client Sample ID: SED-006

Lab Sample ID: 570-69878-4

Date Collected: 09/09/21 10:25

Matrix: Solid

Date Received: 09/13/21 13:50

| Date Received: 09/13/21 13:50 | | | | | | | | | |
|-------------------------------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Clay (less than 0.00391 mm) | 7.33 | | 0.01 | 0.01 | % | | | 09/23/21 16:15 | 1 |
| Coarse Sand (0.5mm to 1mm) | ND | | 0.01 | 0.01 | % | | | 09/23/21 16:15 | 1 |
| Fine Sand (0.125 to 0.25mm) | 2.32 | | 0.01 | 0.01 | % | | | 09/23/21 16:15 | 1 |
| Gravel (greater than 2 mm) | ND | | 0.01 | 0.01 | % | | | 09/23/21 16:15 | 1 |
| Medium Sand (0.25 to 0.5 mm) | ND | | 0.01 | 0.01 | % | | | 09/23/21 16:15 | 1 |
| Silt (0.00391 to 0.0625mm) | 68.44 | | 0.01 | 0.01 | % | | | 09/23/21 16:15 | 1 |
| | | | | | | | | | |

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Page 26 of 61 9/27/2021

2

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Client Sample Results

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Lab Sample ID: 570-69878-4 **Client Sample ID: SED-006** Date Collected: 09/09/21 10:25 **Matrix: Solid**

| Date Received: 09/13/21 13:50 | | | | | | | | | |
|-------------------------------------|--------|-----------|------|------|------|---|----------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Total Silt and Clay (0 to 0.0626mm) | 75.76 | | 0.01 | 0.01 | % | | | 09/23/21 16:15 | 1 |
| Very Coarse Sand (1 to 2mm) | ND | | 0.01 | 0.01 | % | | | 09/23/21 16:15 | 1 |

21.91

mm)

mm)

Client Sample ID: SED-007 Lab Sample ID: 570-69878-5

0.01

0.01 %

Date Collected: 09/09/21 11:30 **Matrix: Solid**

Very Fine Sand (0.0625 to 0.125

| Date Received: 09/13/21 13:50 | | | | | | | | |
|-------------------------------------|------------------|------|------|------|---|----------|----------------|---------|
| Analyte | Result Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Clay (less than 0.00391 mm) | 6.40 | 0.01 | 0.01 | % | | | 09/23/21 16:24 | 1 |
| Coarse Sand (0.5mm to 1mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:24 | 1 |
| Fine Sand (0.125 to 0.25mm) | 3.01 | 0.01 | 0.01 | % | | | 09/23/21 16:24 | 1 |
| Gravel (greater than 2 mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:24 | 1 |
| Medium Sand (0.25 to 0.5 mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:24 | 1 |
| Silt (0.00391 to 0.0625mm) | 67.41 | 0.01 | 0.01 | % | | | 09/23/21 16:24 | 1 |
| Total Silt and Clay (0 to 0.0626mm) | 73.80 | 0.01 | 0.01 | % | | | 09/23/21 16:24 | 1 |
| Very Coarse Sand (1 to 2mm) | ND | 0.01 | 0.01 | % | | | 09/23/21 16:24 | 1 |
| Very Fine Sand (0.0625 to 0.125 | 23.19 | 0.01 | 0.01 | % | | | 09/23/21 16:24 | 1 |

09/23/21 16:15

11

13

1

PARTICLE SIZE SUMMARY

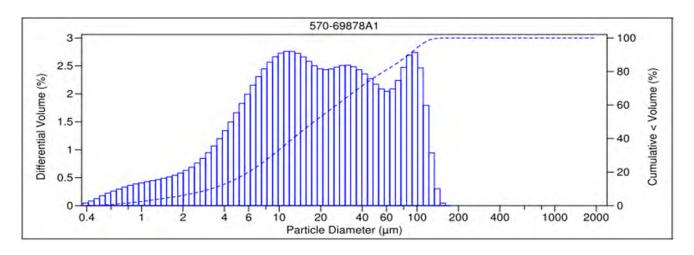
(ASTM D422 / D4464M)

| Tesoro Los Angeles Refinery - Carson Operations | Date Sampled: | 09/09/21 |
|---|----------------|-------------|
| | Date Received: | 09/13/21 |
| | Work Order No: | 570-69878 |
| | Date Analyzed: | 09/23/21 |
| | Method: | ASTM D4464M |
| | | |

Project:

| Sample ID | Depth ft | Description | Mean Grain Size mm |
|-----------|-------------|-------------|--------------------------|
| SED-003 | _ | Silt | 0.032 |

| | Particle Size Distribution, wt by percent | | | | | | | | | |
|--------|---|--------|--------|------|-------|-------|-------|--------|--|--|
| | Very | | | | Very | | | Total | | |
| Total | Coarse | Coarse | Medium | Fine | Fine | | | Silt & | | |
| Gravel | Sand | Sand | Sand | Sand | Sand | Silt | Clay | Clay | | |
| 0.00 | 0.00 | 0.00 | 0.00 | 1.05 | 17.08 | 69.38 | 12.49 | 81.87 | | |



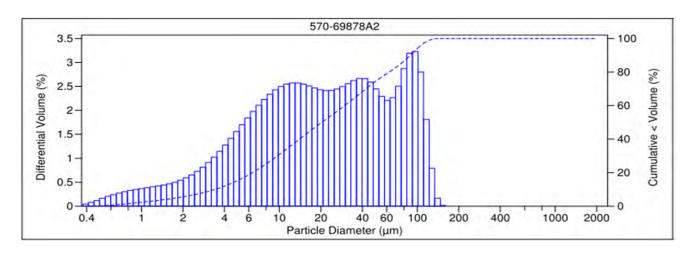
(ASTM D422 / D4464M)

| Tesoro Los Angeles Refinery - Carson Operations | Date Sampled: | 09/09/21 |
|---|----------------|-------------|
| | Date Received: | 09/13/21 |
| | Work Order No: | 570-69878 |
| | Date Analyzed: | 09/23/21 |
| | Method: | ASTM D4464M |
| | | |

Project:

| Sample ID | Depth ft | Description | Mean Grain Size mm |
|-----------|-------------|-------------|--------------------------|
| SED-004 | | Silt | 0.034 |

| | Particle Size Distribution, wt by percent | | | | | | | | | |
|--------|---|--------|--------|------|-------|-------|-------|--------|--|--|
| | Very | | | | Very | | | Total | | |
| Total | Coarse | Coarse | Medium | Fine | Fine | | | Silt & | | |
| Gravel | Sand | Sand | Sand | Sand | Sand | Silt | Clay | Clay | | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.76 | 19.25 | 68.33 | 11.66 | 79.99 | | |



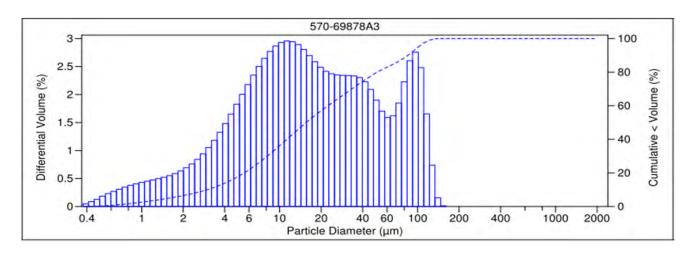
(ASTM D422 / D4464M)

| Tesoro Los Angeles Refinery - Carson Operations | Date Sampled: | 09/09/21 |
|---|----------------|-------------|
| | Date Received: | 09/13/21 |
| | Work Order No: | 570-69878 |
| | Date Analyzed: | 09/23/21 |
| | Method: | ASTM D4464M |
| | | |

Project:

| Sample ID | Depth ft | Description | Mean Grain Size mm |
|-----------|-------------|-------------|--------------------------|
| SED-005 | | Silt | 0.029 |

| | | Particle | e Size Distributio | n, wt by perc | ent | | | |
|--------|--------|----------|--------------------|---------------|-------|-------|-------|--------|
| | Very | | | | Very | | | Total |
| Total | Coarse | Coarse | Medium | Fine | Fine | | | Silt & |
| Gravel | Sand | Sand | Sand | Sand | Sand | Silt | Clay | Clay |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.71 | 15.64 | 70.10 | 13.54 | 83.64 |



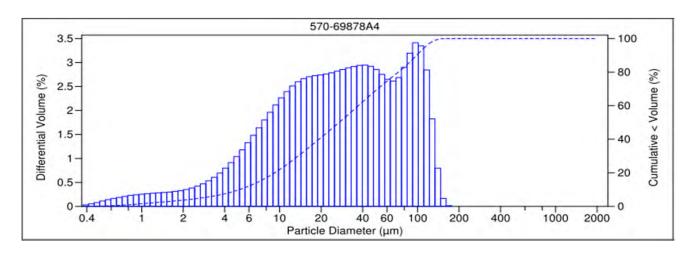
(ASTM D422 / D4464M)

| Tesoro Los Angeles Refinery - Carson Operations | Date Sampled: | 09/09/21 |
|---|----------------|-------------|
| | Date Received: | 09/13/21 |
| | Work Order No: | 570-69878 |
| | Date Analyzed: | 09/23/21 |
| | Method: | ASTM D4464M |
| | | |

Project:

| Sample ID | Depth ft | Description | Mean Grain Size mm |
|-----------|-------------|-------------|--------------------------|
| SED-006 | | Silt | 0.040 |

| | | Particle | e Size Distributio | n, wt by perc | ent | | | |
|--------|--------|----------|--------------------|---------------|-------|-------|------|--------|
| | Very | | | | Very | | | Total |
| Total | Coarse | Coarse | Medium | Fine | Fine | | | Silt & |
| Gravel | Sand | Sand | Sand | Sand | Sand | Silt | Clay | Clay |
| 0.00 | 0.00 | 0.00 | 0.00 | 2.32 | 21.91 | 68.44 | 7.33 | 75.76 |



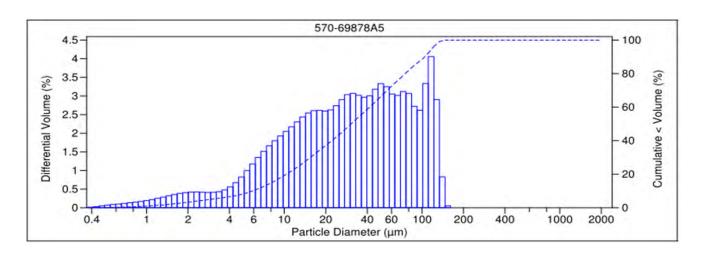
(ASTM D422 / D4464M)

| Tesoro Los Angeles Refinery - Carson Operations | Date Sampled: | 09/09/21 |
|---|----------------|-------------|
| | Date Received: | 09/13/21 |
| | Work Order No: | 570-69878 |
| | Date Analyzed: | 09/23/21 |
| | Method: | ASTM D4464M |
| | | |

Project:

| Sample ID | Depth ft | Description | Mean Grain Size mm |
|-------------|-------------|-------------|--------------------------|
| SED-007 | | Silt | 0.043 |

| | | Particle | e Size Distributio | n, wt by perc | ent | | | |
|--------|--------|----------|--------------------|---------------|-------|-------|------|--------|
| | Very | | | | Very | | | Total |
| Total | Coarse | Coarse | Medium | Fine | Fine | | | Silt & |
| Gravel | Sand | Sand | Sand | Sand | Sand | Silt | Clay | Clay |
| 0.00 | 0.00 | 0.00 | 0.00 | 3.01 | 23.19 | 67.41 | 6.40 | 73.80 |



Job ID: 570-69878-1

Client: WGR Southwest Inc Project/Site: Tesoro LA Refinery

Method: 8270C SIM - PAHs (GC/MS SIM)

Matrix: Solid Prep Type: Total/NA

| | | | Pe | rcent Surrogat | e Recovery (Acceptance Limits) |
|---------------------|------------------------|----------|----------|----------------|--------------------------------|
| | | FBP | NBZ | TPHd14 | |
| Lab Sample ID | Client Sample ID | (22-130) | (20-145) | (33-147) | |
| 570-69878-1 | SED-003 | 70 | 44 | 90 | |
| 570-69878-1 MS | SED-003 | 73 | 45 | 92 | |
| 570-69878-1 MSD | SED-003 | 73 | 45 | 90 | |
| 570-69878-2 | SED-004 | 61 | 36 | 81 | |
| 570-69878-3 | SED-005 | 72 | 45 | 91 | |
| 570-69878-4 | SED-006 | 56 | 34 | 80 | |
| 570-69878-5 | SED-007 | 71 | 54 | 103 | |
| LCS 570-180052/2-A | Lab Control Sample | 72 | 62 | 83 | |
| LCSD 570-180052/3-A | Lab Control Sample Dup | 77 | 60 | 90 | |
| MB 570-180052/1-A | Method Blank | 77 | 67 | 87 | |

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

NBZ = Nitrobenzene-d5 (Surr)

TPHd14 = p-Terphenyl-d14 (Surr)

Method: Organotins SIM - Organotins (GC/MS SIM)

Matrix: Solid Prep Type: Total/NA

| _ | | | Percent Surrogate Recovery (Acceptance Limits) |
|---------------------|------------------------|----------|--|
| | | TPTT | |
| Lab Sample ID | Client Sample ID | (10-120) | |
| 570-69878-1 | SED-003 | 80 | |
| 570-69878-2 | SED-004 | 104 | |
| 570-69878-3 | SED-005 | 91 | |
| 570-69878-4 | SED-006 | 90 | |
| 570-69878-5 | SED-007 | 95 | |
| LCS 570-179948/2-A | Lab Control Sample | 105 | |
| LCSD 570-179948/3-A | Lab Control Sample Dup | 119 | |
| MB 570-179948/1-A | Method Blank | 109 | |
| Surrogate Legend | | | |
| TPTT = Tripentyltin | | | |

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Solid Prep Type: Total/NA

| | | | Percent Surrogate Recovery (Acceptance Limits) |
|---------------------|------------------------|----------|--|
| | | OTCSN1 | |
| Lab Sample ID | Client Sample ID | (60-138) | |
| 570-69878-1 | SED-003 | 122 | |
| 570-69878-2 | SED-004 | 127 | |
| 570-69878-3 | SED-005 | 127 | |
| 570-69878-4 | SED-006 | 135 | |
| 570-69878-5 | SED-007 | 127 | |
| LCS 570-179051/2-A | Lab Control Sample | 105 | |
| LCSD 570-179051/3-A | Lab Control Sample Dup | 103 | |
| MB 570-179051/1-A | Method Blank | 115 | |
| Surrogate Legend | | | |

Page 33 of 61

Surrogate Summary

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid Prep Type: Total/NA

| | | | Percent Surrogate Rec | overy (Acceptance Limits) |
|---------------------|------------------------|----------|-----------------------|---------------------------|
| | | TCX1 | DCB1 | |
| Lab Sample ID | Client Sample ID | (20-131) | 20-180) | |
| 570-69878-1 | SED-003 | 25 p | 96 p | |
| 570-69878-1 MS | SED-003 | 72 p | 138 | |
| 570-69878-1 MSD | SED-003 | 84 p | 143 p | |
| 570-69878-2 | SED-004 | 50 p | 98 | |
| 570-69878-3 | SED-005 | 67 p | 81 p | |
| 570-69878-4 | SED-006 | 45 p | 137 | |
| 570-69878-5 | SED-007 | 40 p | 112 p | |
| LCS 570-180082/2-A | Lab Control Sample | 99 | 122 | |
| LCSD 570-180082/3-A | Lab Control Sample Dup | 92 | 103 | |
| MB 570-180082/1-A | Method Blank | 87 | 97 | |

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl (Surr)

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid Prep Type: Total/NA

| | | | Percent Sur | rogate Recovery (Acceptance Limits) |
|---------------------|------------------------|----------|-------------|-------------------------------------|
| | | DCB1 | TCX1 | |
| Lab Sample ID | Client Sample ID | (20-155) | (25-126) | |
| 570-69878-1 | SED-003 | 44 | 45 | |
| 570-69878-1 MS | SED-003 | 61 | 55 | |
| 570-69878-1 MSD | SED-003 | 80 | 68 | |
| 570-69878-2 | SED-004 | 78 | 65 | |
| 570-69878-3 | SED-005 | 76 | 64 | |
| 570-69878-4 | SED-006 | 75 | 63 | |
| 570-69878-5 | SED-007 | 71 | 52 | |
| LCS 570-180082/6-A | Lab Control Sample | 71 | 74 | |
| LCSD 570-180082/7-A | Lab Control Sample Dup | 76 | 82 | |
| MB 570-180082/1-A | Method Blank | 89 | 77 | |

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene (Surr)

Page 34 of 61

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: 8270C SIM - PAHs (GC/MS SIM)

Lab Sample ID: MB 570-180052/1-A

Matrix: Solid Analysis Batch: 180477 **Client Sample ID: Method Blank** Prep Type: Total/NA

Prep Batch: 180052

| | MB | MB | | | | | | | |
|------------------------|--------|-----------|-------|---------|-------|---|----------------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Acenaphthene | ND | | 0.010 | 0.00051 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Acenaphthylene | ND | | 0.010 | 0.0085 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Anthracene | ND | | 0.010 | 0.00067 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| 1,2-Benzanthracene | ND | | 0.010 | 0.0011 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Benzo[a]pyrene | ND | | 0.010 | 0.0014 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| 3,4-Benzofluoranthene | ND | | 0.010 | 0.0015 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Benzo[k]fluoranthene | ND | | 0.010 | 0.0016 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| 1,12-Benzoperylene | ND | | 0.010 | 0.0015 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Chrysene | ND | | 0.010 | 0.00078 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.010 | 0.0011 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Fluoranthene | ND | | 0.010 | 0.00097 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Fluorene | ND | | 0.010 | 0.00084 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 0.010 | 0.0012 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| 1-Methylnaphthalene | ND | | 0.010 | 0.00072 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| 2-Methylnaphthalene | ND | | 0.010 | 0.00072 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Naphthalene | ND | | 0.010 | 0.00078 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Phenanthrene | ND | | 0.010 | 0.00084 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Pyrene | ND | | 0.010 | 0.00075 | mg/Kg | | 09/17/21 18:49 | 09/20/21 18:55 | 1 |

MB MB

| Surrogate | %Recovery Quali | fier Limits | Prepared | Analyzed | Dil Fac |
|-------------------------|-----------------|-------------|----------------|----------------|---------|
| 2-Fluorobiphenyl (Surr) | 77 | 22 - 130 | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| Nitrobenzene-d5 (Surr) | 67 | 20 - 145 | 09/17/21 18:49 | 09/20/21 18:55 | 1 |
| p-Terphenyl-d14 (Surr) | 87 | 33 - 147 | 09/17/21 18:49 | 09/20/21 18:55 | 1 |

Lab Sample ID: LCS 570-180052/2-A

Matrix: Solid

Analysis Batch: 180477

| Client Sample | ID: | Lab | Control | Sample |
|---------------|-----|-----|---------|--------|
|---------------|-----|-----|---------|--------|

Prep Type: Total/NA Prep Batch: 180052

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Acenaphthene 0.100 0.07117 mg/Kg 71 53 - 125 Acenaphthylene 0.100 0.08591 mg/Kg 86 50 - 123 mg/Kg Anthracene 0.100 0.07390 74 50 - 132 76 1,2-Benzanthracene 0.100 0.07596 mg/Kg 50 - 133 Benzo[a]pyrene 0.100 0.08633 86 50 - 134 mg/Kg 0.100 75 3,4-Benzofluoranthene 0.07453 mg/Kg 50 - 142 Benzo[k]fluoranthene 0.100 0.07610 mg/Kg 76 49 - 150 1,12-Benzoperylene 0.100 0.07944 mg/Kg 79 50 - 130 Chrysene 0.100 0.07675 mg/Kg 77 51 - 129 Dibenz(a,h)anthracene 0.100 0.07928 mg/Kg 79 50 - 133 Fluoranthene 0.100 0.07546 mg/Kg 75 55 - 127 Fluorene 0.100 0.07324 mg/Kg 73 55 - 127 79 Indeno[1,2,3-cd]pyrene 0.100 0.07856 50 - 148 mg/Kg 1-Methylnaphthalene 0.100 0.07373 mg/Kg 74 54 - 132 2-Methylnaphthalene 0.100 0.07177 72 50 - 127 mg/Kg Naphthalene 68 0.100 0.06807 mg/Kg 51 - 129 Phenanthrene 0.100 0.07125 mg/Kg 71 50 - 122 Pyrene 0.100 0.07863 mg/Kg 79 50 - 134

QC Sample Results

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: 8270C SIM - PAHs (GC/MS SIM) (Continued)

Matrix: Solid

Analysis Batch: 180477

Lab Sample ID: LCS 570-180052/2-A

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 180052

LCS LCS

| Surrogate | %Recovery Qualifie | r Limits |
|-------------------------|--------------------|----------|
| 2-Fluorobiphenyl (Surr) | 72 | 22 - 130 |
| Nitrobenzene-d5 (Surr) | 62 | 20 - 145 |
| p-Terphenyl-d14 (Surr) | 83 | 33 - 147 |

Lab Sample ID: LCSD 570-180052/3-A **Client Sample ID: Lab Control Sample Dup**

Matrix: Solid

Analysis Batch: 180477

Prep Type: Total/NA

88

121

∜

50 - 134

mg/Kg

mg/Kg

Prep Batch: 180052

Spike LCSD LCSD %Rec. **RPD** Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 53 - 125 Acenaphthene 0.100 0.08008 mg/Kg 80 12 20 Acenaphthylene 0.100 0.09620 mg/Kg 96 50 - 12311 20 Anthracene 0.100 0.08318 mg/Kg 83 50 - 132 12 20 1,2-Benzanthracene 0.100 0.08467 mg/Kg 85 50 - 133 11 20 98 20 Benzo[a]pyrene 0.100 0.09753 mg/Kg 50 - 134 12 83 20 3,4-Benzofluoranthene 0.100 0.08334 mg/Kg 50 - 142 11 Benzo[k]fluoranthene 0.100 0.08595 86 49 - 150 12 20 mg/Kg 89 20 1,12-Benzoperylene 0.100 0.08878 mg/Kg 50 - 130 11 Chrysene 87 20 0.100 0.08710 51 - 12913 mg/Kg Dibenz(a,h)anthracene 0.100 0.08909 mg/Kg 89 50 - 133 12 20 Fluoranthene 0.100 0.08398 84 55 - 127 20 mg/Kg 11 Fluorene 0.100 0.08231 mg/Kg 82 55 - 127 12 20 0.100 0.08719 87 50 - 148 10 20 Indeno[1,2,3-cd]pyrene mg/Kg 1-Methylnaphthalene 0.100 0.08322 mg/Kg 83 54 - 132 12 20 2-Methylnaphthalene 0.100 0.08157 82 50 - 127 13 20 mg/Kg Naphthalene 78 20 0.100 0.07793 mg/Kg 51 - 129 13 82 Phenanthrene 0.100 0.08180 mg/Kg 50 - 122 14 20

0.100

0.08793

LCSD LCSD

0.13

| Surrogate | %Recovery Qualifier | Limits |
|-------------------------|---------------------|----------|
| 2-Fluorobiphenyl (Surr) | 77 | 22 - 130 |
| Nitrobenzene-d5 (Surr) | 60 | 20 - 145 |
| p-Terphenyl-d14 (Surr) | 90 | 33 - 147 |

Lab Sample ID: 570-69878-1 MS Client Sample ID: SED-003

Analysis Batch: 180477

Matrix: Solid

Dibenz(a,h)anthracene

Pyrene

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Acenaphthene 0.046 0.284 0.3516 mg/Kg ₩ 108 29 - 137 Acenaphthylene ND 0.284 0.2935 mg/Kg ₩ 104 29 - 131 Anthracene 0.10 0.284 0.4328 mg/Kg 117 26 - 134 ₩ 0.8920 F1 0.28 ₩ 214 1,2-Benzanthracene 0.284 mg/Kg 24 - 150Benzo[a]pyrene 0.45 0.284 1.150 F1 mg/Kg Ö 249 29 - 149 3,4-Benzofluoranthene 0.43 0.284 0.9273 F1 174 21 - 153 mg/Kg ₩ Benzo[k]fluoranthene 0.40 1.045 F1 ₩ 229 28 - 148 0.284 mg/Kg 1,12-Benzoperylene 0.35 0.284 0.7763 F1 mg/Kg Ö 149 20 - 148 0.55 0.284 1.368 F1 288 25 - 145 Chrysene mg/Kg ₩

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20 - 132

Page 36 of 61

0.4690

0.284

20

11

Prep Type: Total/NA

Prep Batch: 180052

QC Sample Results

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: 8270C SIM - PAHs (GC/MS SIM) (Continued)

Lab Sample ID: 570-69878-1 MS

Matrix: Solid

Analysis Batch: 180477

Client Sample ID: SED-003 Prep Type: Total/NA

Prep Batch: 180052

| | Sample | Sample | Spike | MS | MS | | | | %Rec. | |
|------------------------|--------|-----------|-------|--------|-----------|-------|--------------|------|----------|--|
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits | |
| Fluoranthene | 0.84 | | 0.284 | 2.222 | F1 | mg/Kg | * | 487 | 20 - 151 | |
| Fluorene | 0.065 | | 0.284 | 0.3550 | | mg/Kg | ₩ | 102 | 36 - 132 | |
| Indeno[1,2,3-cd]pyrene | 0.21 | | 0.284 | 0.5954 | | mg/Kg | ₩ | 137 | 20 - 154 | |
| 1-Methylnaphthalene | 0.014 | J | 0.284 | 0.2176 | | mg/Kg | ☼ | 72 | 34 - 136 | |
| 2-Methylnaphthalene | 0.035 | J | 0.284 | 0.2326 | | mg/Kg | ₩ | 70 | 29 - 137 | |
| Naphthalene | 0.030 | J | 0.284 | 0.1957 | | mg/Kg | ₽ | 59 | 20 - 150 | |
| Phenanthrene | 0.40 | | 0.284 | 1.498 | F1 | mg/Kg | ₩ | 387 | 20 - 144 | |
| Pyrene | 0.92 | | 0.284 | 1.905 | F1 | mg/Kg | ☼ | 348 | 20 - 150 | |
| | | | | | | | | | | |

MS MS

| Surrogate | %Recovery Qualifie | er Limits |
|-------------------------|--------------------|-----------|
| 2-Fluorobiphenyl (Surr) | 73 | 22 - 130 |
| Nitrobenzene-d5 (Surr) | 45 | 20 - 145 |
| p-Terphenyl-d14 (Surr) | 92 | 33 - 147 |

Lab Sample ID: 570-69878-1 MSD

Matrix: Solid

Analysis Batch: 180477

Client Sample ID: SED-003 Prep Type: Total/NA Prep Batch: 180052

| Analysis Batch: 180477 | | | | | | | | | Prep Ba | atch: 18 | 80052 |
|------------------------|--------|-----------|-------|--------|-----------|-------|---------|------|----------|----------|-------|
| | Sample | Sample | Spike | MSD | MSD | | | | %Rec. | | RPD |
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits | RPD | Limit |
| Acenaphthene | 0.046 | J | 0.283 | 0.3174 | | mg/Kg | <u></u> | 96 | 29 - 137 | 10 | 28 |
| Acenaphthylene | ND | | 0.283 | 0.2985 | | mg/Kg | ☼ | 105 | 29 - 131 | 2 | 32 |
| Anthracene | 0.10 | | 0.283 | 0.3737 | | mg/Kg | ☼ | 97 | 26 - 134 | 15 | 27 |
| 1,2-Benzanthracene | 0.28 | | 0.283 | 0.5984 | F2 | mg/Kg | ☼ | 111 | 24 - 150 | 39 | 24 |
| Benzo[a]pyrene | 0.45 | | 0.283 | 0.8991 | F1 F2 | mg/Kg | ☼ | 160 | 29 - 149 | 25 | 22 |
| 3,4-Benzofluoranthene | 0.43 | | 0.283 | 0.5702 | F2 | mg/Kg | ☼ | 48 | 21 - 153 | 48 | 26 |
| Benzo[k]fluoranthene | 0.40 | | 0.283 | 0.8586 | F1 | mg/Kg | ☼ | 163 | 28 - 148 | 20 | 26 |
| 1,12-Benzoperylene | 0.35 | | 0.283 | 0.6666 | | mg/Kg | ₩ | 110 | 20 - 148 | 15 | 27 |
| Chrysene | 0.55 | | 0.283 | 0.8392 | F2 | mg/Kg | ☼ | 102 | 25 - 145 | 48 | 28 |
| Dibenz(a,h)anthracene | 0.13 | | 0.283 | 0.3852 | | mg/Kg | ☼ | 92 | 20 - 132 | 20 | 26 |
| Fluoranthene | 0.84 | | 0.283 | 1.267 | F2 | mg/Kg | ☼ | 151 | 20 - 151 | 55 | 26 |
| Fluorene | 0.065 | | 0.283 | 0.3132 | | mg/Kg | ☼ | 88 | 36 - 132 | 13 | 27 |
| Indeno[1,2,3-cd]pyrene | 0.21 | | 0.283 | 0.5009 | | mg/Kg | ☼ | 104 | 20 - 154 | 17 | 25 |
| 1-Methylnaphthalene | 0.014 | J | 0.283 | 0.2521 | | mg/Kg | ₩ | 84 | 34 - 136 | 15 | 29 |
| 2-Methylnaphthalene | 0.035 | J | 0.283 | 0.2765 | | mg/Kg | ₩ | 85 | 29 - 137 | 17 | 31 |
| Naphthalene | 0.030 | J | 0.283 | 0.2593 | | mg/Kg | ☼ | 81 | 20 - 150 | 28 | 33 |
| Phenanthrene | 0.40 | | 0.283 | 0.7782 | F2 | mg/Kg | ☼ | 133 | 20 - 144 | 63 | 27 |
| Pyrene | 0.92 | | 0.283 | 1.265 | F2 | mg/Kg | ☼ | 123 | 20 - 150 | 40 | 32 |

| כ |
|---|
| 0 |

| Surrogate | %Recovery Qualit | fier Limits |
|-------------------------|------------------|---------------------|
| 2-Fluorobiphenyl (Surr) | 73 | 22 - 130 |
| Nitrobenzene-d5 (Surr) | 45 | 20 - 145 |
| p-Terphenyl-d14 (Surr) | 90 | 33 ₋ 147 |

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Method: Organotins SIM - Organotins (GC/MS SIM)

Lab Sample ID: MB 570-179948/1-A

Matrix: Solid

Analysis Batch: 181787

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 179948

MB MB Result Qualifier RL **MDL** Unit Analyzed Dil Fac **Prepared** 09/17/21 12:08 09/24/21 20:50 ND 3.0 1.5 ug/Kg

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 10 - 120 09/17/21 12:08 09/24/21 20:50 Tripentyltin 109

Lab Sample ID: LCS 570-179948/2-A **Client Sample ID: Lab Control Sample**

Matrix: Solid

Analyte

Tributyltin

Analysis Batch: 181787

Prep Type: Total/NA **Prep Batch: 179948** LCS LCS %Rec. Spike

Analyte Added Result Qualifier Unit D %Rec Limits Tetrabutyltin 100 89.50 ug/Kg 89 10 - 153 100 Tributyltin 67.87 ug/Kg 68 10 - 126

LCS LCS

Surrogate %Recovery Qualifier Limits 10 - 120 Tripentyltin 105

Lab Sample ID: LCSD 570-179948/3-A

Matrix: Solid

Analysis Batch: 181787

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Prep Batch: 179948

Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Unit D %Rec Limits RPD Limit Analyte Tetrabutyltin 100 109.9 10 - 153 30 ug/Kg 110 20 Tributyltin 100 75.63 ug/Kg 76 10 - 126 11 30

LCSD LCSD

%Recovery Qualifier Surrogate Limits Tripentyltin 10 - 120 119

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-179051/1-A

Matrix: Solid

Analysis Batch: 179416

Client Sample ID: Method Blank

Prep Type: Total/NA **Prep Batch: 179051**

MB MB

| | 1410 | IVID | | | | | | | |
|----------|--------|-----------|-----|-----|-------|---|----------------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| C6 as C6 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C7 as C7 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C8 as C8 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C9-C10 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C11-C12 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C13-C14 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C15-C16 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C17-C18 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C19-C20 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C21-C22 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C23-C24 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C25-C28 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C29-C32 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |
| C33-C36 | ND | | 5.0 | 3.8 | mg/Kg | | 09/14/21 12:43 | 09/16/21 14:32 | 1 |

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Page 38 of 61

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 570-179051/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 179416**

Prep Batch: 179051 MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac C37-C40 ND 5.0 3.8 mg/Kg C41-C44 ND 5.0 3.8 mg/Kg 09/14/21 12:43 09/16/21 14:32 C6-C44 ND 5.0 09/14/21 12:43 09/16/21 14:32 3.8 mg/Kg MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac n-Octacosane (Surr) 60 - 138 09/14/21 12:43 09/16/21 14:32 115

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 570-179051/2-A **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 179136 Prep Batch: 179051** Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits **Diesel Range Organics** 400 451.9 mg/Kg [C10-C28] LCS LCS Surrogate %Recovery Qualifier Limits n-Octacosane (Surr) 60 - 138 105

Lab Sample ID: LCSD 570-179051/3-A **Client Sample ID: Lab Control Sample Dup Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 179136 Prep Batch: 179051** Spike LCSD LCSD RPD %Rec. Added Result Qualifier Unit %Rec Limits **RPD** Limit **Diesel Range Organics** 400 464.0 mg/Kg 116 80 - 130

LCSD LCSD Surrogate %Recovery Qualifier Limits 60 - 138 n-Octacosane (Surr)

[C10-C28]

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 570-180082/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 181420** Prep Batch: 180082

| | MB | MB | | | | | | | |
|-----------|--------|-----------|-----|-------|-------|---|----------------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| 2,4'-DDD | ND | | 1.0 | 0.064 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:22 | 1 |
| 2,4'-DDE | ND | | 2.0 | 0.097 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:22 | 1 |
| 2,4'-DDT | ND | | 1.0 | 0.092 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:22 | 1 |
| 4,4'-DDD | ND | | 1.0 | 0.50 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:22 | 1 |
| 4,4'-DDE | ND | | 1.0 | 0.071 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:22 | 1 |
| 4,4'-DDT | ND | | 1.0 | 0.18 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:22 | 1 |
| Chlordane | ND | | 5.0 | 0.33 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:22 | 1 |
| | MD | MD | | | | | | | |

| | MB MB | | | | |
|-------------------------------|---------------------|----------|----------------|----------------|---------|
| Surrogate | %Recovery Qualifier | Limits | Prepared | Analyzed | Dil Fac |
| Tetrachloro-m-xylene | 87 | 20 - 131 | 09/17/21 20:21 | 09/23/21 18:22 | 1 |
| DCB Decachlorobiphenyl (Surr) | 97 | 20 - 180 | 09/17/21 20:21 | 09/23/21 18:22 | 1 |

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Page 39 of 61

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

100 100

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

92

103

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 180082

| | Эрікі | LUS | LUS | | | | MREC. | |
|----------|-------|----------|-----------|-------|---|------|----------|--|
| Analyte | Adde | d Result | Qualifier | Unit | D | %Rec | Limits | |
| 4,4'-DDD | 5.0 | 6.038 | | ug/Kg | | 121 | 54 - 150 | |
| 4,4'-DDE | 5.0 | 5.737 | | ug/Kg | | 115 | 49 - 146 | |
| 4,4'-DDT | 5.0 | 5.986 | | ug/Kg | | 120 | 52 - 147 | |

Snika

LCS LCS Surrogate %Recovery Qualifier Limits Tetrachloro-m-xylene 99 20 - 131 DCB Decachlorobiphenyl (Surr) 122 20 - 180

Lab Sample ID: LCS 570-180082/2-A

Lab Sample ID: LCSD 570-180082/3-A

Matrix: Solid

Matrix: Solid

Analysis Batch: 181420

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 180082

Analysis Batch: 181420 Spike LCSD LCSD %Rec. **RPD** Limits Added Result Qualifier RPD Limit Analyte Unit D %Rec 4,4'-DDD 5.00 5.165 ug/Kg 103 54 - 150 16 29 4,4'-DDE 5.00 4.953 ug/Kg 99 49 - 146 15 28 4,4'-DDT 5.00 32 5.132 ug/Kg 103 52 - 147 15

LCSD LCSD %Recovery Qualifier Surrogate Limits Tetrachloro-m-xylene 20 - 131

20 - 180

Client Sample ID: SED-003 Lab Sample ID: 570-69878-1 MS

Matrix: Solid

DCB Decachlorobiphenyl (Surr)

Analysis Batch: 181420

Prep Type: Total/NA Prep Batch: 180082

| | Sample | Sample | Spike | MS | MS | | | | %Rec. | |
|----------|--------|-----------|-------|--------|-----------|-------|---|------|----------|--|
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits | |
| 4,4'-DDD | 18 | F1 | 5.01 | 29.98 | F1 | ug/Kg | | 239 | 17 - 180 | |
| 4,4'-DDE | 21 | | 5.01 | 36.19 | 4 | ug/Kg | | 310 | 20 - 180 | |
| 4,4'-DDT | ND | F1 F2 | 5.01 | 10.17 | F1 p | ug/Kg | | 203 | 10 - 180 | |
| , | | | | | • | 59 | | | | |

MS MS %Recovery Qualifier Limits 72 p 20 - 131 138 20 - 180

Lab Sample ID: 570-69878-1 MSD Client Sample ID: SED-003

Matrix: Solid

Tetrachloro-m-xylene

Surrogate

Analysis Batch: 181420

DCB Decachlorobiphenyl (Surr)

Prep Type: Total/NA

Prep Batch: 180082

| , | | | | | | | | | | | | |
|----------|--------|-----------|-------|--------|-----------|-------|---|------|----------|-----|-------|--|
| | Sample | Sample | Spike | MSD | MSD | | | | %Rec. | | RPD | |
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits | RPD | Limit | |
| 4,4'-DDD | 18 | F1 | 5.01 | 26.62 | | ug/Kg | | 172 | 17 - 180 | 12 | 40 | |
| 4,4'-DDE | 21 | | 5.01 | 28.85 | 4 | ug/Kg | | 163 | 20 - 180 | 23 | 40 | |
| 4,4'-DDT | ND | F1 F2 | 5.01 | 1.779 | J p F2 | ug/Kg | | 36 | 10 - 180 | 140 | 40 | |
| | | | | | | | | | | | | |

| | MSD | MSD | |
|-------------------------------|-----------|-----------|----------|
| Surrogate | %Recovery | Qualifier | Limits |
| Tetrachloro-m-xylene | 84 | p | 20 - 131 |
| DCB Decachlorobiphenyl (Surr) | 143 | p | 20 - 180 |

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Page 40 of 61

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 570-180082/1-A

Matrix: Solid

Analysis Batch: 181261

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 180082

| | INIB | MB | | | | | | | |
|--------------|--------|-----------|----|-----|-------|---|----------------|----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Aroclor-1016 | ND | | 10 | 5.5 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:11 | 1 |
| Aroclor-1221 | ND | | 10 | 5.5 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:11 | 1 |
| Aroclor-1232 | ND | | 10 | 5.5 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:11 | 1 |
| Aroclor-1242 | ND | | 10 | 5.5 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:11 | 1 |
| Aroclor-1248 | ND | | 10 | 5.5 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:11 | 1 |
| Aroclor-1254 | ND | | 10 | 5.0 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:11 | 1 |
| Aroclor-1260 | ND | | 10 | 5.0 | ug/Kg | | 09/17/21 20:21 | 09/23/21 18:11 | 1 |
| | | | | | | | | | |

MB MB

MD MD

| Surrogate | %Recovery Qualifi | er Limits | Prepared | Analyzed | Dil Fac |
|-------------------------------|-------------------|-----------|----------------|----------------|---------|
| DCB Decachlorobiphenyl (Surr) | 89 | 20 - 155 | 09/17/21 20:21 | 09/23/21 18:11 | 1 |
| Tetrachloro-m-xylene (Surr) | 77 | 25 - 126 | 09/17/21 20:21 | 09/23/21 18:11 | 1 |

Lab Sample ID: LCS 570-180082/6-A

Matrix: Solid

Analysis Batch: 181261

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 180082

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Aroclor-1016 20.0 21.89 50 - 142 ug/Kg 109 Aroclor-1260 20.0 21.28 ug/Kg 106 50 - 150

LCS LCS

| Surrogate | %Recovery Qualifier | Limits |
|-------------------------------|---------------------|----------|
| DCB Decachlorobiphenyl (Surr) | 71 | 20 - 155 |
| Tetrachloro-m-xylene (Surr) | 74 | 25 - 126 |

Lab Sample ID: LCSD 570-180082/7-A

Matrix: Solid

Analysis Batch: 181261

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 180082

LCSD LCSD RPD %Rec. Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Aroclor-1016 20.0 23.10 ug/Kg 116 50 - 142 5 30 Aroclor-1260 20.0 22.64 ug/Kg 113 50 - 150 30

LCSD LCSD

| Surrogate | %Recovery | Qualifier | Limits |
|-------------------------------|-----------|-----------|----------|
| DCB Decachlorobiphenyl (Surr) | 76 | | 20 - 155 |
| Tetrachloro-m-xvlene (Surr) | 82 | | 25 - 126 |

Lab Sample ID: 570-69878-1 MS

Matrix: Solid

Analysis Batch: 181261

Client Sample ID: SED-003

Prep Type: Total/NA

Prep Batch: 180082 %Rac

| | Sample | Sample | Spike | IVIO | IVIO | | | | /oixec. |
|--------------|--------|-----------|-------|--------|-----------|-------|-----------|------|----------|
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits |
| Aroclor-1016 | ND | F2 F1 | 57.3 | 246.0 | F1 | ug/Kg | — <u></u> | 430 | 20 - 175 |
| Aroclor-1260 | 180 | F1 | 57.3 | 411.8 | F1 | ug/Kg | ₽ | 409 | 20 - 180 |

MS MS

| Surrogate | %Recovery | Qualifier | Limits |
|-------------------------------|-----------|-----------|----------|
| DCB Decachlorobiphenyl (Surr) | 61 | | 20 - 155 |
| Tetrachloro-m-xylene (Surr) | 55 | | 25 - 126 |

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Page 41 of 61

Client: WGR Southwest Inc Job ID: 570-69878-1

Project/Site: Tesoro LA Refinery Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 570-69878-1 MSD

Matrix: Solid

Analysis Batch: 181261

Client Sample ID: SED-003

Prep Type: Total/NA

Prep Batch: 180082 %Rec. **RPD**

Sample Sample Spike MSD MSD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit D Aroclor-1016 ND F2 F1 57.3 452.3 F1 F2 ug/Kg 789 20 - 175 59 40 Aroclor-1260 180 F1 57.3 281.7 F1 ug/Kg 181 20 - 180 38 40

MSD MSD

Surrogate %Recovery Qualifier Limits DCB Decachlorobiphenyl (Surr) 80 20 - 155 Tetrachloro-m-xylene (Surr) 68 25 - 126

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 570-181268/1-A ^20 **Client Sample ID: Method Blank**

Matrix: Solid

Analysis Batch: 181377

Prep Type: Total/NA

Prep Batch: 181268

MB MB **Analyte** Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 09/23/21 08:25 09/23/21 13:43 Cadmium ND 1.00 0.450 mg/Kg 20 Chromium ND 2.00 0.300 mg/Kg 09/23/21 08:25 09/23/21 13:43 20 ND 1.00 0.269 mg/Kg 09/23/21 08:25 09/23/21 13:43 20 Copper Lead ND 0.215 mg/Kg 20 1.00 09/23/21 08:25 09/23/21 13:43 Nickel ND 1.00 0.270 mg/Kg 09/23/21 08:25 09/23/21 13:43 20 Zinc ND 5.00 4.62 mg/Kg 09/23/21 08:25 09/23/21 13:43 20

Lab Sample ID: LCS 570-181268/2-A ^20

Matrix: Solid

Analysis Batch: 181377

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 181268

| | Spike | LCS | LCS | | | | %Rec. | |
|----------|-------|--------|-----------|-------|---|------|----------|--|
| Analyte | Added | Result | Qualifier | Unit | D | %Rec | Limits | |
| Cadmium | 25.8 | 26.28 | | mg/Kg | | 102 | 80 - 120 | |
| Chromium | 25.8 | 24.41 | | mg/Kg | | 95 | 80 - 120 | |
| Copper | 25.8 | 25.44 | | mg/Kg | | 99 | 80 - 120 | |
| Lead | 25.8 | 25.08 | | mg/Kg | | 97 | 80 - 120 | |
| Nickel | 25.8 | 25.86 | | mg/Kg | | 100 | 80 - 120 | |
| Zinc | 25.8 | 27.08 | | mg/Kg | | 105 | 80 - 120 | |

Lab Sample ID: LCSD 570-181268/3-A ^20

Matrix: Solid

Analysis Batch: 181377

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA **Prep Batch: 181268**

| | %Rec. | RPD |
|------------|---|--|
| nit D %Rec | Limits R | PD Limit |
| ng/Kg 102 | 80 - 120 | 3 20 |
| ng/Kg 97 | 80 - 120 | 0 20 |
| ng/Kg 99 | 80 - 120 | 2 20 |
| ng/Kg 98 | 80 - 120 | 2 20 |
| ng/Kg 105 | 80 - 120 | 2 20 |
| ng/Kg 104 | 80 - 120 | 4 20 |
| וכ וכ | g/Kg 102 g/Kg 97 g/Kg 99 g/Kg 98 g/Kg 105 | hit D %Rec Limits R g/Kg 102 80 - 120 g/Kg 97 80 - 120 g/Kg 99 80 - 120 g/Kg 98 80 - 120 g/Kg 105 80 - 120 |

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-69878-1 MS

Matrix: Solid

Analysis Batch: 181377

Client Sample ID: SED-003

Prep Type: Total/NA **Prep Batch: 181268**

| , | Sample | Sample | Spike | MS | MS | | | | %Rec. | |
|----------|--------|-----------|-------|--------|-----------|-------|---------|------|----------|--|
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits | |
| Cadmium | ND | | 69.0 | 73.75 | | mg/Kg | <u></u> | 107 | 85 - 121 | |
| Chromium | 54.1 | | 69.0 | 166.2 | | mg/Kg | ☼ | 162 | 20 - 182 | |
| Copper | 134 | F1 | 69.0 | 284.8 | F1 | mg/Kg | ₩ | 218 | 25 - 157 | |
| Lead | 76.8 | F1 | 69.0 | 193.0 | F1 | mg/Kg | ₩ | 168 | 62 - 134 | |
| Nickel | 19.0 | | 69.0 | 95.37 | | mg/Kg | ₩ | 111 | 46 - 154 | |
| Zinc | 565 | | 69.0 | 863.4 | 4 | ma/Ka | ÷Ċ: | 432 | 23 - 173 | |

Lab Sample ID: 570-69878-1 MSD Client Sample ID: SED-003

Matrix: Solid

Prep Type: Total/NA

| Analysis Batch: 1813// | | | | | | | | | Prep Ba | itcn: 18 | 31268 |
|------------------------|--------|-----------|-------|--------|-----------|-------|--------------|------|----------|----------|-------|
| | Sample | Sample | Spike | MSD | MSD | | | | %Rec. | | RPD |
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits | RPD | Limit |
| Cadmium | ND | | 73.7 | 78.86 | | mg/Kg | * | 107 | 85 - 121 | 7 | 12 |
| Chromium | 54.1 | | 73.7 | 176.7 | | mg/Kg | ₩ | 166 | 20 - 182 | 6 | 15 |
| Copper | 134 | F1 | 73.7 | 295.1 | F1 | mg/Kg | ₩ | 218 | 25 - 157 | 4 | 22 |
| Lead | 76.8 | F1 | 73.7 | 205.8 | F1 | mg/Kg | ₩ | 175 | 62 - 134 | 6 | 23 |
| Nickel | 19.0 | | 73.7 | 102.3 | | mg/Kg | ₩ | 113 | 46 - 154 | 7 | 15 |
| Zinc | 565 | | 73.7 | 901.7 | 4 | mg/Kg | ₩ | 457 | 23 - 173 | 4 | 18 |
| _ | | | | | | | | | | | |

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 570-181297/1-A

Matrix: Solid

Analysis Batch: 181371

Client Sample ID: Method Blank

Prep Type: Total/NA **Prep Batch: 181297**

Prep Type: Total/NA

RL **MDL** Unit Analyte Result Qualifier Prepared Analyzed Dil Fac 0.0820 09/23/21 09:54 09/23/21 14:20 Mercury ND 0.0133 mg/Kg

Lab Sample ID: LCS 570-181297/2-A Client Sample ID: Lab Control Sample **Matrix: Solid**

MB MB

Analysis Batch: 181371

Prep Type: Total/NA **Prep Batch: 181297**

Client Sample ID: Lab Control Sample Dup

%Rec.

LCS LCS Spike Added Analyte Result Qualifier Unit D %Rec Limits 0.833 Mercury 0.8145 mg/Kg 98 85 - 121

Lab Sample ID: LCSD 570-181297/3-A

Matrix: Solid

Analysis Batch: 181371

Prep Batch: 181297 Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Limits RPD Analyte Unit D %Rec Limit 0.847 Mercury 0.8272 mg/Kg 98 85 - 121

Lab Sample ID: 570-69878-1 MS

Matrix: Solid

Analysis Batch: 181371

Client Sample ID: SED-003 Prep Type: Total/NA **Prep Batch: 181297** %Rec.

Sample Sample Spike MS MS **Analyte** Result Qualifier Added Result Qualifier Unit D %Rec Limits Mercury 0.222 J 2.38 2.235 mg/Kg 85 71 - 137

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Client: WGR Southwest Inc Job ID: 570-69878-1

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: 570-69878-1 MSD Client Sample ID: SED-003 **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 181371

Prep Batch: 181297 Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Result Qualifier Added %Rec Limits RPD Limit Analyte Unit D Mercury 0.222 J 2.42 2.312 mg/Kg 86 71 - 137 3 14

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-178845/64 **Client Sample ID: Method Blank** Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 178845

Project/Site: Tesoro LA Refinery

MB MB

Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 500 $\overline{\mathsf{ND}}$ 174 mg/Kg 09/15/21 10:32 Carbon, Total Organic

Lab Sample ID: MB 570-178845/96 Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 178845

MB MB

Result Qualifier RL **MDL** Unit Dil Fac Analyte Prepared Analyzed 500 Carbon, Total Organic ND 174 mg/Kg 09/15/21 10:32

Lab Sample ID: LCS 570-178845/65 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 178845

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Carbon, Total Organic 30000 27050 mq/Kq 90 80 - 120

Lab Sample ID: LCS 570-178845/97 **Client Sample ID: Lab Control Sample**

Matrix: Solid

Analysis Batch: 178845

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit Limits mg/Kg Carbon, Total Organic 29900 26620 80 - 120

Lab Sample ID: LCSD 570-178845/66 Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Analysis Batch: 178845

Spike LCSD LCSD RPD %Rec. Added Limit Analyte Result Qualifier Unit %Rec Limits **RPD** Carbon, Total Organic 30100 28950 96 80 - 120 mg/Kg

Lab Sample ID: LCSD 570-178845/98 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 178845

RPD Spike LCSD LCSD %Rec. Added Result Qualifier Unit %Rec Limits **RPD** Limit 29900 27960 Carbon, Total Organic mg/Kg 80 - 120

Eurofins Calscience LLC

Prep Type: Total/NA

Prep Type: Total/NA

QC Sample Results

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Method: Moisture - Percent Moisture

Lab Sample ID: 570-69878-2 DU Client Sample ID: SED-004 **Prep Type: Total/NA**

Matrix: Solid

| Analysis Batch: 179106 | | | | | | | | • | |
|------------------------|--------|-----------|----------|-----------|------|---|------|-----|-------|
| | Sample | Sample | DU | DU | | | | | RPD |
| Analyte | Result | Qualifier | Result | Qualifier | Unit | D | | RPD | Limit |
| Percent Moisture | 49.8 | | 46.5 | | % | | | 7 | 10 |

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

GC/MS Semi VOA

Cleanup Batch: 178989

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------|------------------|-----------|--------|------------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-2 | SED-004 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-3 | SED-005 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-4 | SED-006 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-5 | SED-007 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |

Prep Batch: 179948

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|----------------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | Organotin Prep | 178989 |
| 570-69878-2 | SED-004 | Total/NA | Solid | Organotin Prep | 178989 |
| 570-69878-3 | SED-005 | Total/NA | Solid | Organotin Prep | 178989 |
| 570-69878-4 | SED-006 | Total/NA | Solid | Organotin Prep | 178989 |
| 570-69878-5 | SED-007 | Total/NA | Solid | Organotin Prep | 178989 |
| MB 570-179948/1-A | Method Blank | Total/NA | Solid | Organotin Prep | |
| LCS 570-179948/2-A | Lab Control Sample | Total/NA | Solid | Organotin Prep | |
| LCSD 570-179948/3-A | Lab Control Sample Dup | Total/NA | Solid | Organotin Prep | |

Prep Batch: 180052

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 3541 | 178989 |
| MB 570-180052/1-A | Method Blank | Total/NA | Solid | 3541 | |
| LCS 570-180052/2-A | Lab Control Sample | Total/NA | Solid | 3541 | |
| LCSD 570-180052/3-A | Lab Control Sample Dup | Total/NA | Solid | 3541 | |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 3541 | 178989 |

Analysis Batch: 180477

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|-----------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 8270C SIM | 180052 |
| MB 570-180052/1-A | Method Blank | Total/NA | Solid | 8270C SIM | 180052 |
| LCS 570-180052/2-A | Lab Control Sample | Total/NA | Solid | 8270C SIM | 180052 |
| LCSD 570-180052/3-A | Lab Control Sample Dup | Total/NA | Solid | 8270C SIM | 180052 |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 8270C SIM | 180052 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 8270C SIM | 180052 |

Analysis Batch: 181003

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|-----------|------------|
| 570-69878-2 | SED-004 | Total/NA | Solid | 8270C SIM | 180052 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 8270C SIM | 180052 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 8270C SIM | 180052 |

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Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

GC/MS Semi VOA (Continued)

Analysis Batch: 181003 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|-----------|------------|
| 570-69878-5 | SED-007 | Total/NA | Solid | 8270C SIM | 180052 |

Analysis Batch: 181787

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|----------------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | Organotins SIM | 179948 |
| 570-69878-2 | SED-004 | Total/NA | Solid | Organotins SIM | 179948 |
| 570-69878-3 | SED-005 | Total/NA | Solid | Organotins SIM | 179948 |
| 570-69878-4 | SED-006 | Total/NA | Solid | Organotins SIM | 179948 |
| 570-69878-5 | SED-007 | Total/NA | Solid | Organotins SIM | 179948 |
| MB 570-179948/1-A | Method Blank | Total/NA | Solid | Organotins SIM | 179948 |
| LCS 570-179948/2-A | Lab Control Sample | Total/NA | Solid | Organotins SIM | 179948 |
| LCSD 570-179948/3-A | Lab Control Sample Dup | Total/NA | Solid | Organotins SIM | 179948 |

GC Semi VOA

Cleanup Batch: 178989

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------|------------------|-----------|--------|------------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-2 | SED-004 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-3 | SED-005 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-4 | SED-006 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-5 | SED-007 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |

Prep Batch: 179051

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 3550C | 178989 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 3550C | 178989 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 3550C | 178989 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 3550C | 178989 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 3550C | 178989 |
| MB 570-179051/1-A | Method Blank | Total/NA | Solid | 3550C | |
| LCS 570-179051/2-A | Lab Control Sample | Total/NA | Solid | 3550C | |
| LCSD 570-179051/3-A | Lab Control Sample Dup | Total/NA | Solid | 3550C | |

Analysis Batch: 179136

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method P | rep Batch |
|---------------------|------------------------|-----------|--------|----------|-----------|
| LCS 570-179051/2-A | Lab Control Sample | Total/NA | Solid | 8015B | 179051 |
| LCSD 570-179051/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B | 179051 |

Analysis Batch: 179416

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 8015B | 179051 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 8015B | 179051 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 8015B | 179051 |

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Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

GC Semi VOA (Continued)

Analysis Batch: 179416 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------|-----------|--------|--------|------------|
| 570-69878-4 | SED-006 | Total/NA | Solid | 8015B | 179051 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 8015B | 179051 |
| MB 570-179051/1-A | Method Blank | Total/NA | Solid | 8015B | 179051 |

Prep Batch: 180082

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 3541 | 178989 |
| MB 570-180082/1-A | Method Blank | Total/NA | Solid | 3541 | |
| LCS 570-180082/2-A | Lab Control Sample | Total/NA | Solid | 3541 | |
| LCS 570-180082/6-A | Lab Control Sample | Total/NA | Solid | 3541 | |
| LCSD 570-180082/3-A | Lab Control Sample Dup | Total/NA | Solid | 3541 | |
| LCSD 570-180082/7-A | Lab Control Sample Dup | Total/NA | Solid | 3541 | |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 3541 | 178989 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 3541 | 178989 |

Analysis Batch: 181261

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 8082 | 180082 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 8082 | 180082 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 8082 | 180082 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 8082 | 180082 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 8082 | 180082 |
| MB 570-180082/1-A | Method Blank | Total/NA | Solid | 8082 | 180082 |
| LCS 570-180082/6-A | Lab Control Sample | Total/NA | Solid | 8082 | 180082 |
| LCSD 570-180082/7-A | Lab Control Sample Dup | Total/NA | Solid | 8082 | 180082 |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 8082 | 180082 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 8082 | 180082 |

Analysis Batch: 181420

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 8081A | 180082 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 8081A | 180082 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 8081A | 180082 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 8081A | 180082 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 8081A | 180082 |
| MB 570-180082/1-A | Method Blank | Total/NA | Solid | 8081A | 180082 |
| LCS 570-180082/2-A | Lab Control Sample | Total/NA | Solid | 8081A | 180082 |
| LCSD 570-180082/3-A | Lab Control Sample Dup | Total/NA | Solid | 8081A | 180082 |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 8081A | 180082 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 8081A | 180082 |

Client: WGR Southwest Inc
Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

Metals

Cleanup Batch: 178989

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------|------------------|-----------|--------|------------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-2 | SED-004 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-3 | SED-005 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-4 | SED-006 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-5 | SED-007 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |

Prep Batch: 181268

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 3050B | 178989 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 3050B | 178989 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 3050B | 178989 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 3050B | 178989 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 3050B | 178989 |
| MB 570-181268/1-A ^20 | Method Blank | Total/NA | Solid | 3050B | |
| LCS 570-181268/2-A ^20 | Lab Control Sample | Total/NA | Solid | 3050B | |
| LCSD 570-181268/3-A ^20 | Lab Control Sample Dup | Total/NA | Solid | 3050B | |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 3050B | 178989 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 3050B | 178989 |

Prep Batch: 181297

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 7471A | 178989 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 7471A | 178989 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 7471A | 178989 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 7471A | 178989 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 7471A | 178989 |
| MB 570-181297/1-A | Method Blank | Total/NA | Solid | 7471A | |
| LCS 570-181297/2-A | Lab Control Sample | Total/NA | Solid | 7471A | |
| LCSD 570-181297/3-A | Lab Control Sample Dup | Total/NA | Solid | 7471A | |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 7471A | 178989 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 7471A | 178989 |

Analysis Batch: 181371

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 7471A | 181297 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 7471A | 181297 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 7471A | 181297 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 7471A | 181297 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 7471A | 181297 |
| MB 570-181297/1-A | Method Blank | Total/NA | Solid | 7471A | 181297 |
| LCS 570-181297/2-A | Lab Control Sample | Total/NA | Solid | 7471A | 181297 |
| LCSD 570-181297/3-A | Lab Control Sample Dup | Total/NA | Solid | 7471A | 181297 |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 7471A | 181297 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 7471A | 181297 |

Page 49 of 61

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9/27/2021

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Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Metals

Analysis Batch: 181377

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 6020 | 181268 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 6020 | 181268 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 6020 | 181268 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 6020 | 181268 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 6020 | 181268 |
| MB 570-181268/1-A ^20 | Method Blank | Total/NA | Solid | 6020 | 181268 |
| LCS 570-181268/2-A ^20 | Lab Control Sample | Total/NA | Solid | 6020 | 181268 |
| LCSD 570-181268/3-A ^20 | Lab Control Sample Dup | Total/NA | Solid | 6020 | 181268 |
| 570-69878-1 MS | SED-003 | Total/NA | Solid | 6020 | 181268 |
| 570-69878-1 MSD | SED-003 | Total/NA | Solid | 6020 | 181268 |

General Chemistry

Analysis Batch: 178845

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|------------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | 9060A | 178989 |
| 570-69878-2 | SED-004 | Total/NA | Solid | 9060A | 178989 |
| 570-69878-3 | SED-005 | Total/NA | Solid | 9060A | 178989 |
| 570-69878-4 | SED-006 | Total/NA | Solid | 9060A | 178989 |
| 570-69878-5 | SED-007 | Total/NA | Solid | 9060A | 178989 |
| MB 570-178845/64 | Method Blank | Total/NA | Solid | 9060A | |
| MB 570-178845/96 | Method Blank | Total/NA | Solid | 9060A | |
| LCS 570-178845/65 | Lab Control Sample | Total/NA | Solid | 9060A | |
| LCS 570-178845/97 | Lab Control Sample | Total/NA | Solid | 9060A | |
| LCSD 570-178845/66 | Lab Control Sample Dup | Total/NA | Solid | 9060A | |
| LCSD 570-178845/98 | Lab Control Sample Dup | Total/NA | Solid | 9060A | |

Cleanup Batch: 178989

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|------------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-2 | SED-004 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-3 | SED-005 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-4 | SED-006 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |
| 570-69878-5 | SED-007 | Total/NA | Solid | Homogenize | |
| | | | | Prep | |

Analysis Batch: 179106

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------|------------------|-----------|--------|----------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | Moisture | |
| 570-69878-2 | SED-004 | Total/NA | Solid | Moisture | |
| 570-69878-3 | SED-005 | Total/NA | Solid | Moisture | |
| 570-69878-4 | SED-006 | Total/NA | Solid | Moisture | |
| 570-69878-5 | SED-007 | Total/NA | Solid | Moisture | |
| 570-69878-2 DU | SED-004 | Total/NA | Solid | Moisture | |

Page 50 of 61

Client: WGR Southwest Inc
Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

Geotechnical

Analysis Batch: 181620

| Lab Sample | ID Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------|---------------------|-----------|--------|--------|------------|
| 570-69878-1 | SED-003 | Total/NA | Solid | D4464 | |
| 570-69878-2 | SED-004 | Total/NA | Solid | D4464 | |
| 570-69878-3 | SED-005 | Total/NA | Solid | D4464 | |
| 570-69878-4 | SED-006 | Total/NA | Solid | D4464 | |
| 570-69878-5 | SED-007 | Total/NA | Solid | D4464 | |

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Job ID: 570-69878-1

Client: WGR Southwest Inc Project/Site: Tesoro LA Refinery

Client Sample ID: SED-003

Lab Sample ID: 570-69878-1 Date Collected: 09/09/21 17:55

Matrix: Solid

Date Received: 09/13/21 13:50

| | Batch | Batch | | Dil | Initial | Final | Batch | Prepared | | |
|--------------------|-----------|-----------------|-----|--------|----------|----------|--------|----------------|---------|-------|
| Prep Type | Type | Method | Run | Factor | Amount | Amount | Number | or Analyzed | Analyst | Lab |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.12 g | 2 mL | 180052 | 09/17/21 18:49 | USUL | ECL 1 |
| Total/NA | Analysis | 8270C SIM | | 2 | | | 180477 | 09/20/21 21:52 | AJ2Q | ECL 1 |
| | Instrumer | nt ID: GCMSAAA | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | Organotin Prep | | | 10.04 g | 5 mL | 179948 | 09/17/21 12:08 | UWEZ | ECL 1 |
| Total/NA | Analysis | Organotins SIM | | 1 | | | 181787 | 09/24/21 22:36 | AJ2Q | ECL 1 |
| | Instrumer | nt ID: GCMSY | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3550C | | | 10.23 g | 10 mL | 179051 | 09/14/21 12:44 | UYUW | ECL 1 |
| Total/NA | Analysis | 8015B | | 1 | - | | 179416 | 09/16/21 08:37 | N1A | ECL 1 |
| | Instrumer | nt ID: GC47 | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 19.99 g | 2 mL | 180082 | 09/17/21 20:21 | UM1W | ECL 1 |
| Total/NA | Analysis | 8081A | | 5 | · · | | 181420 | 09/23/21 19:19 | UHHN | ECL 1 |
| | Instrumer | nt ID: GC44 | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 19.99 g | 2 mL | 180082 | 09/17/21 20:21 | UM1W | ECL 1 |
| Total/NA | Analysis | 8082 | | 1 | - | | 181261 | 09/23/21 18:29 | UHHN | ECL 1 |
| | Instrumer | nt ID: GC58 | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3050B | | | 2.03 g | 100 mL | 181268 | 09/23/21 08:25 | WL8G | ECL 1 |
| Total/NA | Analysis | 6020 | | 20 | | | 181377 | 09/23/21 13:56 | UFLE | ECL 1 |
| | Instrumer | nt ID: ICPMS05 | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 7471A | | | .61 g | 100 mL | 181297 | 09/23/21 09:54 | WL8G | ECL 1 |
| Total/NA | Analysis | 7471A | | 1 | - | | 181371 | 09/23/21 14:29 | VWJ7 | ECL 1 |
| | Instrumer | nt ID: HG7 | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Analysis | 9060A | | 1 | 209.5 mg | 118.1 mg | 178845 | 09/15/21 10:51 | | ECL 1 |
| | Instrumer | nt ID: TOC9 | | | · · | · · | | | | |
| Total/NA | Analysis | Moisture | | 1 | | | 179106 | 09/14/21 16:15 | VWM4 | ECL 1 |
| | - | nt ID: GC54 | | · | | | | | | |
| Total/NA | Analysis | D4464 | | 1 | | | 181620 | 09/23/21 15:57 | C41 T | ECL 1 |
| iolai/i v A | • | nt ID: NOEQUIP | | ı | | | 101020 | 03/23/21 13.37 | O4L1 | LOLI |
| | mandifici | RID. NOLGOII | | | | | | | | |

Client Sample ID: SED-004

Date Collected: 09/09/21 13:30 Date Received: 09/13/21 13:50

Lab Sample ID: 570-69878-2

Matrix: Solid

| | Batch | Batch | | Dil | Initial | Final | Batch | Prepared | | |
|-----------|-----------|-----------------|-----|--------|---------|--------|--------|----------------|---------|-------|
| Prep Type | Type | Method | Run | Factor | Amount | Amount | Number | or Analyzed | Analyst | Lab |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.14 g | 2 mL | 180052 | 09/17/21 18:49 | USUL | ECL 1 |
| Total/NA | Analysis | 8270C SIM | | 2 | | | 181003 | 09/23/21 03:11 | AJ2Q | ECL 1 |
| | Instrumer | t ID: GCMSAAA | | | | | | | | |

Eurofins Calscience LLC

Page 52 of 61

Lab Chronicle

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Client Sample ID: SED-004

Lab Sample ID: 570-69878-2

Date Collected: 09/09/21 13:30 **Matrix: Solid** Date Received: 09/13/21 13:50

| | Batch | Batch | | Dil | Initial | Final | Batch | Prepared | | |
|-----------|-----------------------|--------------------------------|-----|--------|----------|----------|--------|----------------|---------|-------|
| Prep Type | Type | Method | Run | Factor | Amount | Amount | Number | or Analyzed | Analyst | Lab |
| Total/NA | Cleanup | Homogenize Prep | | | _ | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | Organotin Prep | | | 10.27 g | 5 mL | 179948 | 09/17/21 12:08 | UWEZ | ECL 1 |
| Total/NA | Analysis Instrumen | Organotins SIM at ID: GCMSY | | 1 | | | 181787 | 09/24/21 22:54 | AJ2Q | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3550C | | | 9.94 g | 10 mL | 179051 | 09/14/21 12:44 | UYUW | ECL 1 |
| Total/NA | Analysis Instrumen | 8015B at ID: GC47 | | 1 | | | 179416 | 09/16/21 08:59 | N1A | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.06 g | 2 mL | 180082 | 09/17/21 20:21 | UM1W | ECL 1 |
| Total/NA | Analysis Instrumen | 8081A at ID: GC44 | | 5 | | | 181420 | 09/23/21 19:34 | UHHN | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.06 g | 2 mL | 180082 | 09/17/21 20:21 | UM1W | ECL 1 |
| Total/NA | Analysis Instrumen | 8082 at ID: GC58 | | 1 | | | 181261 | 09/23/21 18:47 | UHHN | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3050B | | | 1.99 g | 100 mL | 181268 | 09/23/21 08:25 | WL8G | ECL 1 |
| Total/NA | Analysis Instrumen | 6020 at ID: ICPMS05 | | 20 | | | 181377 | 09/23/21 14:18 | UFLE | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 7471A | | | .63 g | 100 mL | 181297 | 09/23/21 09:54 | WL8G | ECL 1 |
| Total/NA | Analysis Instrumen | 7471A at ID: HG7 | | 1 | | | 181371 | 09/23/21 14:34 | VWJ7 | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Analysis Instrumen | 9060A at ID: TOC9 | | 1 | 202.7 mg | 202.7 mg | 178845 | 09/16/21 10:51 | CY2M | ECL 1 |
| Total/NA | Analysis Instrumen | Moisture at ID: GC54 | | 1 | | | 179106 | 09/14/21 16:15 | VWM4 | ECL 1 |
| Total/NA | Analysis Instrumen | D4464 at ID: NOEQUIP | | 1 | | | 181620 | 09/23/21 16:03 | C4LT | ECL 1 |

Lab Sample ID: 570-69878-3 **Client Sample ID: SED-005** Date Collected: 09/09/21 15:45 Date Received: 09/13/21 13:50

| | Batch | Batch | | Dil | Initial | Final | Batch | Prepared | | |
|-----------|-----------|-----------------|-----|--------|---------|--------|--------|----------------|---------|-------|
| Prep Type | Type | Method | Run | Factor | Amount | Amount | Number | or Analyzed | Analyst | Lab |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.17 g | 2 mL | 180052 | 09/17/21 18:49 | USUL | ECL 1 |
| Total/NA | Analysis | 8270C SIM | | 2 | | | 181003 | 09/23/21 03:30 | AJ2Q | ECL 1 |
| | Instrumen | t ID: GCMSAAA | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | Organotin Prep | | | 10.19 g | 5 mL | 179948 | 09/17/21 12:08 | UWEZ | ECL 1 |
| Total/NA | Analysis | Organotins SIM | | 1 | | | 181787 | 09/24/21 23:11 | AJ2Q | ECL 1 |
| | Instrumen | t ID: GCMSY | | | | | | | | |

Page 53 of 61

Matrix: Solid

Lab Chronicle

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Client Sample ID: SED-005

Lab Sample ID: 570-69878-3

Date Collected: 09/09/21 15:45 **Matrix: Solid** Date Received: 09/13/21 13:50

| | Batch | Batch | | Dil | Initial | Final | Batch | Prepared | | |
|-----------|-----------------------|-------------------------|-----|--------|----------|----------|--------|----------------|---------|-------|
| Prep Type | Type | Method | Run | Factor | Amount | Amount | Number | or Analyzed | Analyst | Lab |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3550C | | | 9.90 g | 10 mL | 179051 | 09/14/21 12:44 | UYUW | ECL 1 |
| Total/NA | Analysis Instrumer | 8015B nt ID: GC47 | | 1 | | | 179416 | 09/16/21 09:21 | N1A | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.08 g | 2 mL | 180082 | 09/17/21 20:23 | UM1W | ECL 1 |
| Total/NA | Analysis Instrumer | 8081A nt ID: GC44 | | 5 | | | 181420 | 09/23/21 19:48 | UHHN | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.08 g | 2 mL | 180082 | 09/17/21 20:23 | UM1W | ECL 1 |
| Total/NA | Analysis Instrumer | 8082 nt ID: GC58 | | 1 | | | 181261 | 09/23/21 19:05 | UHHN | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3050B | | | 2.05 g | 100 mL | 181268 | 09/23/21 08:25 | WL8G | ECL 1 |
| Total/NA | Analysis Instrumer | 6020 nt ID: ICPMS05 | | 20 | | | 181377 | 09/23/21 14:21 | UFLE | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 7471A | | | .57 g | 100 mL | 181297 | 09/23/21 09:54 | WL8G | ECL 1 |
| Total/NA | Analysis Instrumer | 7471A nt ID: HG7 | | 1 | | | 181371 | 09/23/21 14:36 | VWJ7 | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Analysis Instrumer | 9060A nt ID: TOC9 | | 1 | 205.5 mg | 205.5 mg | 178845 | 09/16/21 10:51 | CY2M | ECL 1 |
| Total/NA | Analysis Instrumer | Moisture nt ID: GC54 | | 1 | | | 179106 | 09/14/21 16:15 | VWM4 | ECL 1 |
| Total/NA | Analysis Instrumer | D4464 nt ID: NOEQUIP | | 1 | | | 181620 | 09/23/21 16:09 | C4LT | ECL 1 |

Lab Sample ID: 570-69878-4 **Client Sample ID: SED-006** Date Collected: 09/09/21 10:25 **Matrix: Solid**

Date Received: 09/13/21 13:50

| | Batch | Batch | | Dil | Initial | Final | Batch | Prepared | | |
|-----------|-----------------------|--------------------------------|-----|--------|---------|--------|--------|----------------|---------|-------|
| Prep Type | Type | Method | Run | Factor | Amount | Amount | Number | or Analyzed | Analyst | Lab |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.13 g | 2 mL | 180052 | 09/17/21 18:49 | USUL | ECL 1 |
| Total/NA | Analysis Instrumen | 8270C SIM at ID: GCMSAAA | | 2 | | | 181003 | 09/23/21 03:50 | AJ2Q | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | Organotin Prep | | | 10.17 g | 5 mL | 179948 | 09/17/21 12:08 | UWEZ | ECL 1 |
| Total/NA | Analysis Instrumen | Organotins SIM at ID: GCMSY | | 1 | | | 181787 | 09/24/21 23:28 | AJ2Q | ECL 1 |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3550C | | | 10.01 g | 10 mL | 179051 | 09/14/21 12:44 | UYUW | ECL 1 |
| Total/NA | Analysis Instrumen | 8015B at ID: GC47 | | 1 | | | 179416 | 09/16/21 09:44 | N1A | ECL 1 |

Page 54 of 61

Lab Chronicle

Client: WGR Southwest Inc Job ID: 570-69878-1 Project/Site: Tesoro LA Refinery

Client Sample ID: SED-006

Date Received: 09/13/21 13:50

Lab Sample ID: 570-69878-4 Date Collected: 09/09/21 10:25

Matrix: Solid

Dil Batch Batch Initial Final Batch Prepared Method or Analyzed **Prep Type** Type Run **Factor Amount** Amount Number **Analyst** Lab Total/NA 178989 09/14/21 10:06 C4LT ECL 1 Cleanup Homogenize Prep Total/NA 180082 09/17/21 20:23 UM1W ECL 1 Prep 3541 20.12 g 2 mL Total/NA Analysis 8081A 5 181420 09/23/21 20:02 UHHN ECL₁ Instrument ID: GC44 Total/NA Cleanup Homogenize Prep 178989 09/14/21 10:06 C4LT ECL 1 Total/NA 180082 ECL 1 Prep 3541 20.12 g 2 mL 09/17/21 20:23 UM1W Total/NA 8082 181261 09/23/21 19:23 UHHN ECL 1 Analysis 1 Instrument ID: GC58 Total/NA Cleanup Homogenize Prep 178989 09/14/21 10:06 C4LT ECL 1 3050B Total/NA Prep 2.00 g 100 mL 181268 09/23/21 08:25 WL8G ECL 1 Total/NA 6020 20 09/23/21 14:24 UFLE ECL 1 Analysis 181377 Instrument ID: ICPMS05 Total/NA Cleanup Homogenize Prep 178989 09/14/21 10:06 C4LT ECL 1 Total/NA Prep 7471A .61 g 100 mL 181297 09/23/21 09:54 WL8G ECL₁ Total/NA Analysis 7471A 181371 09/23/21 14:38 VWJ7 ECL 1 1 Instrument ID: HG7 Total/NA Homogenize Prep 09/14/21 10:06 C4LT ECL 1 Cleanup 178989 Total/NA Analysis 9060A 200.0 mg 200.0 mg 178845 09/15/21 10:32 CY2M ECL 1 Instrument ID: TOC9 Total/NA Analysis 179106 ECL 1 Moisture 09/14/21 16:15 VWM4 Instrument ID: GC54 Total/NA Analysis D4464 181620 09/23/21 16:15 C4LT ECL₁ Instrument ID: NOEQUIP

Client Sample ID: SED-007 Lab Sample ID: 570-69878-5 Date Collected: 09/09/21 11:30 **Matrix: Solid**

Date Received: 09/13/21 13:50

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|---------------|-----------------|-----|---------------|-------------------|-----------------|-----------------|-------------------------|---------|-------|
| | | | | | | | | | | |
| Total/NA | Prep | 3541 | | | 20.11 g | 2 mL | 180052 | 09/17/21 18:49 | USUL | ECL 1 |
| Total/NA | Analysis | 8270C SIM | | 5 | | | 181003 | 09/23/21 04:10 | AJ2Q | ECL 1 |
| | Instrumen | t ID: GCMSAAA | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | Organotin Prep | | | 10.16 g | 5 mL | 179948 | 09/17/21 12:08 | UWEZ | ECL 1 |
| Total/NA | Analysis | Organotins SIM | | 1 | | | 181787 | 09/24/21 23:46 | AJ2Q | ECL 1 |
| | Instrumen | t ID: GCMSY | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3550C | | | 9.93 g | 10 mL | 179051 | 09/14/21 12:44 | UYUW | ECL 1 |
| Total/NA | Analysis | 8015B | | 1 | | | 179416 | 09/16/21 10:07 | N1A | ECL 1 |
| | Instrumen | it ID: GC47 | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.14 g | 2 mL | 180082 | 09/17/21 20:23 | UM1W | ECL 1 |
| Total/NA | Analysis | 8081A | | 5 | | | 181420 | 09/23/21 20:16 | UHHN | ECL 1 |
| | Instrumen | it ID: GC44 | | | | | | | | |

Page 55 of 61

10

Lab Chronicle

Client: WGR Southwest Inc
Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

Client Sample ID: SED-007

Lab Sample ID: 570-69878-5

Date Collected: 09/09/21 11:30 Matrix: Solid
Date Received: 09/13/21 13:50

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|---------------|-----------------|-----|---------------|-------------------|-----------------|-----------------|----------------------|---------|-------|
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3541 | | | 20.14 g | 2 mL | 180082 | 09/17/21 20:23 | UM1W | ECL 1 |
| Total/NA | Analysis | 8082 | | 1 | | | 181261 | 09/23/21 19:41 | UHHN | ECL 1 |
| | Instrumen | t ID: GC58 | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 3050B | | | 1.97 g | 100 mL | 181268 | 09/23/21 08:25 | WL8G | ECL 1 |
| Total/NA | Analysis | 6020 | | 20 | | | 181377 | 09/23/21 14:28 | UFLE | ECL 1 |
| | Instrumen | t ID: ICPMS05 | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Prep | 7471A | | | .60 g | 100 mL | 181297 | 09/23/21 09:54 | WL8G | ECL 1 |
| Total/NA | Analysis | 7471A | | 1 | | | 181371 | 09/23/21 14:40 | VWJ7 | ECL 1 |
| | Instrumen | it ID: HG7 | | | | | | | | |
| Total/NA | Cleanup | Homogenize Prep | | | | | 178989 | 09/14/21 10:06 | C4LT | ECL 1 |
| Total/NA | Analysis | 9060A | | 1 | 68.1 mg | 68.1 mg | 178845 | 09/15/21 10:32 | CY2M | ECL 1 |
| | Instrumen | it ID: TOC9 | | | | | | | | |
| Total/NA | Analysis | Moisture | | 1 | | | 179106 | 09/14/21 16:15 | VWM4 | ECL 1 |
| | Instrumen | nt ID: GC54 | | | | | | | | |
| Total/NA | Analysis | D4464 | | 1 | | | 181620 | 09/23/21 16:24 | C4LT | ECL 1 |
| | • | it ID: NOEQUIP | | | | | | | | - ' - |

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

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Accreditation/Certification Summary

Client: WGR Southwest Inc
Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

Laboratory: Eurofins Calscience LLC

Oregon

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

NELAP

| uthority | | Program | Identification Number | Expiration Date |
|---|----------------|--------------------------------|---|--|
| alifornia | | State | 2944 | 09-30-21 |
| The following analytes the agency does not do | | eport, but the laboratory is r | not certified by the governing authority. | This list may include analytes for whi |
| Analysis Method | Prep Method | Matrix | Analyte | |
| 9060A | | Solid | Carbon, Total Organic | |
| D4464 | | Solid | Clay (less than 0.00391 mm) | 1 |
| D4464 | | Solid | Coarse Sand (0.5mm to 1mn | n) |
| D4464 | | Solid | Fine Sand (0.125 to 0.25mm |) |
| D4464 | | Solid | Gravel (greater than 2 mm) | |
| D4464 | | Solid | Medium Sand (0.25 to 0.5 m | m) |
| D4464 | | Solid | Silt (0.00391 to 0.0625mm) | |
| D4464 | | Solid | Total Silt and Clay (0 to 0.062 | 26mm) |
| D4464 | | Solid | Very Coarse Sand (1 to 2mm | 1) |
| D4464 | | Solid | Very Fine Sand (0.0625 to 0. | 125 mm) |
| Moisture | | Solid | Percent Moisture | |
| Organotins SIM | Organotin Prep | Solid | Tributyltin | |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

CA300001

01-30-22

| Analysis Method | Prep Method | Matrix | Analyte |
|-----------------|-------------|--------|-------------------------------------|
| D4464 | | Solid | Clay (less than 0.00391 mm) |
| D4464 | | Solid | Coarse Sand (0.5mm to 1mm) |
| D4464 | | Solid | Fine Sand (0.125 to 0.25mm) |
| D4464 | | Solid | Gravel (greater than 2 mm) |
| D4464 | | Solid | Medium Sand (0.25 to 0.5 mm) |
| D4464 | | Solid | Silt (0.00391 to 0.0625mm) |
| D4464 | | Solid | Total Silt and Clay (0 to 0.0626mm) |
| D4464 | | Solid | Very Coarse Sand (1 to 2mm) |
| D4464 | | Solid | Very Fine Sand (0.0625 to 0.125 mm) |
| Moisture | | Solid | Percent Moisture |

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Method Summary

Client: WGR Southwest Inc Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

| Method | Method Description | Protocol | Laboratory |
|-----------------|--|----------|------------|
| 8270C SIM | PAHs (GC/MS SIM) | SW846 | ECL 1 |
| Organotins SIM | Organotins (GC/MS SIM) | Lab SOP | ECL 1 |
| 8015B | Diesel Range Organics (DRO) (GC) | SW846 | ECL 1 |
| 8081A | Organochlorine Pesticides (GC) | SW846 | ECL 1 |
| 8082 | Polychlorinated Biphenyls (PCBs) by Gas Chromatography | SW846 | ECL 1 |
| 6020 | Metals (ICP/MS) | SW846 | ECL 1 |
| 7471A | Mercury (CVAA) | SW846 | ECL 1 |
| 9060A | Organic Carbon, Total (TOC) | SW846 | ECL 1 |
| Moisture | Percent Moisture | EPA | ECL 1 |
| D4464 | Particle Size Distribution of Catalytic Material (Laser light scattering) | ASTM | ECL 1 |
| 3050B | Preparation, Metals | SW846 | ECL 1 |
| 3541 | Automated Soxhlet Extraction | SW846 | ECL 1 |
| 3550C | Ultrasonic Extraction | SW846 | ECL 1 |
| 7471A | Preparation, Mercury | SW846 | ECL 1 |
| Homogenize Prep | Preparation, Homogenization | None | ECL 1 |
| Organotin Prep | Extraction (Organotins) | None | ECL 1 |

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

Lab SOP = Laboratory Standard Operating Procedure

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

Client: WGR Southwest Inc
Project/Site: Tesoro LA Refinery

Job ID: 570-69878-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 570-69878-1 | SED-003 | Solid | 09/09/21 17:55 | 09/13/21 13:50 |
| 570-69878-2 | SED-004 | Solid | 09/09/21 13:30 | 09/13/21 13:50 |
| 570-69878-3 | SED-005 | Solid | 09/09/21 15:45 | 09/13/21 13:50 |
| 570-69878-4 | SED-006 | Solid | 09/09/21 10:25 | 09/13/21 13:50 |
| 570-69878-5 | SED-007 | Solid | 09/09/21 11:30 | 09/13/21 13:50 |

| Facility Name LA Refinery - Carson Operations | | | Stat | | | | ob id | Co | rson CA 907 | 40 | Pro | ect | Mar | nage | r (C | onsi | ultant |) | T | Pro | | . (Consult | | | | | aboratory Name |
|---|--|-------------------|--------|-------|------|-------|-------|-------|-----------------|---------------|--|---------------------|----------------------|--------------------------------|--------------------|-------------------------------------|-----------------------------------|--------------------------|---------------------------------|-------------------|----------------|---|---|-------------------------------------|---------------|--------|--|
| Facility Contact Nate Busch | | | lity T | elepi | hone | No | SIVO. | , Ca | ISON CA 907 | 49 | Chelsea Dreyer Telephone No. (Consultant) (562) 799-8510 ex 1003 | | | | | + | 021.APC.01 Fax No (Consultant) | | | | | | rurofins Calscience 7440 Lincoln Way | | | | |
| Consultant Company | | - | (310 | 0) 04 | 7-39 | 20 | Con | sulta | nt Address | | (562) 799-8510 ex. 1003 | | | | | | _ | (562) 799-8510 | | | | | - G | arden Grove 92841 (714) 895-5494 | | | |
| WGR Southwest, Inc. | | | | | | | 110 | 21 W | inners Circle # | 101 Los | s Ala | mito | s, | Calif | omi | ia 90 | 720 | | | | | | | | | La | ab Project Manager |
| | | | L | M | atri | K | Pr | sv. | | | П | П | | П | П | | Т | Т | I | | FI | ELD AN | IALYS | ES | | | Xuan Dang |
| 570-69878 Chain of Custody | | | | | | | | | | | xt box) | 11A | see text box) | B ASTM D4464 | | Carbon EPA 9060A | | al. | see text pox) | | | (mg/L) | 1ce (S/m) | lo | [if possible] | N | Special Detection Limit/Reporting Please report IDL and RL for all analytes |
| Sample I.D. | Lab Sample No. | No. of Containers | Soil | Water | Air | Other | Yes | No | Sampling Date | Sampling Time | Total Metals (see text box) | Chlordane EPA 8081A | PCBs (EPA 8082 - see | Sediment grain size ASTM D4464 | DDT (see text box) | Total Organic Carb | TPH EPA 8015B | Tributyltin Krone et al. | PAHS (EPA 82/0C - see text box) | pH (SU) [6.5-8.5] | Salinity (PSU) | Dissolved Oxygen (mg/L) [mean>7; single>5] | Specific Conductance (S/m) | Turbidity (NTU) [<50] | Flow (units = | f | Duplicate amples must be analyzed at a requency of 5% |
| GED-001- | | | | | | | | | 1 - 5 | | | | | | | | | 1 | T | | | | | | | Spe | cial QA/QC |
| SED-0020 | | 1 | | | | | | | | | | - | | | | | | 1 | 1 | | | | | | | 7 | |
| SED-003 | | 1 | х | | | | X | 11 | 9/9/21 | 17:55 | х | х | X | х | X | Х | X | X | x | | 1.4 | | | | V | Sub | 'd COC Attch'd |
| SED-004 | | 1 | X | | | | X | | 9/9/21 | 13.30 | X | X | X | X | X | X | X | X. | X | | | 1 7 | | | | | |
| SED-005 | | 1 | X | | | 4 | X |) Ü | 9/9/21 | 15.45 | x | X | X | X | X | х | X | X | X | | 1 | 1 = | | | | | |
| SED-006 | | 1 | X | | | | X | Į. | 9/9/21 | 10:25 | x | X | X | X | X | х | x | X : | X | | | 12 | | | | | 2 |
| SED-007 | | 1 | Х | | | | Х | | 9/9/21 | 11.30 | X | Х | X | Х | Х | Х | X | X. | X | | | N. L. o | ul I | | | 1 | Som |
| Total Metals analyzed with EPA 6020 Cadmium; Chromium; Copper; Lead; N Total Metals analyzed with EPA 7471 Mercury PCBs Sum of Arochlor 1016, Arochlor 1221, A DDT Sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, PAHs Sum of acenaphthene, anthracene, 1,2 | ickel, Zinc A: Arochlor 1232, Arc 2,4'-DDE, 4,4'-DD | D, and | 2,4 | -DDI | D | | | | | | | | | /len | e, | The same of the same of the same of | | | | | | | | | | REMARK | Email Results to: nbusch@marathonpetroleum.com cdreyer@wgr-sw.com aballrot@wgr-sw.com |
| | | | | | | | | | | | | , 1 | | | _ | | | | _ | | ш | | | | 11 | - | ii R ich(|
| Sample Received Intact: Yes No | | | | | | | | | Temperature r | eceive | d | | Ice | i i | | | | No i | ce | | | | | | | | Ema obns |
| Relinquished by SAMPLER (Print & Sign Nar | ne | | | Dat | | 2) | Tim | | | eceived | by (| Prin | 18: | Sign | Na Na | me) | | 7 | | RAT | MI. | | | | | | ш с о ю |
| David Mondologo & Relinquished by (Print & Sign Name) | >#W> | -11 | _ | Dat | 13 | 21 | Tim | | 350 | ceived | her | AD | | TO. | DV | /Del | nt D | U | _ | | 1- | | | | _ | Lak | Work No. |
| interinguished by (in this or origin intaline) | | | | Pour | ~ | | 1000 | - | 1110 | - CIVCU | my r | -77 | 7.17 | | | 4 | | O'BII | 140 | | | | | | | Lac | Troin no. |

4.3 | 3.9 506

Revised 9/23/2019





























Client: WGR Southwest Inc Job Number: 570-69878-1

Login Number: 69878 List Source: Eurofins Calscience LLC

List Number: 1

Creator: Patel, Jayesh

| Creator. Pater, Jayesii | | |
|---|--------|---------|
| Question | Answer | Comment |
| Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td> | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

Eurofins Calscience LLC

ATTACHMENT 4

SEDIMENT MONITORING AQUATIC BIOASSAY ANALYTICAL LABORATORY REPORT



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs. Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, LPA R-95 136. Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-003

DATE RECEIVED: 9/13/2021

ABC LAB. NO.: WGR0921.057

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Yours yery truly,

Scott Johnson

Laboratory Director

| CETIS | Summary | Report |
|-------|---------|--------|
|-------|---------|--------|

Report Date:

02 Nov-21 11:42 (p 1 of 1)

Test Code/ID:

WGR0921.057m / 00-2390-6977

| Control of the | 1371106 | | | | | | Test | Code/ID: | WGR09 | 21.057m / I | 00-2390-697 |
|----------------|----------------|----------------|--------|------------------|-------------|---------|---------|-----------|--------------|--------------|--------------|
| Mussel Shell I | Development T | est | | | | | | Aquatic | Bioassay & | Consultin | g Labs, Inc. |
| Batch ID: | 14-2542-4023 | Test | Type: | Development-S | urvival | | Anal | yst: Joe | Freas | | |
| Start Date: | 15 Sep-21 14:0 | 00 Prot | ocol: | EPA/600/R-95/ | 136 (1995) | | Dilu | ent: Lat | oratory Wate | er | |
| Ending Date: | 17 Sep-21 14:0 | 00 Spec | ies: | Mytilus gallopro | vincialis | | Brin | e: | | | |
| Test Length: | 48h | Taxo | on: | Bivalvia | | | Soul | rce: Ca | risbad Aquaf | arms CA | Age: |
| Sample ID: | 12-7725-2937 | Code | e: | WGR0921.057 | m | | Proje | ect: 021 | .APC.01 | | |
| Sample Date: | 09 Sep-21 17:5 | 55 Mate | erial: | Sediment | | | Soul | rce: Bio | assay Repor | t | |
| Receipt Date: | 13 Sep-21 16:0 | 00 CAS | (PC): | | | | Stati | on: SE | D-003 | | |
| Sample Age: | 5d 20h | Clier | nt: | WGR Southwes | st Inc. | | | | | | |
| Single Compa | rison Summar | у | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compari | son Result | | |
| 06-9847-2318 | Combined Prop | portion Normal | Equal | Variance t Two- | Sample Test | 1 1 | 0.9194 | 100% pas | ssed combin | ed proportio | n normal |
| Test Acceptab | oility | | | | | TAC | Limits | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | |
| 06-9847-2318 | Combined Prop | portion Normal | PMSD | | 0.02569 | << | 0.25 | No | Passes C | riteria | |
| Combined Pro | portion Norma | al Summary | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | N | 5 | 0.9507 | 0.9359 | 0.9654 | 0.9372 | 0.9686 | 0.0053 | 0.0119 | 1.25% | 0.00% |
| 100 | | 5 | 0.9659 | 0.9408 | 0.9910 | 0.9372 | 0.9865 | 0.0090 | 0.0202 | 2.09% | -1.60% |
| Combined Pro | portion Norma | al Detail | | | | | MD | 5: 6ED3AF | BFEAE62C | A78BFAE | 65FB34648A |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| 0 | N | 0.9462 | 0.9372 | 0.9552 | 0.9686 | 0.9462 | | | | | |
| 100 | | 0.9372 | 0.9552 | 0.9865 | 0.9821 | 0.9686 | | | | | |
| Combined Pro | portion Norma | al Binomials | | | | | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| | | | | | | | | | | | |
| 0 | N | 211/223 | 209/22 | 3 213/223 | 216/223 | 211/223 | | | | | |

Analyst: 1 QA:

Report Date: 02 Nov-21 11:42 (p 1 of 2)
Test Code/ID: WGR0921.057m / 00-2390-6977

| | | | | | | | | Test Code | enu. | 1101101 | 21.057m/ | 00-2000-00 |
|---|--|---|---|--|--|---|--|---|--|---|---------------------------------------|-------------------------------------|
| Mussel Shell | Development ' | Test | | | | | | Ac | quatic E | Bioassay & | Consultir | g Labs, Inc |
| Analysis ID: | 06-9847-2318 | 1 | Endpoint: | Combined Prop | ortion Norma | al | 10 | CETIS Ve | rsion: | CETISV | 1.9.7 | |
| Analyzed: | 02 Nov-21 11: | 27 | Analysis: | Parametric-Two | | | 3 | Status Le | vel: | 1 | | |
| Edit Date: | 02 Nov-21 11: | 26 | MD5 Hash: | 6ED3AFBFEAR | E62CDA78B | FAE65FB3 | 4648A | Editor ID: | | 007-979 | -628-1 | |
| Batch ID: | 14-2542-4023 | | Test Type: | Development-S | urvival | | - | Analyst: | Joe | Freas | | |
| Start Date: | 15 Sep-21 14: | | Protocol: | EPA/600/R-95/ | | | | Diluent: | | ratory Wat | er | |
| Ending Date: | | | Species: | Mytilus gallopro | | | | Brine: | | alory True | | |
| Test Length: | | | Taxon: | Bivalvia | TII TOIGING | | | Source: | Carls | sbad Aquaf | arms CA | Age: |
| root Longini | | | , and it | Birama | | | | 3.5 35.73 E | | obud / iqual | arme or r | 0.0000 |
| Sample ID: | 12-7725-2937 | | Code: | WGR0921.057 | m | | 1 | Project: | 021 | APC.01 | | |
| Sample Date: | | | Material: | Sediment | | | | Source: | | ssay Repor | t | |
| Receipt Date: | The second secon | | CAS (PC): | 70.00 - CONT. | | | 13 | Station: | SED | -003 | | |
| Sample Age: | 5d 20h | | Client: | WGR Southwe | st Inc. | | | | | | | |
| Data Transfor | m | Alt H | ур | | | Compari | son Res | ult | | | | PMSD |
| Angular (Corre | cted) | C > T | | | | 100% pas | sed con | nbined pro | portion | normal end | lpoint | 2.57% |
| Equal Variance | e t Two-Samp | le Test | 7 - 7 | | | | | | | | | |
| Control | vs Conc- | 6 | Test S | Stat Critical | MSD DE | P-Type | P-Val | ue De | cision(| a:5%) | | |
| Negative Contr | 7.000 | | -1.544 | 1.86 | 0.052 8 | CDF | 0.919 | | - | icant Effect | | |
| Test Acceptat | The Otto I W | - | | | | | | | | | | |
| Attribute | Test St | | AC Limits r Uppe | Overlap | Decision | | | | | | | |
| PMSD | 0.02569 | << | 0.25 | No | Passes C | riteria | | | | | | |
| | | | 0.20 | | , would b | | - | | | | | |
| ANOVA Table | | | W 12.00 | | - | 2.0000 | 2000 | | 5.19 | 1200 | | |
| Source | Sum Sq | | | Square | DF | F Stat | P-Val | | cision(| | | |
| Between | 0.00473 | | 0.004 | | 1 | 2.383 | 0.161 | 2 Nor | n-Signifi | icant Effect | | |
| Error | 0.01589 | | 0.001 | 9873 | 9 | - | | | | | | |
| Total | 0.02063 | 49 | | | 9 | | | | | | | |
| ANOVA Assur | nptions Tests | | | | | | | | | | | |
| Attribute | Test | | | | Test Stat | Critical | P-Val | ue De | cision(c | a:1%) | | |
| 100,000,000,000 | 1 Cat | | | - V | 2.303 | 11.26 | 0.167 | 6 Equ | ual Varia | ances | | |
| | | Equality of | Variance Te | st | 2.000 | | | | | | | |
| Variance | Levene I Mod Lev | ene Equal | ity of Varian | | 4.169 | 13.75 | 0.087 | | ual Varia | | | |
| | Levene I Mod Lev | | ity of Varian | | | 23.15 | 0.218 | 9 Equ | ual Varia | ances | | |
| Variance | Levene l Mod Lev Variance Anderso | ene Equal Ratio F T n-Darling | lity of Varian est A2 Test | | 4.169 3.864 0.2636 | 23.15 3.878 | 0.218 0.726 | 9 Equ 0 Nor | ual Varia mal Dis | ances stribution | | |
| Variance | Levene I Mod Lev Variance Anderso D'Agosti | ene Equal Ratio F T n-Darling no Skewn | lity of Varian Test A2 Test ess Test | | 4.169 3.864 0.2636 0.1538 | 23.15 3.878 2.576 | 0.218 0.726 0.877 | 9 Equ 0 Nor 7 Nor | ual Varia mal Dis mal Dis | ances stribution stribution | | |
| Variance | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo | ene Equal Ratio F T n-Darling no Skewno rov-Smirn | ity of Variand Test A2 Test ess Test ov D Test | ce Test | 4.169 3.864 0.2636 0.1538 0.155 | 23.15 3.878 2.576 0.3025 | 0.218 0.726 0.877 0.869 | 9 Equ 0 Nor 7 Nor 7 Nor | ual Varia mal Dis mal Dis mal Dis | ances stribution stribution stribution | | |
| Variance | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo | ene Equal Ratio F T n-Darling no Skewno rov-Smirn | lity of Varian Test A2 Test ess Test | ce Test | 4.169 3.864 0.2636 0.1538 | 23.15 3.878 2.576 | 0.218 0.726 0.877 | 9 Equ 0 Nor 7 Nor 7 Nor | ual Varia mal Dis mal Dis mal Dis | ances stribution stribution | | |
| Variance Distribution | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro | ene Equal Ratio F T n-Darling no Skewnorov-Smirn Wilk W N | ity of Variand Test A2 Test ess Test ov D Test ormality Tes | ce Test | 4.169 3.864 0.2636 0.1538 0.155 | 23.15 3.878 2.576 0.3025 | 0.218 0.726 0.877 0.869 | 9 Equ 0 Nor 7 Nor 7 Nor | ual Varia mal Dis mal Dis mal Dis | ances stribution stribution stribution | | |
| Variance Distribution Combined Pro | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro | ene Equal Ratio F T n-Darling no Skewnorov-Smirn Wilk W N | ity of Variandest Test A2 Test ess Test ov D Test ormality Tes | ce Test | 4.169 3.864 0.2636 0.1538 0.155 | 23.15 3.878 2.576 0.3025 | 0.218 0.726 0.877 0.869 | 9 Equ 0 Nor 7 Nor 7 Nor | ual Varia mal Dis mal Dis mal Dis mal Dis | ances stribution stribution stribution | CV% | %Effect |
| Variance Distribution Combined Pro | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro- | ene Equal Ratio F T n-Darling no Skewno rov-Smirn Wilk W No al Summa | ity of Variandest Test A2 Test ess Test ov D Test ormality Tes | ce Test | 4.169 3.864 0.2636 0.1538 0.155 0.9634 | 23.15 3.878 2.576 0.3025 0.7411 | 0.218 0.726 0.877 0.869 0.823 | 9 Equ 0 Nor 7 Nor 7 Nor Ma | ual Varia mal Dis mal Dis mal Dis mal Dis | ances stribution stribution stribution stribution | CV% 1.25% | %Effect |
| Variance Distribution Combined Pro Conc-% 0 | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro- portion Norm Code | ene Equal Ratio F T n-Darling no Skewn orov-Smirn Wilk W N al Summa | ity of Variandest Pest A2 Test ess Test ov D Test ormality Tes ary t Mean | 95% LCL 7 0.9359 | 4.169 3.864 0.2636 0.1538 0.155 0.9634 | 23.15 3.878 2.576 0.3025 0.7411 Median | 0.218 0.726 0.877 0.869 0.823 | 9 Equ 0 Nor 7 Nor 7 Nor 7 Nor Ma. 2 0.9 | ual Varia mal Dis mal Dis mal Dis mal Dis | ances stribution stribution stribution stribution | | |
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| Variance Distribution Combined Pro Conc-% 0 100 Angular (Corr Conc-% | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro- Poortion Norm Code N ected) Transfo | ene Equal Ratio F T n-Darling no Skewn rov-Smirn Wilk W N Count 5 5 prmed Sur | ity of Variandest A2 Test ess Test ov D Test ormality Tes Mean 0.950' 0.9659 mmary t Mean | 95% LCL 7 0.9359 9 0.9408 95% LCL 0 1.3130 | 4.169 3.864 0.2636 0.1538 0.155 0.9634 95% UCL 0.9654 0.9910 | 23.15 3.878 2.576 0.3025 0.7411 Median 0.9462 0.9686 | 0.218 0.726 0.877 0.869 0.823 Min 0.937 0.937 | 9 Equ 0 Nor 7 Nor 7 Nor 7 Nor 2 0.9 2 0.9 Ma. 0 1.3 | ual Varia mal Dis mal Dis mal Dis mal Dis mal Dis x 886 886 x 930 | stribution stribution stribution stribution stribution Std Err 0.0053 0.0090 | 1.25% 2.09% CV% | 0.00% -1.60% %Effect |
| Variance Distribution Combined Pro Conc-% 0 100 Angular (Corr Conc-% 0 100 | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro- Poortion Norm Code N ected) Transfo Code N | ene Equal Ratio F T n-Darling no Skewn rov-Smirn Wilk W N Count 5 5 ormed Sur Count 5 5 | ity of Variandest A2 Test ess Test ess Test ov D Test ormality Tes Mean 0.950 0.9656 mmary t Mean 1.3486 | 95% LCL 7 0.9359 9 0.9408 95% LCL 0 1.3130 | 4.169 3.864 0.2636 0.1538 0.155 0.9634 95% UCL 0.9654 0.9910 95% UCL 1.3840 | 23.15 3.878 2.576 0.3025 0.7411 Median 0.9462 0.9686 Median 1.3370 | 0.218 0.726 0.877 0.869 0.823 Min 0.937 0.937 | 9 Equ 0 Nor 7 Nor 7 Nor 7 Nor 2 0.9 2 0.9 Ma. 0 1.3 | ual Varia mal Dis mal Dis mal Dis mal Dis mal Dis x 886 886 x 930 | std Err 0.0053 0.0090 Std Err 0.0128 | 1.25% 2.09% CV% 2.12% | 0.00% -1.60% %Effect 0.00% |
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| Variance Distribution Combined Pro Conc-% 0 100 Angular (Corr Conc-% 0 100 Combined Pro Conc-% | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro- Portion Norm Code N ected) Transfo Code N | ene Equal Ratio F T n-Darling no Skewnorov-Smirn Wilk W N Count 5 5 rmed Sur Count 5 5 at Detail | ity of Varianderst A2 Test A2 Test ess Test ov D Test ormality Tes Mean 0.950 0.965 mmary Mean 1.3480 1.3920 Rep 2 | 95% LCL 7 0.9359 9 0.9408 95% LCL 0 1.3130 0 1.3220 Rep 3 | 4.169 3.864 0.2636 0.1538 0.155 0.9634 95% UCL 0.9654 0.9910 95% UCL 1.3840 1.4620 | 23.15 3.878 2.576 0.3025 0.7411 Median 0.9462 0.9686 Median 1.3370 1.3930 | 0.218 0.726 0.877 0.869 0.823 Min 0.937 0.937 | 9 Equ 0 Nor 7 Nor 7 Nor 7 Nor 2 0.9 2 0.9 Ma. 0 1.3 | ual Varia mal Dis mal Dis mal Dis mal Dis mal Dis x 886 886 x 930 | std Err 0.0053 0.0090 Std Err 0.0128 | 1.25% 2.09% CV% 2.12% | 0.00% -1.60% %Effect 0.00% |
| Variance Distribution Combined Pro Conc-% 0 100 Angular (Corr Conc-% 0 100 Combined Pro Conc-% | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro- Portion Norm Code N Code N Portion Norm Code Code N Code | ene Equal Ratio F T n-Darling no Skewnorov-Smirn Wilk W N al Summa Count 5 5 ormed Suc Count 5 5 at Detail Rep 1 | ity of Varianderst A2 Test ess Test ess Test ov D Test ormality Tes Mean 0.950 0.965 mmary t Mean 1.3480 1.3920 Rep 2 0.937 | 95% LCL 7 0.9359 9 0.9408 95% LCL 0 1.3130 0 1.3220 Rep 3 2 0.9552 | 4.169 3.864 0.2636 0.1538 0.155 0.9634 95% UCL 0.9654 0.9910 95% UCL 1.3840 1.4620 Rep 4 | 23.15 3.878 2.576 0.3025 0.7411 Median 0.9462 0.9686 Median 1.3370 1.3930 | 0.218 0.726 0.877 0.869 0.823 Min 0.937 0.937 | 9 Equ 0 Nor 7 Nor 7 Nor 7 Nor 2 0.9 2 0.9 Ma. 0 1.3 | ual Varia mal Dis mal Dis mal Dis mal Dis mal Dis x 886 886 x 930 | std Err 0.0053 0.0090 Std Err 0.0128 | 1.25% 2.09% CV% 2.12% | 0.00% -1.60% %Effect 0.00% |
| Variance Distribution Combined Pro Conc-% 0 100 Angular (Corr Conc-% 0 100 Combined Pro Conc-% 0 100 | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro- Portion Norm Code N Code N Portion Norm Code N | ene Equal Ratio F T n-Darling no Skewn rov-Smirn Wilk W N Count 5 5 rmed Sur Count 5 al Detail Rep 1 0.9462 0.9372 | ity of Varianderst A2 Test A2 Test ess Test ov D Test ormality Tes Mean 0.950 0.965: mmary Mean 1.3486 1.3926 Rep 2 2 0.9375 2 0.955; | 95% LCL 7 0.9359 9 0.9408 95% LCL 0 1.3130 0 1.3220 Rep 3 2 0.9552 | 4.169 3.864 0.2636 0.1538 0.155 0.9634 95% UCL 0.9654 0.9910 95% UCL 1.3840 1.4620 Rep 4 0.9686 | 23.15 3.878 2.576 0.3025 0.7411 Median 0.9462 0.9686 Median 1.3370 1.3930 Rep 5 0.9462 | 0.218 0.726 0.877 0.869 0.823 Min 0.937 0.937 | 9 Equ 0 Nor 7 Nor 7 Nor 7 Nor 2 0.9 2 0.9 Ma. 0 1.3 | ual Varia mal Dis mal Dis mal Dis mal Dis mal Dis x 886 886 x 930 | std Err 0.0053 0.0090 Std Err 0.0128 | 1.25% 2.09% CV% 2.12% | 0.00% -1.60% %Effect 0.00% |
| Combined Pro Conc-% 0 100 Angular (Corr Conc-% 0 100 Combined Pro Conc-% 0 100 Angular (Corr | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro- Poortion Norm Code N Poortion Norm Code N Poortion Norm Code N Poortion Norm Code N | ene Equal Ratio F T n-Darling no Skewno rov-Smirn Wilk W N al Summa Count 5 5 mmed Su Count 5 al Detail Rep 1 0.9462 0.9372 | ity of Variandiest A2 Test ess Test ess Test ov D Test ormality Tes A2 Mean 0.950 0.965 mmary t Mean 1.348(1.392) Rep 2 2 0.937: 2 0.955; | 95% LCL 7 0.9359 9 0.9408 95% LCL 0 1.3130 0 1.3220 Rep 3 2 0.9552 2 0.9865 | 4.169 3.864 0.2636 0.1538 0.155 0.9634 95% UCL 0.9654 0.9910 95% UCL 1.3840 1.4620 Rep 4 0.9686 0.9821 | 23.15 3.878 2.576 0.3025 0.7411 Median 0.9462 0.9686 Median 1.3370 1.3930 Rep 5 0.9462 0.9686 | 0.218 0.726 0.877 0.869 0.823 Min 0.937 0.937 | 9 Equ 0 Nor 7 Nor 7 Nor 7 Nor 2 0.9 2 0.9 Ma. 0 1.3 | ual Varia mal Dis mal Dis mal Dis mal Dis mal Dis x 886 886 x 930 | std Err 0.0053 0.0090 Std Err 0.0128 | 1.25% 2.09% CV% 2.12% | 0.00% -1.60% %Effect 0.00% |
| Variance Distribution Combined Pro Conc-% 0 100 Angular (Corr | Levene I Mod Lev Variance Anderso D'Agosti Kolmogo Shapiro- Portion Norm Code N Code N Portion Norm Code N | ene Equal Ratio F T n-Darling no Skewn rov-Smirn Wilk W N Count 5 5 rmed Sur Count 5 al Detail Rep 1 0.9462 0.9372 | ity of Variani est A2 Test ess Test ov D Test ormality Tes ary t Mean 0.965 mmary t Mean 1.348 1.392 Rep 2 2 0.937 2 0.955 | 95% LCL 7 0.9359 9 0.9408 95% LCL 0 1.3130 0 1.3220 Rep 3 2 0.9552 2 0.9865 Rep 3 | 4.169 3.864 0.2636 0.1538 0.155 0.9634 95% UCL 0.9654 0.9910 95% UCL 1.3840 1.4620 Rep 4 0.9686 | 23.15 3.878 2.576 0.3025 0.7411 Median 0.9462 0.9686 Median 1.3370 1.3930 Rep 5 0.9462 | 0.218 0.726 0.877 0.869 0.823 Min 0.937 0.937 | 9 Equ 0 Nor 7 Nor 7 Nor 7 Nor 2 0.9 2 0.9 Ma. 0 1.3 | ual Varia mal Dis mal Dis mal Dis mal Dis mal Dis x 886 886 x 930 | std Err 0.0053 0.0090 Std Err 0.0128 | 1.25% 2.09% CV% 2.12% | 0.00% -1.60% %Effect 0.00% |

Report Date:

02 Nov-21 11:42 (p 2 of 2)

Test Code/ID:

WGR0921.057m / 00-2390-6977

Aquatic Bioassay & Consulting Labs, Inc.

Mussel Shell Development Test

CETISv1.9.7

Analysis ID: Analyzed:

Edit Date:

06-9847-2318 02 Nov-21 11:27 02 Nov-21 11:26 Endpoint: Combined Proportion Normal Analysis: Parametric-Two Sample

CETIS Version: Status Level:

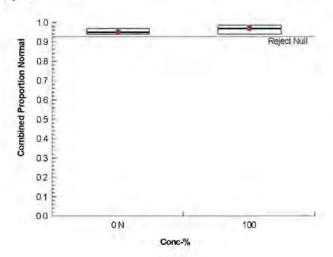
007-979-628-1

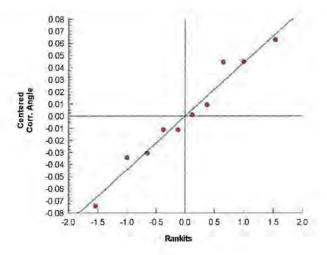
Combined Proportion Normal Binomials

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | |
|--------|------|---------|---------|---------|---------|---------|--|
| 0 | N | 211/223 | 209/223 | 213/223 | 216/223 | 211/223 | |
| 100 | | 209/223 | 213/223 | 220/223 | 219/223 | 216/223 | |

MD5 Hash: 6ED3AFBFEAE62CDA78BFAE65FB34648A Editor ID:

Graphics





Report Date:

02 Nov-21 11:42 (p 1 of 1)

Age:

Test Code/ID:

WGR0921.057m / 00-2390-6977

| 170 | Section 1 | | | |
|----------|-----------|--------|-----------|------|
| Mussel | Chall | Davido | mmant | Tact |
| MINISSEI | SHEIL | DEVELO | Difficill | 1621 |

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-2542-4023 Test Type: Development-Survival Analyst: Joe Freas Diluent: Start Date: 15 Sep-21 14:00 Protocol: EPA/600/R-95/136 (1995) Laboratory Water Ending Date: 17 Sep-21 14:00 Species: Mytilus galloprovincialis Brine: Test Length: 48h Source: Carlsbad Aquafarms CA

Code: WGR0921.057m 021.APC.01 Sample ID: Project: 12-7725-2937 Sample Date: 09 Sep-21 17:55 Material: Sediment Source: Bioassay Report CAS (PC): Station: SED-003 Receipt Date: 13 Sep-21 16:00

Bivalvia

Sample Age: 5d 20h Client: WGR Southwest Inc.

Taxon:

| Dissolved | Oxygen-mg/L |
|------------|----------------|
| DIODOITECA | CVI MOTE ITIME |

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|
| 0 | N | 2 | 10,05 | 9.415 | 10.69 | 10 | 10.1 | 0.03536 | 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.15 | 9.515 | 10.79 | 10.1 | 10.2 | 0.03535 | 0.0707 | 0.70% | 0 |
| Overall | | 4 | 10.1 | 9.97 | 10.23 | 10 | 10.2 | 0.04082 | 0.08165 | 0.81% | 0 (0%) |

pH-Units

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 (0%) |

Salinity-ppt

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 (0%) |

Temperature-°C

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|
| 0 | N | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.03539 | 0,07077 | 0.48% | 0 |
| 100 | | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.03539 | 0.07077 | 0.48% | 0 |
| Overall | | 4 | 14.85 | 14.76 | 14.94 | 14.8 | 14.9 | 0.02887 | 0.05773 | 0.39% | 0 (0%) |

CETIS™ v1,9,7.7



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs.Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136. Results were as follows:

CLIENT:

WGR Southwest, Inc.

SAMPLE I.D.:

SED-004

DATE RECEIVED:

9/13/2021

ABC LAB. NO .:

WGR0921.058

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 %

EC50 = >100.00%

Yours yery truly,

Scott Johnson

Laboratory Director

| CETIS: | Summary | Report |
|--------|---------|--------|
|--------|---------|--------|

Report Date:

02 Nov-21 11:42 (p 1 of 1)

| Test Code/ID |
|--------------|
| Test ooden |
| |

D: WGR0921.058m / 20-8116-3439

| | | | | | | | Test | Code/ID: | WGROS | 21.058m/ | 20-8116-3 | 439 |
|---------------|---------------|----------------|--------|------------------|-------------|---------|---------|-----------|---------------|--------------|-------------|-----|
| Mussel Shell | Development 1 | Гest | | | | | | Aquatio | Bioassay & | Consultin | ig Labs, Ir | ıc. |
| Batch ID: | 03-3679-5267 | Test | Type: | Development-S | urvival | | Anal | yst: Jo | e Freas | | | |
| Start Date: | 15 Sep-21 14: | 01 Prot | ocol: | EPA/600/R-95/ | 136 (1995) | | Dilu | ent: La | boratory Wate | er | | |
| Ending Date: | 17 Sep-21 14: | 01 Spec | cies: | Mytilus gallopro | vincialis | | Brin | e: | | | | |
| Test Length: | 48h | Taxo | on: | Bivalvia | | | Soul | rce: Ca | risbad Aquaf | arms CA | Age: | |
| Sample ID: | 13-1482-2030 | Code | e: | WGR0921.058 | m | | Proj | ect: 02 | 1.APC.01 | | | |
| Sample Date: | 09 Sep-21 13: | 30 Mate | erial: | Sediment | | | Soul | rce: Bio | assay Repor | t | | |
| Receipt Date: | 13 Sep-21 16: | 00 CAS | (PC): | | | | Stati | ion: SE | D-004 | | | |
| Sample Age: | 6d 1h | Clier | nt: | WGR Southwes | st Inc. | | | | | | | |
| Single Compa | rison Summar | у | | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compari | ison Result | | | S |
| 05-7737-4847 | Combined Pro | portion Normal | Equal | Variance t Two- | Sample Test | | 0.3542 | 100% pa | ssed combin | ed proportio | on normal | 1 |
| Test Acceptat | oility | | | | | TAC | Limits | | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | | |
| 05-7737-4847 | Combined Pro | portion Normal | PMSD |) | 0.0204 | << | 0.25 | No | Passes C | riteria | | |
| Combined Pro | portion Norm | al Summary | | | | | | | | | | _ |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effec | t |
| 0 | N | 5 | 0.9498 | 0.9343 | 0.9652 | 0.9372 | 0.9686 | 0.0056 | 0.0124 | 1.31% | 0.00% | |
| 100 | | 5 | 0.9453 | 0.9222 | 0.9684 | 0.9193 | 0.9686 | 0.0083 | 0.0186 | 1.97% | 0.47% | |
| Combined Pro | portion Norma | al Detail | - | | | | MD | 5: 29869E | E48FA59A74 | 5BE0FA0E | 3871224B5 | 5 |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| 0 | N | 0.9462 | 0.9552 | 0.9686 | 0.9417 | 0.9372 | | | | | | |
| 100 | | 0.9686 | 0.9462 | 0.9193 | 0.9372 | 0.9552 | | | | | | |
| Combined Pro | portion Norma | al Binomials | | | | | | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| 0 | N | 211/223 | 213/22 | 23 216/223 | 210/223 | 209/223 | | | | | | |
| 100 | | 216/223 | 211/22 | 23 205/223 | 209/223 | 213/223 | | | | | | |
| | | | | | | | | | | | | |

Analyst Q QA:

Report Date: Test Code/ID:

02 Nov-21 11:42 (p 1 of 2) WGR0921.058m / 20-8116-3439

| Mussel Shell | Develop | nent Te | st | | | | | | | | | Aquatic E | Bioassay 8 | Consultin | ng Labs, Ir |
|-------------------------|--------------|----------|---------------|----------------|-----------|---------|-----------------|-------|----------|---------|---------------------------|----------------|--------------|-----------|-------------|
| Analysis ID: | 05-7737- | 4847 | | Endpoint: | Combine | ed Prop | ortion Norr | mal | | 1 | CETIS | Version: | CETISV | 1.9.7 | |
| Analyzed: | 02 Nov-2 | 1 11:31 | | Analysis: | | | Sample | | | | Status | Level: | 1 | | |
| Edit Date: | 02 Nov-2 | 1 11:30 | to the second | MD5 Hash: | 29869E | E48FA | 59A745BE | OFA | 0B871224 | 4B5 I | Editor | ID: | 007-979 | -628-1 | |
| Batch ID: | 03-3679- | 5267 | | Test Type: | Develop | ment-S | urvival | | | - | Analy | st: Joe I | Freas | | |
| Start Date: | 15 Sep-2 | 1 14:01 | | Protocol: | EPA/600 | D/R-95/ | 136 (1995) | | | 1 | Diluent: Laboratory Water | | | | |
| Ending Date: | 17 Sep-2 | 1 14:01 | | Species: | Mytilus g | allopro | vincialis | | | 1 | 3rine: | | | | |
| Test Length: | 48h | | | Taxon: | Bivalvia | | | | | | Sourc | e: Carls | sbad Aqua | farms CA | Age: |
| Sample ID: | 13-1482- | 2030 | | Code: | WGR09 | 21.058 | m | | | | rojec | t: 021. | APC.01 | | |
| Sample Date: | | | | Material: | Sedimen | | | | | | Sourc | | ssay Repo | rt | |
| Receipt Date: | | | | CAS (PC): | | | | | | | Statio | | | 3 | |
| Sample Age: | | | | Client: | WGR S | outhwe | st Inc. | | | | | | | | |
| Data Transfor | m | | Alt H | VD. | | | | - 3 | Comparis | son Res | ult | | | | PMSD |
| Angular (Corre | | | C>T | | | _ | | | | | _ | proportion | normal end | point | 2.04% |
| Equal Variance | 1 1 1 | ampla | | | | | | | | | | CONTRACT. | | 4 2 | |
| Control | | onc-% | lest | Test S | Stat Cri | tical | MSD I |)E | P-Type | P-Val | 110 | Decision(c | E0/ \ | | |
| Negative Contr | | | - | 0.3876 | | - | 0.042 8 | _ | CDF | 0.354 | _ | Non-Signifi | | - | |
| | | | - | | 1.0 | ~ | J.5-12 C | 51 1 | | 0.004 | | , .orr orginii | Sant Lineo | | |
| Test Acceptat | Transfer and | | | C Limits | 2.7 | 3.0 | | | | | | | | | |
| Attribute | | st Stat | Lower | | | erlap | Decision | | office: | | | | _ | _ | |
| PMSD | 0.0 | 204 | << | 0.25 | No | | Passes | Crite | eria | | | | | | |
| ANOVA Table | | | | | | | | | | | | | | | |
| Source | Su | m Squa | res | | Square | | DF | - 33 | F Stat | P-Vai | | Decision(c | x:5%) | | |
| Between | 0.0 | 001956 | | 0.000 | 1956 | | 1 | (| 0.1503 | 0.708 | 4 | Non-Signifi | icant Effect | | |
| Error | | 104114 | | 0.0013 | 3014 | _ | 8 | _ | | | | | | | |
| Total | 0.0 | 106069 | | | | | 9 | | | | | | | | |
| ANOVA Assur | mptions T | ests | | | | | | | | | | | | | |
| Attribute | Te | st | | | | | Test Sta | t (| Critical | P-Vali | ue | Decision(| x:1%) | | |
| Variance | Lev | ene Eq | uality of | Variance Te | st | | 0.3106 | | 11.26 | 0.592 | õ | Equal Varia | ances | | |
| | | | | ity of Variand | ce Test | | 0.5941 | | 13.75 | 0,470 | | Equal Varia | | | |
| | | riance R | | | | | 1.917 | | 23.15 | 0.5440 | | Equal Varia | | | |
| Distribution | | derson-l | | | | | 0.2252 | | 3.878 | 0.852 | | Normal Dis | | | |
| | | | | ess Test | | | 0.3997 | | 2.576 | 0.689 | | Normal Dis | | | |
| | | | | ov D Test | | | 0.1149 | | 0.3025 | 1.0000 | | Normal Dis | | | |
| | Sh | apiro-VV | ilk W No | ormality Test | | | 0.9692 | (| 0.7411 | 0.8836 | 3 | Normal Dis | tribution | | |
| Combined Pro | portion N | lormal : | Summa | iry | | | | | | | | | | | |
| Conc-% | Co | de | Count | | | LCL | 95% UCI | L | Median | Min | | Max | Std Err | CV% | %Effect |
| 0 | N | | 5 | 0.9498 | | | 0.9652 | | | 0.937 | | 0.9686 | 0.0056 | 1.31% | 0.00% |
| 100 | | | 5 | 0.9453 | 3 0,92 | 222 | 0.9684 | | | 0.9193 | 3 | 0.9686 | 0.0083 | 1.97% | 0.47% |
| Angular (Corr | ected) Tr | ansform | ned Sur | nmary | | | | | | | | | | | |
| Conc-% | Co | de | Count | Mean | 95% | LCL | 95% UCL | . 1 | Median | Min | | Max | Std Err | CV% | %Effect |
| 0 | N | | 5 | 1,3460 | | | 1.3830 | | | 1.3180 | | 1,3930 | 0.0134 | 2.22% | 0.00% |
| 100 | | | 5 | 1.3370 | 1.28 | 360 | 1,3890 | | | 1.2830 |) | 1.3930 | 0.0185 | 3.09% | 0.66% |
| Combined Pro | portion N | iormai i | Detail | | | | | | | | | | | | |
| Conc-% | Co | de | Rep 1 | Rep 2 | Rep | 3 | Rep 4 | - | Rep 5 | | | | | | |
| 0 | N | | 0.9462 | 0.9552 | 2 0.96 | 586 | 0.9417 | (| 0.9372 | | | | | | |
| 100 | | | 0.9686 | 0.9462 | 0.91 | 193 | 0.9372 | (| 0.9552 | | | | | | |
| | antadi Tu | ensform | ned Det | ail | | | | | | | | | | | |
| Angular (Corr | ected) In | | | | | | | | | | | | | | |
| | | | Rep 1 | Rep 2 | Ren | 3 | Rep 4 | F | Rep 5 | | | | | | |
| Angular (Corr Conc-% | Co N | | Rep 1 | | | | Rep 4 1,3270 | _ | Rep 5 | | | | | | |

Report Date:

CETIS Version:

02 Nov-21 11:42 (p 2 of 2)

Test Code/ID:

WGR0921.058m / 20-8116-3439

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analyzed: Edit Date:

Analysis ID: 05-7737-4847 02 Nov-21 11:31

02 Nov-21 11:30

Analysis:

Endpoint: Combined Proportion Normal

Parametric-Two Sample

Status Level: MD5 Hash: 29869EE48FA59A745BE0FA0B871224B5 Editor ID:

007-979-628-1

CETISv1.9.7

Report Date:

02 Nov-21 11:42 (p 1 of 1)

Test Code/ID:

WGR0921.058m / 20-8116-3439

| | | | | | | | | Test Couch | D. WOND | 11110001.126 | 20-0110-040 |
|---------------------|-----------------|-------|------------|-----------------|-------------|------|------|------------|------------------|--------------|------------------|
| Mussel Shell | Development Te | st | | | | | | Aqu | atic Bioassay & | & Consultin | ig Labs, Inc. |
| Batch ID: | 03-3679-5267 | | Test Type: | Development-S | Survival | | | Analyst: | Joe Freas | | |
| Start Date: | 15 Sep-21 14:01 | | Protocol: | EPA/600/R-95 | /136 (1995) | | | Diluent: | Laboratory Wat | er | |
| Ending Date: | 17 Sep-21 14:01 | | Species: | Mytilus gallopr | ovincialis | | | Brine: | | | |
| Test Length: | 48h | | Taxon: | Bivalvia | | | | Source: | Carlsbad Aqua | farms CA | Age: |
| Sample ID: | 13-1482-2030 | | Code: | WGR0921.058 | 3m | | | Project: | 021.APC.01 | | |
| Sample Date: | 09 Sep-21 13:30 | | Material: | Sediment | | | | Source: | Bioassay Repo | rt | |
| Receipt Date: | 13 Sep-21 16:00 |) | CAS (PC): | | | | | Station: | SED-004 | | |
| Sample Age: | 6d 1h | | Client: | WGR Southwe | est Inc. | | | | | | |
| Dissolved Oxy | ygen-mg/L | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Coun |
| 0 | N | 2 | 10.05 | 9.415 | 10.69 | 10 | 10.1 | 0.0353 | 36 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.15 | 9.515 | 10.79 | 10.1 | 10.2 | 0.0353 | 35 0.0707 | 0.70% | 0 |
| Overall | | 4 | 10.1 | 9.97 | 10.23 | 10 | 10.2 | 0.0408 | 82 0.08165 | 0,81% | 0 (0%) |
| pH-Units | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Coun |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.8 | 6,529 | 9.071 | 7.7 | 7.9 | 0,070 | 71 0.1414 | 1 81% | 0 |
| Overall | | 4 | 7.85 | 7.691 | 8.009 | 7.7 | 7.9 | 0.05 | 0.1 | 1.27% | 0 (0%) |
| Salinity-ppt | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Coun |
| 0 | N | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 (0%) |
| Temperature- | °C | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count |
| 0 | N | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.0353 | 39 0.07077 | 0,48% | 0 |
| 100 | | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.0353 | 39 0.07077 | 0.48% | 0 |
| | | | | A | .7 | | | | THE THE PARTY IN | 27.723.7 | - 15 N S W T . T |

Overall

4

14.85

14.76

14.94

14.8

14.9

0.02887

0.05773

0.39%

0 (0%)



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs. Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136. Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-005

DATE RECEIVED: 9/13/2021

ABC LAB. NO.: WGR0921.059

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Yours very truly,

Scott Johnson

Laboratory Director

CETIS Summary Report

Report Date:

02 Nov-21 11:43 (p 1 of 1)

Test Code/ID:

WGR0921.059m / 02-1589-1346

| | | | | | | | Test | Code/ID: | WGR09 | 21.059m / (| 02-1589-134 |
|---------------|----------------|----------------|--------|------------------|-------------|---------|---------|-----------|---------------|--------------|--------------|
| Mussel Shell | Development T | est | | | | | | Aquatic | Bioassay & | Consultin | g Labs, Inc. |
| Batch ID: | 00-0039-7275 | Test | Туре: | Development-S | urvival | | Analy | /st: Joe | Freas | | |
| Start Date: | 15 Sep-21 14:0 | 2 Prot | ocol: | EPA/600/R-95/ | 136 (1995) | | Dilue | nt: Lab | oratory Wate | er | |
| Ending Date: | 17 Sep-21 14:0 | 2 Spec | cies: | Mytilus gallopro | vincialis | | Brine | : | | | |
| Test Length: | 48h | Taxo | n: | Bivalvia | | | Sour | ce: Car | risbad Aquafa | arms CA | Age: |
| Sample ID: | 17-4634-0978 | Code | e: | WGR0921.059 | m | | Proje | ct: 021 | .APC.01 | | |
| Sample Date: | 09 Sep-21 15:4 | 15 Mate | rial: | Sediment | | | Source | ce: Bio | assay Repor | 1 | |
| Receipt Date: | 13 Sep-21 16:0 | O CAS | (PC): | | | | Statio | on: SE | D-005 | | |
| Sample Age: | 5d 22h | Clier | nt: | WGR Southwes | st Inc. | | | | | | |
| Single Compa | rison Summar | у | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | IT CI | | P-Value | Compari | son Result | | |
| 04-1613-8136 | Combined Prop | portion Normal | Equal | Variance t Two- | Sample Test | | 0.7164 | 100% pas | ssed combine | ed proportio | n normal |
| Test Acceptab | ility | | | | | TACI | Limits | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | |
| 04-1613-8136 | Combined Prop | oortion Normal | PMSD | | 0.02426 | << | 0.25 | No | Passes C | riteria | |
| Combined Pro | portion Norma | al Summary | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | N | 5 | 0.9516 | 0.9295 | 0.9736 | 0.9238 | 0.9686 | 0.0079 | 0.0178 | 1.87% | 0.00% |
| 100 | | 5 | 0.9578 | 0.9357 | 0.9800 | 0.9372 | 0.9821 | 0.0080 | 0.0178 | 1.86% | -0.66% |
| Combined Pro | portion Norma | al Detail | | | 172 | | MD5 | : 2E26648 | 1F9703A5D | BFBE6663 | 0FE736E3 |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| 0 | N | 0.9462 | 0.9238 | 0,9552 | 0.9686 | 0.9641 | | | | | |
| 100 | | 0.9552 | 0.9686 | 0.9821 | 0.9462 | 0.9372 | | | | | |
| Combined Pro | portion Norma | l Binomials | | | | | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| | | | | | 040,000 | 015/000 | | | | | |
| 0 | N | 211/223 | 206/22 | 3 213/223 | 216/223 | 215/223 | | | | | |

Report Date:

02 Nov-21 11:43 (p 1 of 2)

| | alytical Re | | | | | | Test | Code/ID: | WGR092 | 21.059m / | 02-1589-13 |
|--|---|--|--|--------------------------------|---|--|---|--|--|--------------|------------------|
| Mussel Shell | Developmen | Test | | | | | | Aquatio | Bioassay & | Consultir | ng Labs, Inc |
| Analysis ID: | 04-1613-813 | 6 | Endpoint: | Combined Prop | oortion Norma | al | CET | IS Version | : CETISv1 | 9.7 | |
| Analyzed: | 02 Nov-21 1 | 1:34 | Analysis: | Parametric-Two | Sample | | Stat | us Level: | 1 | | |
| Edit Date: | 02 Nov-21 1 | 1:34 | MD5 Hash: | 2E266481F970 | 3A5DBFBE | 66630FE73 | 6E3 Edit | or ID: | 007-979-6 | 528-1 | |
| Batch ID: | 00-0039-727 | 5 | Test Type: | Development-S | urvival | | Anal | lyst: Joe | e Freas | | |
| Start Date: | 15 Sep-21 1 | 4:02 | Protocol: | EPA/600/R-95/ | 136 (1995) | | Dilu | ent: Lai | poratory Water | r | |
| Ending Date: | 17 Sep-21 1 | 4:02 | Species: | Mytilus gallopro | vincialis | | Brin | e: | | | |
| Test Length: | 48h | | Taxon: | Bivalvia | | | Sou | rce: Ca | rlsbad Aquafa | rms CA | Age: |
| Sample ID: | 17-4634-097 | 8 | Code: | WGR0921.059 | m | | Proj | ect: 02 | 1.APC.01 | | |
| Sample Date: | 09 Sep-21 15 | 5:45 | Material: | Sediment | | | Soul | rce: Bic | assay Report | | |
| Receipt Date: | 13 Sep-21 16 | 6:00 | CAS (PC): | | | | Stati | | D-005 | | |
| Sample Age: | 5d 22h | | Client: | WGR Southwe | st Inc. | | | | | | |
| Data Transfor | m | Alt H | lyp | | | Compari | son Result | | | | PMSD |
| Angular (Corre | cted) | C > T | | | | 100% pas | sed combine | ed proportio | n normal endp | oint | 2.43% |
| Equal Variano | e t Two-Sam | ple Test | | | | | | | | | |
| Control | vs Conc | -% | Test S | Stat Critical | MSD DE | P-Type | P-Value | Decision | (a:5%) | | |
| Negative Contr | ol 100 | | -0.596 | 8 1.86 | 0.052 8 | | 0.7164 | | ificant Effect | | |
| Test Acceptat | bility Criteria | T | AC Limits | | | | | | | | |
| Attribute | Test S | | | Overlap | Decision | | | | | | |
| PMSD | 0.0242 | 6 << | 0.25 | No | Passes Ci | riteria | | | | | |
| A. G. S. D. S. S. | | | | | | | | | | | |
| ANOVA Table | | | | | | | | | | | |
| | | quares | Mean | Square | DF | F Stat | P-Value | Decision | (a:5%) | | |
| Source | | | Mean 0.000 | Square 684 | DF | F Stat 0.3561 | | Decision | | | |
| ANOVA Table Source Between Error | Sum S | 84 | | 684 | | | P-Value 0.5672 | | i(α:5%) ificant Effect | | |
| Source Between Error | Sum S 0.0006 | 84 645 | 0.000 | 684 | 1 | | | | | | |
| Source Between Error Total | 0.0006 0.0153 0.0160 | 84 645 484 | 0.000 | 684 | 1 8 | | | | | | |
| Source Between Error Total ANOVA Assur | 0.0006 0.0153 0.0160 | 84 645 484 | 0.000 | 684 | 1 8 | 0.3561 | | | ificant Effect | | |
| Source Between Error Total ANOVA Assur Attribute | Sum S 0.0006 0.0153 0.0160 mptions Test | 84 645 484 s | 0.0006 0.0018 | 684 9206 | 1 8 9 | 0.3561 | 0.5672 | Non-Sign | ificant Effect | | |
| Source Between Error Total ANOVA Assur Attribute | Sum S 0.0006 0.0153 0.0160 mptions Test Test Levene | 84 645 484 s | 0.000 | 684 9206 est | 1 8 9 Test Stat | 0.3561 Critical | 0.5672 P-Value | Non-Sign Decision Equal Va | ificant Effect (α:1%) riances | | |
| Source Between Error Total ANOVA Assur Attribute | Sum S 0.0006 0.0153 0.0160 mptions Test Test Levene Mod Le | 84 645 484 s | 0.000s 0.001s TVariance Te lity of Variance | 684 9206 est | 1 8 9 Test Stat 0.246 | 0.3561 Critical 11.26 | 0.5672 P-Value 0.6333 | Non-Sign Decision | ificant Effect (a:1%) riances riances | | |
| Source Between Error Total ANOVA Assur Attribute Variance | Sum S 0.0006 0.0153 0.0160 mptions Test Levene Mod Le Variance | 84 645 484 s Equality of | 0.000s 0.001s f Variance Te lity of Variand Fest | 684 9206 est | 1 8 9 Test Stat 0.246 0.2079 | 0.3561 | 0.5672 P-Value 0.6333 0.6645 | Decision Equal Va Equal Va Equal Va | ificant Effect (a:1%) riances riances | | |
| Source Between Error Total ANOVA Assur Attribute Variance | Sum S 0.0006 0.0153 0.0160 mptions Test Levene Mod Le Variand Anders | 84 645 484 s Equality of evene Equa ce Ratio F 1 | 0.0006 0.0019 If Variance Te lity of Variance Test A2 Test | 684 9206 est | 1 8 9 Test Stat 0.246 0.2079 1.39 | 0.3561 | 0.5672 P-Value 0.6333 0.6645 0.7576 | Decision Equal Va Equal Va Equal Va Normal D | ificant Effect (a:1%) riances riances riances | | |
| Source Between Error Total ANOVA Assur Attribute Variance | Sum S 0.0006 0.0153 0.0160 mptions Test Levene Mod Le Variand Anders D'Agos | 84 645 484 s Equality of evene Equa ce Ratio Fillion-Darling | 0.0006 0.0019 f Variance Te lity of Variand Fest A2 Test less Test | 684 9206 est | 1 8 9 Test Stat 0.246 0.2079 1.39 0.1628 | 0.3561 Critical 11.26 13.75 23.15 3.878 | P-Value 0.6333 0.6645 0.7576 0.9934 | Decision Equal Va Equal Va Normal D Normal D | ificant Effect (α:1%) riances riances riances istribution | | |
| Source Between Error Total ANOVA Assur Attribute Variance | Sum S 0.0006 0.0153 0.0160 mptions Test Levene Mod Le Varianc Anders D'Agos Kolmog | 84 645 484 s Equality of evene Equality of exercise Ratio Fillianon-Darling string Skewn gorov-Smirr | 0.0006 0.0019 f Variance Te lity of Variand Fest A2 Test less Test | 684 9206 est ce Test | 1 8 9 Test Stat 0.246 0.2079 1.39 0.1628 0.1152 | 0.3561 - Critical 11.26 13.75 23.15 3.878 2.576 | P-Value 0.6333 0.6645 0.7576 0.9934 0.9083 | Decision Equal Va Equal Va Rormal D Normal D | (α:1%) riances riances riances ristribution pistribution | | |
| Source Between Error Total ANOVA Assur Attribute Variance Distribution | Sum S 0.0006 0.0153 0.0160 mptions Test Levene Mod Le Varianc Anders D'Agos Kolmog | 84 645 484 s Equality of evene Equal experience Ratio Filton-Darling extino Skewn gorov-Smirro-Wilk W N | 0.000s 0.001s I Variance Te lity of Variance Test A2 Test less Test lov D Test lormality Test | 684 9206 est ce Test | 1 8 9 Test Stat 0.246 0.2079 1.39 0.1628 0.1152 0.1236 | 0.3561 | P-Value 0.6333 0.6645 0.7576 0.9934 0.9083 1.0000 | Decision Equal Va Equal Va Rormal D Normal D | (α:1%) riances riances riances ristribution ristribution | | |
| Source Between | Sum S 0.0006 0.0153 0.0160 mptions Test Levene Mod Le Varianc Anders D'Agos Kolmog | 84 645 484 s Equality of evene Equal experience Ratio Filton-Darling extino Skewn gorov-Smirro-Wilk W N | 0.000s 0.001s f Variance Te lity of Variance Fest A2 Test less Test lov D Test formality Test | est ce Test | 1 8 9 Test Stat 0.246 0.2079 1.39 0.1628 0.1152 0.1236 | 0.3561 | P-Value 0.6333 0.6645 0.7576 0.9934 0.9083 1.0000 | Decision Equal Va Equal Va Rormal D Normal D | (α:1%) riances riances riances ristribution ristribution | CV% | %Effect |
| Source Between Error Total ANOVA Assur Attribute Variance Distribution | Sum S 0.0006 0.0153 0.0160 mptions Test Levene Mod Le Variand Anders D'Agos Kolmog Shapiro | 84 645 484 s Equality of evene | 0.000s 0.001s f Variance Te lity of Variance Fest A2 Test less Test lov D Test formality Test | 9206 9206 est ce Test | 1 8 9 Test Stat 0.246 0.2079 1.39 0.1628 0.1152 0.1236 0.9764 | 0.3561 | P-Value 0.6333 0.6645 0.7576 0.9934 0.9083 1.0000 0.9429 | Decision Equal Va Equal Va Equal Va Normal D Normal D Normal D | ificant Effect (α:1%) riances riances riances istribution istribution istribution | CV% 1.87% | %Effect 0.00% |

| Combined | Proportion | Normal | Detail |
|----------|------------|--------|--------|
|----------|------------|--------|--------|

Code

Ŋ

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 |
|--------|------|--------|--------|--------|--------|--------|
| 0 | N | 0.9462 | 0.9238 | 0.9552 | 0.9686 | 0.9641 |
| 100 | | 0.9552 | 0.9686 | 0.9821 | 0.9462 | 0.9372 |

Mean

1.3520

1.3680

95% LCL

1.3020

1.3090

Count

5

5

Angular (Corrected) Transformed Detail

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 |
|--------|------|--------|--------|--------|--------|--------|
| 0 | N | 1.3370 | 1.2910 | 1.3570 | 1.3930 | 1.3800 |
| 100 | | 1.3570 | 1.3930 | 1.4360 | 1.3370 | 1.3180 |

Analyst: 4 QA: 1

CV%

2.97%

3.45%

%Effect

0.00%

-1.22%

Std Err

0.0179

0.0211

Conc-%

0

100

95% UCL Median

1,4010

1.4270

Min

1.2910

1.3180

Max

1.3930

1.4360

Report Date: Test Code/ID: 02 Nov-21 11:43 (p 2 of 2)

Mussel Shell Development Test

WGR0921.059m / 02-1589-1346 Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 04-1613-8136

Endpoint: Combined Proportion Normal

CETIS Version: Status Level:

CETISv1.9.7

Analyzed: Edit Date:

02 Nov-21 11:34 02 Nov-21 11:34

Analysis: Parametric-Two Sample

MD5 Hash: 2E266481F9703A5DBFBE66630FE736E3 Editor ID:

007-979-628-1

9 OA Analyst:

CETIS Measurement Report

0

100

Overall

N

2

2

4

14.85

14.85

14.85

14.21

14.21

14.76

15.49

15.49

14.94

14.8

14.8

14.8

14.9

14.9

14.9

0.03539

0.03539

0.02887

0.07077

0.07077

0.05773

0.48%

0.48%

0.39%

0

0

0 (0%)

Report Date:

02 Nov-21 11:43 (p 1 of 1)

Test Code/ID: WGR09

WGR0921.059m / 02-1589-1346

| | | | | | | | | rest coden | | | 02-1303-1340 |
|---------------|----------------|-------|------------|-----------------|-------------|-----|------|------------|-----------------|-----------|---------------|
| Mussel Shell | Development T | est | | | | | | Aqu | atic Bioassay 8 | Consultin | ng Labs, Inc. |
| Batch ID: | 00-0039-7275 | | Test Type: | Development-S | Survival | | | Analyst: | Joe Freas | | |
| Start Date: | 15 Sep-21 14:0 | 02 | Protocol; | EPA/600/R-95 | /136 (1995) | | | Diluent: | Laboratory Wat | er | |
| Ending Date: | 17 Sep-21 14:0 | 02 | Species: | Mytilus gallopr | ovincialis | | | Brine: | | | |
| Test Length: | 48h | | Taxon: | Bivalvia | | | | Source: | Carlsbad Aqua | farms CA | Age: |
| Sample ID: | 17-4634-0978 | | Code: | WGR0921.05 | 9m | | - | Project: | 021.APC.01 | | |
| Sample Date: | 09 Sep-21 15:4 | 15 | Material: | Sediment | | | | Source: | Bioassay Repo | rt | |
| Receipt Date: | 13 Sep-21 16:0 | 00 | CAS (PC): | | | | | Station: | SED-005 | | |
| Sample Age: | 5d 22h | | Client: | WGR Southwe | est Inc. | | | | | | |
| Dissolved Ox | ygen-mg/L | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 10.05 | 9.415 | 10.69 | 10 | 10.1 | 0.0353 | 6 0,07073 | 0.70% | 0 |
| 100 | | 2 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 10.03 | 9.945 | 10.1 | 10 | 10.1 | 0,025 | 0,05 | 0.50% | 0 (0%) |
| pH-Units | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.65 | 7.015 | 8.285 | 7.6 | 7.7 | 0.0353 | 0.07071 | 0.92% | 0 |
| Overall | | 4 | 7.775 | 7.536 | 8.014 | 7.6 | 7.9 | 0.075 | 0.15 | 1.93% | 0 (0%) |
| Salinity-ppt | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 (0%) |
| Temperature- | °C | | | | | | | | | | |
| | | | | | | | | | | | |

Analyst: M QA C

007-979-628-1 CETIS™ v1.9.7.7



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs.Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136. Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-006

DATE RECEIVED: 9/13/2021

ABC LAB. NO.: WGR0921.060

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Yours very truly,

Scott Vohnson

Laboratory Director

| CETIS | Summary | Report |
|-------|---------|--------|
|-------|---------|--------|

Report Date:

02 Nov-21 11:43 (p 1 of 1)

Test Code/ID:

WGR0921.060m / 18-0660-0583

| Mussel Shell | | | | | | | | | | | | |
|-------------------------------|----------------|-----------------------|---------|------------------|------------------|------------------|---------|-----------|----------------|--------------|------------|----|
| | Development 1 | est | | | | | | Aquatio | Bioassay & | Consultin | g Labs, Ir | c. |
| Batch ID: | 06-9719-5450 | Test | Type: | Development-S | urvival | | Anal | yst: Jo | e Freas | | | |
| Start Date: | 15 Sep-21 14:0 | O3 Prot | ocol: | EPA/600/R-95/ | 136 (1995) | | Dilue | ent: La | boratory Water | er | | |
| Ending Date: | 17 Sep-21 14:0 | 3 Spec | cies: | Mytilus gallopro | vincialis | | Brine | e: | | | | |
| Test Length: | 48h | Taxo | on: | Bivalvia | | | Sour | ce: Ca | rlsbad Aquafa | arms CA | Age: | |
| Sample ID: | 00-3490-9640 | Cod | e: | WGR0921 060 | m | | Proje | ect: 02 | 1.APC.01 | | | _ |
| Sample Date: | 09 Sep-21 10:2 | 25 Mate | erial: | Sediment | | | Sour | ce: Bio | assay Report | t. | | |
| Receipt Date: | 13 Sep-21 16:0 | OO CAS | (PC): | | | | Stati | on: SE | D-006 | | | |
| Sample Age: | 6d 4h | Clie | nt: | WGR Southwes | st Inc. | | | | | | | |
| Single Compa | arison Summar | у | | | | | | | | | | |
| Analysis ID | Endpoint | | Compa | rison Method | | | P-Value | Compar | ison Result | | | S |
| 05-1624-1213 | Combined Prop | portion Normal | Equal \ | /ariance t Two-S | Sample Test | | 0.8963 | 100% pa | ssed combine | ed proportio | n normal | |
| Test Acceptal | bility | | | | | TAC | Limits | | | | | ī |
| Analysis ID | Endpoint | | Attribu | ite | Test Stat | Lower | Upper | Overlap | Decision | | | |
| 05-1624-1213 | Combined Prop | portion Normal | PMSD | | 0.01979 | << | 0.25 | No | Passes C | riteria | | |
| Combined Pro | oportion Norma | al Summary | | | | | | - | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effec | t |
| 0 | N | 5 | 0.9543 | 0.9383 | 0.9702 | 0.9372 | 0.9686 | 0.0057 | 0.0128 | 1.35% | 0.00% | |
| 100 | | 5 | 0.9659 | 0.9472 | 0.9846 | 0.9462 | 0.9821 | 0.0067 | 0.0151 | 1.56% | -1.22% | |
| Combined Pro | oportion Norma | al Detail | | | | | MD | 5: 4F6852 | 57C61FC36E | 6CFF35C0 | 064860B5 | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| 0 | N | 0.9462 | 0.9552 | 0.9686 | 0.9641 | 0.9372 | | | | | | |
| | | 0.9552 | 0.9686 | 0.9776 | 0.9462 | 0.9821 | | | | | | |
| 100 | | | | | | | | | | | | _ |
| | oportion Norma | al Binomials | 7 | | | | | | | | | |
| 100 Combined Pro Conc-% | oportion Norma | al Binomials Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| Combined Pro | | | Rep 2 | 4.7. | Rep 4 215/223 | Rep 5 209/223 | | | | | | |

Report Date:

02 Nov-21 11:43 (p 1 of 2)

| OL 113 Alle | alytical Rep | 3011 | | | | | Tes | t Code/ID: | WGROS | 921.060m / | 18-0660-05 |
|-----------------|------------------------|---------------------------|------------------|------------------|------------------|-----------|------------------|---------------|---------------|----------------|-----------------|
| Mussel Shell | Development 1 | Test | | | | | | Aquatic | Bioassay & | Consultin | ng Labs, Inc |
| Analysis ID: | 05-1624-1213 | E | ndpoint: | Combined Proj | portion Norm | nal | CET | IS Version: | CETISV | 1.9.7 | |
| Analyzed: | 02 Nov-21 11:3 | 37 A | nalysis: | Parametric-Tw | o Sample | | Stat | us Level: | 1 | | |
| Edit Date: | 02 Nov-21 11:3 | 37 M | D5 Hash: 4 | 4F685257C61 | FC36E6CFF | 35C006486 | OB5 Edit | or ID: | 007-979 | -628-1 | |
| Batch ID: | 06-9719-5450 | Te | est Type: I | Development-S | Survival | | Ana | lyst: Joe | Freas | | |
| Start Date: | 15 Sep-21 14:0 | 03 Pr | rotocol: E | PA/600/R-95 | /136 (1995) | | Dilu | ent: Lab | oratory Wat | er | |
| Ending Date: | 17 Sep-21 14:0 | 03 S ₁ | pecies: 1 | Mytilus gallopro | ovincialis | | Brin | ie: | | | |
| Test Length: | 48h | Ta | axon: | Bivalvia | | | Sou | rce: Carl | sbad Aqua | farms CA | Age: |
| Sample ID: | 00-3490-9640 | C | ode: \ | NGR0921.060 |)m | | Proj | ect: 021 | APC.01 | | |
| Sample Date: | 09 Sep-21 10: | 25 M | aterial: | Sediment | | | Sou | rce: Bioa | ssay Repo | t | |
| | 13 Sep-21 16:0 | | AS (PC): | | | | Stat | | 0-006 | | |
| Sample Age: | | | | NGR Southwe | est Inc. | | - | | | | |
| Data Transfor | m | Alt Hyp | | | | Compari | son Result | 1 | | | PMSD |
| Angular (Corre | | C>T | | | | | | ed proportion | normal end | fpoint . | 1.98% |
| | e t Two-Sampl | e Test | | | | | | | | | |
| Control | vs Conc-% | 6 | Test St | at Critical | MSD D | F P-Type | P-Value | Decision(| a:5%) | | |
| Negative Contr | | | -1.372 | 1.86 | 0.043 8 | | 0.8963 | | ficant Effec | t | |
| Test Acceptat | oility Criteria | TAC | Limits | | | | | | | | |
| Attribute | Test Sta | | Upper | Overlap | Decision | | | | | | |
| PMSD | 0.01979 | | 0.25 | No | Passes C | | | | | | |
| ANOVA Table | | | | | | | | | | | |
| Source | Sum Sq | uares | Mean S | quare | DF | F Stat | P-Value | Decision(| a:5%) | | |
| Between | 0.002533 | | 0.00253 | | 1 | 1.881 | 0.2074 | | ficant Effec | | |
| Error | 0.00233 | | 0.00233 | | 8 | 1.001 | 0.2074 | Non-aigh | IICAIIL EIIEC | | |
| Total | 0.01377 | | 0.00134 | 100 | 9 | - | | | | | |
| ΔΝΟΥΔ Δεειίτ | nptions Tests | | | | | | | | | | |
| Attribute | Test | | | | Tost Stat | Critical | P-Value | Decision(| a:1961 | | |
| Variance | | equality of V | ariance Tec | | 0.7642 | 11.26 | 0.4075 | Equal Vari | | | _ |
| Variance | | ene Equality | | | 2.084 | 13.75 | 0.1990 | Equal Vari | | | |
| | | Ratio F Tes | | 1631 | 1.848 | 23.15 | 0.5666 | Equal Vari | | | |
| Distribution | | n-Darling A2 | | | 0.2844 | 3.878 | 0.6594 | Normal Di | | | |
| nominaria | | | | | | | | | | | |
| | | no Skewnes | | | 0.2127 | 2,576 | 0.8316 | Normal Dis | | | |
| | | rov-Smirnov Wilk W Non | | | 0.1499 | 0.3025 | 0.9473 | Normal Dis | | | |
| Combined Per | | | , , , , , , | | 2,0 101 | SAMI | V. GEEV | Listing Di | e meanor. | | |
| Conc.% | oportion Norma Code | Count | | 95% LCL | 95% UCL | Median | Min | Max | Ctd Err | CV% | %Effect |
| Conc-% | N | 5 | Mean 0.9543 | 0.9383 | 0.9702 | weulan | 0.9372 | Max 0.9686 | O.0057 | 1.35% | 0.00% |
| 100 | 1.9 | 5 | 0.9659 | 0.9472 | 0.9846 | | 0.9462 | 0.9821 | 0.0057 | 1.56% | -1.22% |
| 0 1 T 1 T 1 T 1 | ONDERAG | F 1875 | | 0.3412 | 0,3040 | | 0.8402 | 0,3021 | 0.0007 | 1,30% | -1.2470 |
| | ected) Transfo | | | 050 1.01 | 050/ 1101 | 14.30 | NATIO | 4444 | 044 Fa | 01/0/ | 0/54 |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
| 0 100 | N | 5 5 | 1.3570 1.3890 | 1.3190 1.3370 | 1,3950 1,4410 | | 1.3180 1.3370 | 1.3930 | 0.0138 | 2.27% 3.01% | 0.00% -2.35% |
| * AT 155 | nortion Norma | | 1.5050 | 1,5570 | 64410 | | 1.5570 | 1,4500 | 0.0101 | 2.0170 | -23270 |
| | portion Norma | | Per 2 | Pan A | Don 4 | Den f | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| 0 | N | 0.9462 | 0.9552 | 0.9686 | 0.9641 | 0.9372 | | | | | |
| 100 | | 0.9552 | 0.9686 | 0.9776 | 0.9462 | 0.9821 | | | | | |
| | | | | _ | | _ | | | | | |

Analyst: M QA

Rep 2

1.3570

1.3930

Rep 3

1,3930

1.4200

Rep 4

1.3800

1.3370

Rep 5 1.3180

1.4360

Rep 1

1.3370

1.3570

Angular (Corrected) Transformed Detail

Code

Conc-%

0

100

Report Date:

02 Nov-21 11:43 (p 2 of 2)

Test Code/ID:

WGR0921.060m / 18-0660-0583

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 05-1624-1213 Analyzed:

Endpoint: Combined Proportion Normal

CETIS Version:

Status Level:

CETISv1.9.7

Edit Date:

02 Nov-21 11:37 02 Nov-21 11:37

MD5 Hash: 4F685257C61FC36E6CFF35C0064860B5

Analysis: Parametric-Two Sample

Editor ID:

007-979-628-1

CETIS Measurement Report

Report Date:

02 Nov-21 11:43 (p 1 of 1)

Test Code/ID: WGR0921.060m / 18-0660-0583

| 674 60 | | | | | | | | Test Code/ID | : WGR0: | 921.060m/ | 18-0660-0583 |
|---------------|---------------|-------|------------|------------------|-------------|------|------|--------------|----------------|-------------|---------------|
| Mussel Shell | Development 1 | Test | | | | | | Aqua | tic Bioassay & | & Consultir | ng Labs, Inc. |
| Batch ID: | 06-9719-5450 | | Test Type: | Development-S | Survival | | | Analyst: | Joe Freas | | |
| Start Date: | 15 Sep-21 14: | 03 | Protocol: | EPA/600/R-95 | /136 (1995) | | | Diluent: | Laboratory Wat | ter | |
| Ending Date: | 17 Sep-21 14: | 03 | Species: | Mytilus gallopre | ovincialis | | | Brine: | | | |
| Test Length: | 48h | | Taxon: | Bivalvia | | | | Source: (| Carlsbad Aqua | farms CA | Age: |
| Sample ID: | 00-3490-9640 | | Code: | WGR0921.060 |)m | | | Project: (| 021.APC.01 | | |
| Sample Date: | 09 Sep-21 10: | 25 | Material: | Sediment | | | | Source: | Bioassay Repo | rt | |
| Receipt Date: | 13 Sep-21 16: | 00 | CAS (PC): | | | | | Station: 5 | SED-006 | | |
| Sample Age: | 6d 4h | | Client: | WGR Southwe | est Inc. | | | | | | |
| Dissolved Oxy | ygen-mg/L | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 10.05 | 9.415 | 10.69 | 10 | 10.1 | 0.03536 | 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.1 | 8.829 | 11.37 | 10 | 10.2 | 0.07071 | 0.1414 | 1.40% | 0 |
| Overall | | 4 | 10.08 | 9,923 | 10.23 | 10 | 10.2 | 0.04787 | 0.09574 | 0.95% | 0 (0%) |
| pH-Units | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0,00% | 0 |
| 100 | | 2 | 7.7 | 7.698 | 7.702 | 7.7 | 7.7 | 0 | 0 | 0,00% | 0 |
| Overall | | 4 | 7.8 | 7.616 | 7.984 | 7.7 | 7.9 | 0.05774 | 0.1155 | 1.48% | 0 (0%) |
| Salinity-ppt | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 (0%) |
| Temperature- | °C | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0,03539 | 0.07077 | 0.48% | 0 |
| 400 | | | 4 4 6 5 | 1.101 | 15 10 | 440 | 440 | | 0.07077 | 0 1001 | |

0.48%

0.39%

0

0 (0%)

0.07077

0.05773

100

Overall

2

4

14.85

14.85

14.21

14.76

15.49

14.94

14.8

14.8

14.9

14.9

0.03539

0.02887



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs. Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136. Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-007
DATE RECEIVED: 9/13/2021
ABC LAB. NO.: WGR0921.061

CHRONIC MYTILUS SEDIMENT WATER INTERFACE BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Yours very truly,

w Scott Johnson

Laboratory Director

CETIS Summary Report

Report Date:

02 Nov-21 11:43 (p 1 of 1)

Test Code/ID:

WGR0921.061m / 01-7131-8640

| | | | | | | | lest | Code/ID: | WGR09 | 21.061m/ | 01-/131-8 | 64L |
|---------------|---------------|----------------|---------|------------------|-------------|---------|---------|-----------|---------------|---------------|------------|-----|
| Mussel Shell | Development 1 | Test | | | | | | Aquatio | Bioassay & | Consultin | g Labs, Ir | ıc. |
| Batch ID: | 06-2777-2564 | Test | Type: | Development-S | urvival | | Anal | yst: Jo | e Freas | | | |
| Start Date: | 15 Sep-21 14: | 04 Prot | ocol: | EPA/600/R-95/ | 136 (1995) | | Dilu | ent: La | boratory Wate | er | | |
| Ending Date: | 17 Sep-21 14: | 04 Spec | cies: | Mytilus gallopro | vincialis | | Brin | e: | | | | |
| Test Length: | 48h | Taxo | n: | Bivalvia | | | Sou | rce: Ca | irlsbad Aquaf | arms CA | Age: | |
| Sample ID: | 12-2403-5037 | Code | e: | WGR0921.061 | m | | Proj | ect: 02 | 1.APC.01 | | | |
| Sample Date: | 09 Sep-21 11: | 30 Mate | erial: | Sediment | | | Soul | rce: Bio | bassay Repor | t | | |
| Receipt Date: | 13 Sep-21 16: | 00 CAS | (PC): | | | | Stati | ion: SE | D-007 | | | |
| Sample Age: | 6d 3h | Clier | nt: | WGR Southwes | st Inc. | | | | | | | |
| Single Compa | rison Summar | У | | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compar | ison Result | | | s |
| 14-9959-2355 | Combined Pro | portion Normal | Equal | Variance t Two- | Sample Test | | 0.7629 | 100% pa | ssed combine | ed proportion | n normal | 1 |
| Test Acceptat | ility | | | | | TAC | Limits | | | | | |
| Analysis ID | Endpoint | | Attribu | ute | Test Stat | Lower | Upper | Overlap | Decision | | | |
| 14-9959-2355 | Combined Pro | portion Normal | PMSD | | 0.01962 | << | 0.25 | No | Passes C | riteria | | |
| Combined Pro | portion Norma | al Summary | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effe | ct |
| 0 | N | 5 | 0.9578 | 0.9357 | 0.9800 | 0.9372 | 0.9821 | 0.0080 | 0.0178 | 1.86% | 0.00% | 5. |
| 100 | | 5 | 0.9659 | 0.9531 | 0.9787 | 0.9552 | 0.9821 | 0.0046 | 0.0103 | 1.07% | -0.84% | 3 |
| Combined Pro | portion Norma | al Detail | | | | | MD | 5: 781F59 | 0B87CAED40 | COA38E692 | 2C769AE4 | D |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| D | N | 0.9462 | 0.9686 | 0,9552 | 0.9821 | 0.9372 | | | | | | |
| 100 | | 0.9641 | 0.9686 | 0.9552 | 0.9821 | 0.9596 | | | | | | |
| Combined Pro | portion Norma | al Binomials | | | | 471 | | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| 0 | N | 211/223 | 216/22 | 3 213/223 | 219/223 | 209/223 | | | | | | |
| 100 | | 215/223 | 216/22 | 3 213/223 | 219/223 | 214/223 | | | | | | |

Analyst: 4 QA: e

Report Date: Test Code/ID: 02 Nov-21 11:43 (p 1 of 2) WGR0921.061m / 01-7131-8640

| Mussel Shell | Development Test | | | Aquatic Bioassay & Consulting Labs, Inc. |
|--------------|------------------|-----------|---------------------------|--|
| Analysis ID: | 14 0050 2255 | Endnoint: | Combined Branadian Normal | CETIS Versions CETISM 0.7 |

Analysis ID: 14-9959-2355 Endpoint: Combined Proportion Normal CETIS Version: CETISV1.9.7

 Analyzed:
 02 Nov-21 11:40
 Analysis:
 Parametric-Two Sample
 Status Level:
 1

 Edit Date:
 02 Nov-21 11:40
 MD5 Hash:
 781F590B87CAED4C0A38E692C769AE4D
 Editor ID:
 007-979-628-1

Batch ID: 06-2777-2564 Test Type: Development-Survival Analyst: Joe Freas

Start Date: 15 Sep-21 14:04 Protocol: EPA/600/R-95/136 (1995) Diluent: Laboratory Water

Ending Date: 17 Sep-21 14:04 Species: Mytilus galloprovincialis Brine:

Test Length: 48h Taxon: Bivalvia Source: Carlsbad Aquafarms CA Age:

 Sample ID:
 12-2403-5037
 Code:
 WGR0921.061m
 Project:
 021.APC.01

 Sample Date:
 09 Sep-21 11:30
 Material:
 Sediment
 Source:
 Bioassay Report

 Receipt Date:
 13 Sep-21 16:00
 CAS (PC):
 Station:
 SED-007

Sample Age: 6d 3h Client: WGR Southwest Inc.

| Data Transform | Alt Hyp | Comparison Result | PMSD |
|---------------------|---------|---|-------|
| Angular (Corrected) | C>T | 100% passed combined proportion normal endpoint | 1.96% |

Equal Variance t Two-Sample Test

| Control | VS | Conc-% | Test Stat | Critical | MSD | DF | P-Type | P-Value | Decision(a:5%) | |
|----------------|----|--------|-----------|----------|-------|----|--------|---------|------------------------|--|
| Negative Contr | ol | 100 | -0.751 | 1.86 | 0.047 | 8 | CDF | 0.7629 | Non-Significant Effect | |

Test Acceptability Criteria TAC Limits

| Attribute | Test Stat | Lower | Upper | Overlap | Decision | |
|-----------|-----------|-------|-------|---------|-----------------|--|
| PMSD | 0.01962 | << | 0.25 | No | Passes Criteria | |

ANOVA Table

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(α:5%) |
|---------|-------------|-------------|----|--------|---------|------------------------|
| Between | 0.0008937 | 0.0008937 | 1 | 0.564 | 0.4741 | Non-Significant Effect |
| Error | 0.0126759 | 0.0015845 | 8 | | | |
| Total | 0.0135696 | | 9 | | | |

ANOVA Assumptions Tests

| Attribute | Test | Test Stat | Critical | P-Value | Decision(a:1%) |
|--------------|--------------------------------------|-----------|----------|---------|---------------------|
| Variance | Levene Equality of Variance Test | 1.361 | 11.26 | 0.2769 | Equal Variances |
| | Mod Levene Equality of Variance Test | 1.215 | 13.75 | 0.3125 | Equal Variances |
| | Variance Ratio F Test | 2.388 | 23.15 | 0.4198 | Equal Variances |
| Distribution | Anderson-Darling A2 Test | 0.3202 | 3.878 | 0.5541 | Normal Distribution |
| | D'Agostino Skewness Test | 1.016 | 2.576 | 0.3098 | Normal Distribution |
| | Kolmogorov-Smírnov D Test | 0.1722 | 0.3025 | 0.6322 | Normal Distribution |
| | Shapiro-Wilk W Normality Test | 0.9471 | 0.7411 | 0.6338 | Normal Distribution |
| | | | | | |

Combined Proportion Normal Summary

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
|--------|------|-------|--------|---------|---------|--------|--------|--------|---------|-------|---------|
| 0 | N | 5 | 0.9578 | 0.9357 | 0.9800 | | 0.9372 | 0.9821 | 0.0080 | 1.86% | 0.00% |
| 100 | | 5 | 0.9659 | 0.9531 | 0.9787 | | 0.9552 | 0.9821 | 0.0046 | 1.07% | -0.84% |

Angular (Corrected) Transformed Summary

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
|--------|------|-------|--------|---------|---------|--------|--------|--------|---------|-------|---------|
| 0 | N | 5 | 1.3680 | 1.3090 | 1.4270 | | 1.3180 | 1.4360 | 0.0211 | 3.45% | 0.00% |
| 100 | | 5 | 1.3870 | 1.3490 | 1,4250 | | 1.3570 | 1.4360 | 0.0137 | 2.20% | -1.38% |

Combined Proportion Normal Detail

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | |
|--------|------|--------|--------|--------|--------|--------|--|
| 0 | N | 0.9462 | 0,9686 | 0.9552 | 0.9821 | 0.9372 | |
| 100 | | 0.9641 | 0.9686 | 0.9552 | 0.9821 | 0.9596 | |

Angular (Corrected) Transformed Detail

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | |
|--------|------|--------|--------|--------|--------|--------|--|
| 0 | N | 1,3370 | 1.3930 | 1.3570 | 1.4360 | 1.3180 | |
| 100 | | 1.3800 | 1.3930 | 1.3570 | 1.4360 | 1.3690 | |

Analyst: 7 OA: ____

Report Date:

02 Nov-21 11:43 (p 2 of 2)

Test Code/ID:

WGR0921.061m / 01-7131-8640

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analyzed:

Analysis ID: 14-9959-2355

Endpoint: Combined Proportion Normal

CETIS Version:

Status Level:

CETISV1.9.7

Edit Date:

02 Nov-21 11:40 02 Nov-21 11:40

MD5 Hash: 781F590B87CAED4C0A38E692C769AE4D

Analysis: Parametric-Two Sample

Editor ID:

007-979-628-1

CETIS Measurement Report

Report Date:

02 Nov-21 11:43 (p 1 of 1)

Test Code/ID:

WGR0921.061m / 01-7131-8640

| | | | | | | | | rest code/ii | . WGRUS | 321.0011117 | 01-7131-0040 |
|--|---|-------|---|--|-------------|------|------|---|---|-------------|---------------|
| Mussel Shell | Development Te | st | | | | | | Aqui | atic Bioassay 8 | Consultin | ng Labs, Inc. |
| Batch ID: Start Date: Ending Date: Test Length: | 06-2777-2564 15 Sep-21 14:04 17 Sep-21 14:04 48h | | Test Type: Protocol: Species: Taxon: | Development-S EPA/600/R-95 Mytilus gallopr Bivalvia | /136 (1995) | | | Analyst: Diluent: Brine: Source: | Joe Freas Laboratory Wat Carlsbad Aqual | | Age: |
| | 12-2403-5037 09 Sep-21 11:30 13 Sep-21 16:00 6d 3h | | Code: Material: CAS (PC): Client: | WGR0921.06 Sediment WGR Southwe | | | | Project: Source; Station; | 021.APC.01 Bioassay Repor SED-007 | t | |
| Dissolved Oxy | ygen-mg/L | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 10.05 | 9.415 | 10.69 | 10 | 10.1 | 0.0353 | 6 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10 | 8.729 | 11.27 | 9.9 | 10.1 | 0.0707 | 2 0.1414 | 1.41% | 0 |
| Overall | | 4 | 10.03 | 9.873 | 10 18 | 9.9 | 10.1 | 0.0478 | 7 0.09574 | 0.96% | 0 (0%) |
| pH-Units | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.75 | 7,115 | 8.385 | 7.7 | 7.8 | 0.0353 | 6 0.07072 | 0.91% | 0 |
| Overall | | 4 | 7.825 | 7.673 | 7.977 | 7.7 | 7.9 | 0.0478 | 7 0 09574 | 1.22% | 0 (0%) |
| Salinity-ppt | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 0.00% | 0 (0%) |
| Temperature- | °C | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.0353 | 9 0.07077 | 0.48% | 0 |
| 100 | | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.0353 | 9 0.07077 | 0.48% | 0 |

Analyst: M QA. Z

Overall

4

14.85

14.76

14.94

14.8

14.9

0.02887

0.05773

0.39%

0 (0%)



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs.Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

CLIENT:

WGR Southwest, Inc.

SAMPLE I.D.:

SED-003

DATE RECEIVED:

9/13/2021

ABC LAB. NO .:

WGR1021.057

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00%

EC50 = >100.00 %

Yours very truly,

Scott Johnson

Laboratory Director

| CETIS Sur | nmary Report | | Report Da Test Code | | |
|--------------|---------------------|-----------------|-------------------------|--|---------------------|
| Eohaustorius | 10-d Survival and F | Reburial Sedime | Aq | uatic Bioassay & Consulting Labs, Inc. | |
| Batch ID: | 08-2094-1543 | Test Type: | Survival-Reburial | Analyst: | Joe Freas |
| Start Date: | 21 Sep-21 13:00 | Protocol: | EPA/600/R-94/025 (1994) | Diluent: | Laboratory Seawater |
| Ending Date: | 01 Oct 21 13:00 | Consider | Echaustorius estuarius | Prince | Not Applicable |

| Batch ID: | 08-2094-1543 | Test Type: | Survival-Reburial | Analyst: | Joe Freas |
|---------------|-----------------|------------|-------------------------|----------|----------------------------------|
| Start Date: | 21 Sep-21 13:00 | Protocol: | EPA/600/R-94/025 (1994) | Diluent: | Laboratory Seawater |
| Ending Date: | 01 Oct-21 13:00 | Species: | Echaustorius estuarius | Brine: | Not Applicable |
| Test Length: | 10d 0h | Taxon: | Malacostraca | Source: | Northwestern Aquatic Scienc Age; |
| Sample ID: | 12-5715-2191 | Code: | WGR0921.057e | Project: | 021.APC.01 |
| Sample Date: | 09 Sep-21 17:55 | Material: | Sediment | Source: | Bioassay Report |
| Receipt Date: | 13 Sep-21 16:00 | CAS (PC): | | Station: | SED-003 |
| Sample Age: | 11d 19h | Client: | WGR Southwest Inc. | | |

| Sample Age: | 11d 19h | Client: | WGR Southwest Inc. |
|-------------|---------|---------|--------------------|
| | | | |

Single Comparison Summary

| Analysis ID | Endpoint | | Compari | son Method | | | P-Value | Comparis | son Result | | S | | | |
|---------------|---------------|-------|--------------|------------|-----------|--------|---------|----------|-------------------|-----|---------|--|--|--|
| 10-8487-0012 | Survival Rate | | Wilcoxon | Rank Sum T | wo-Sample | Test | 1.0000 | 100% pas | sed survival rate | | | | | |
| Test Acceptal | oility | | | | | TAC | Limits | | | | | | | |
| Analysis ID | Endpoint | | Attribute | | Test Stat | Lower | Upper | Overlap | Decision | | | | | |
| 10-8487-0012 | Survival Rate | | Control Resp | | 1 | 0.9 | >> | Yes | Passes Criteria | | | | | |
| Survival Rate | Summary | | | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect | | | |
| 0 | N | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | - | 0.00% | | | |
| 100 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | - | 0.00% | | | |

| Survival Rate | Detail | | | | | | MD5: 41B41182B59AAABFB2FDAA23D11B52E4 |
|---------------|--------|--------|--------|--------|--------|--------|---------------------------------------|
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | |
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| 100 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| | | | | | | | |

| Overalized Date | Disconfute | 1.0000 | 1,0000 | 1.0000 | 1,0000 | 1.0000 | |
|-----------------|------------|--------|--------|--------|--------|--------|--|
| Survival Rate | Binomiais | | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | |
| 0 | N | 20/20 | 20/20 | 20/20 | 20/20 | 20/20 | |
| 100 | | 20/20 | 20/20 | 20/20 | 20/20 | 20/20 | |

Report Date:

02 Nov-21 11:44 (p 1 of 2) WGR0921.057e / 04-5769-0552

| | Test Code/ID. | WGRUS |
|---------------------|---------------|------------|
| | | |
| urial Sediment Test | Aquatic F | Singeeau & |

| Eohaustorius | 10-d Survival and F | Reburial Sedime | ent Test | Aquatic Bioassay & Consulting Labs, Inc. | | | |
|---------------------|---------------------|-----------------|----------------------------------|--|-------|------------------------------|--|
| Analysis ID: | 10-8487-0012 | Endpoint: | Survival Rate | CETIS Version: | | CETISv1.9.7 | |
| Analyzed: | 02 Nov-21 11:10 | Analysis: | Nonparametric-Two Sample | Status Leve | 1: | 1 | |
| Edit Date: | 02 Nov-21 11:09 | MD5 Hash: | 41B41182B59AAABFB2FDAA23D11B52E4 | Editor ID: | | 007-979-628-1 | |
| Batch ID: | 08-2094-1543 | Test Type: | Survival-Reburial | Analyst: | Joe F | reas | |
| Start Date: | 21 Sep-21 13:00 | Protocol: | EPA/600/R-94/025 (1994) | Diluent: | Labor | ratory Seawater | |
| Ending Date: | 01 Oct-21 13:00 | Species: | Eohaustorius estuarius | Brine: | Not A | Applicable | |
| Test Length: | 10d 0h | Taxon: | Malacostraca | Source: | North | nwestern Aquatic Scienc Age: | |
| Sample ID: | 12-5715-2191 | Code: | WGR0921.057e | Project: | 021.4 | APC.01 | |
| Sample Date: | 09 Sep-21 17:55 | Material: | Sediment | Source: | Bioas | ssay Report | |
| Receipt Date: | 13 Sep-21 16:00 | CAS (PC): | | Station: | SED- | -003 | |

Sample Age: 11d 19h Client: WGR Southwest Inc.

| Data Transform | Alt Hyp | Comparison Result |
|---------------------|---------|------------------------------------|
| Angular (Corrected) | C > T | 100% passed survival rate endpoint |

Wilcoxon Rank Sum Two-Sample Test

| Control | VS | Conc-% | Test Stat | Critical | Ties | DF | P-Type | P-Value | Decision(a:5%) |
|--------------|-------|--------|-----------|----------|------|----|--------|---------|------------------------|
| Negative Cor | ntrol | 100 | 27.5 | - | 1 | 8 | Exact | 1.0000 | Non-Significant Effect |

| Limits |
|--------|
| (|

| Attribute | Test Stat | Lower | Upper | Overlap | Decision | |
|--------------|-----------|-------|-------|---------|-----------------|--|
| Control Resp | 1 | 0.9 | >> | Yes | Passes Criteria | |

ANOVA Table

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(a:5%) |
|---------|-------------|-------------|----|--------|---------|----------------|
| Between | 0 | 0 | 1 | | | Indeterminate |
| Error | 0 | 0 | 8 | | | |
| Total | 0 | | 9 | | | |

ANOVA Assumptions Tests

| Attribute | Test | Test Stat | Critical | P-Value | Decision(a:1%) | |
|--------------|-------------------------------|-----------|----------|---------|----------------|--|
| Variance | Variance Ratio F Test | | | | Indeterminate | |
| Distribution | Shapiro-Wilk W Normality Test | | | | Indeterminate | |

Survival Rate Summary

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
|--------|------|-------|--------|---------|---------|--------|--------|--------|---------|-------|---------|
| 0 | N | 5 | 1.0000 | 1.0000 | 1.0000 | | 1.0000 | 1.0000 | 0.0000 | 0.00% | 0.00% |
| 100 | | 5 | 1.0000 | 1.0000 | 1.0000 | | 1.0000 | 1.0000 | 0,0000 | 0.00% | 0.00% |

Angular (Corrected) Transformed Summary

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
|--------|------|-------|--------|---------|---------|--------|--------|--------|---------|-------|---------|
| 0 | N. | 5 | 1.4590 | 1.4580 | 1.4590 | | 1.4590 | 1.4590 | 0.0000 | 0.00% | 0.00% |
| 100 | | 5 | 1.4590 | 1.4580 | 1.4590 | | 1.4590 | 1.4590 | 0.0000 | 0.00% | 0.00% |

Survival Rate Detail

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | |
|--------|------|--------|--------|--------|--------|--------|--|
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1,0000 | |
| 100 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1 0000 | |

Angular (Corrected) Transformed Detail

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | |
|--------|------|--------|--------|--------|--------|--------|--|
| 0 | N | 1.4590 | 1.4590 | 1,4590 | 1.4590 | 1.4590 | |
| 100 | | 1.4590 | 1.4590 | 1,4590 | 1.4590 | 1.4590 | |



Report Date:

02 Nov-21 11:44 (p 2 of 2)

Test Code/ID:

WGR0921.057e / 04-5769-0552

Echaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 10-8487-0012 Analyzed:

02 Nov-21 11:10

Endpoint: Survival Rate

Analysis: Nonparametric-Two Sample

CETIS Version:

Status Level:

007-979-628-1

CETISv1.9.7

Edit Date: 02 Nov-21 11:09

MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4

Editor ID:

02 Nov-21 11:44 (p 1 of 1)

Test Code/ID:

WGR0921.057e / 04-5769-0552

| Eohaustorius | 10-d Survival a | and Reb | urial Sedime | ent Test | | | Aquatic Bioassay & Consulting Labs | | | | |
|---------------------|-----------------|---------|--------------|----------------|--------------------|------|------------------------------------|-----------------------|--------------------------------|-------|----------|
| Batch ID: | 08-2094-1543 | | Test Type: | Survival-Rebur | ial | | | Analyst: | Joe Freas | | |
| Start Date: | 21 Sep-21 13:0 | 10 | Protocol: | EPA/600/R-94 | /025 (1994) | | | Diluent: | Laboratory Sea | water | |
| Ending Date: | 01 Oct-21 13:0 | 0 | Species: | Echaustorius e | stuarius | | | Brine: Not Applicable | | | |
| Test Length: | 10d 0h | | Taxon: | Malacostraca | | | | Source: | Source: Northwestern Aquatic S | | |
| Sample ID: | 12-5715-2191 | | Code: | WGR0921,057 | 7e | | | Project: 021.APC.01 | | | |
| Sample Date: | 09 Sep-21 17:5 | 5 | Material: | Sediment | | | | Source: Bioassay R | | t | |
| Receipt Date: | 13 Sep-21 16:0 | 0 | CAS (PC): | | | | | Station: | SED-003 | | |
| Sample Age: | 11d 19h | | Client: | WGR Southwe | /GR Southwest Inc. | | | | | | |
| Dissolved Oxy | ygen-mg/L | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count |
| 0 | N. | 2 | 10.05 | 9.415 | 10.69 | 10 | 10.1 | 0.035 | 36 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.3 | 7.759 | 12.84 | 10.1 | 10.5 | 0.141 | 4 0.2828 | 2.75% | 0 |
| Overall | | 4 | 10.18 | 9.822 | 10.53 | 10 | 10.5 | 0.110 | 9 0.2217 | 2.18% | 0 (0%) |
| pH-Units | | | | | | 1,4 | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count |
| 0 | N | 2 | 7.75 | 7.115 | 8.385 | 7.7 | 7.8 | 0.0353 | 36 0.07072 | 0.91% | 0 |
| 100 | | 2 | 7.65 | 7.015 | 8.285 | 7.6 | 7.7 | 0.0353 | 35 0.07071 | 0.92% | 0 |
| Overall | | 4 | 7.7 | 7.57 | 7.83 | 7.6 | 7.8 | 0.040 | 32 0.08165 | 1.06% | 0 (0%) |
| Salinity-ppt | | | | | 4.70 | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count |
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | .0 | 0 | 0.00% | 0 |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |

95% LCL 95% UCL

15.49

15.49

14.94

14.21

14.21

14.76

Min

148

148

14,8

Max

14.9

14.9

14.9

Std Err

0.03539

0.03539

0.02887

CV%

0.48%

0.48%

0.39%

QA Count

0

0

0 (0%)

Std Dev

0.07077

0.07077

0.05773

Temperature-°C

Conc-%

0

100

Overall

Code

N

Count

2

2

4

Mean

14.85

14.85

14.85



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs. Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

CLIENT:

WGR Southwest, Inc.

SAMPLE I.D.:

SED-004

DATE RECEIVED:

9/13/2021

ABC LAB. NO .:

WGR1021.058

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00%

EC50 = >100.00 %

Yours very truly,

a Scott Johnson

Laboratory Director

| CETIS | Summary | Report |
|-------|---------|--------|
|-------|---------|--------|

02 Nov-21 11:44 (p 1 of 1)

Test Code/ID:

WGR0921.058e / 07-4874-5125

| | | | | | | | Test | Code/ID: | WGROS | 921.058e / | 07-4874-512 | |
|---------------------|------------------|-------------------|----------------|-----------------|----------------|--------|---------|------------|----------------------------------|------------|---------------|--|
| Eohaustorius | 10-d Survival an | d Reburi | al Sedime | ent Test | | | | Aquatic | Bioassay & | Consultir | ng Labs, Inc. | |
| Batch ID: | 07-5334-1084 | Ti | est Type: | Survival-Reburi | al | | Anal | yst: Joe | Freas | | | |
| Start Date: | 21 Sep-21 13:01 | Pi | rotocol: | EPA/600/R-94/ | 025 (1994) | | Dilue | ent: Lab | oratory Seav | vater | | |
| Ending Date: | 01 Oct-21 13:01 | S | pecies: | Eohaustorius es | stuarius | | Brin | e: Not | Applicable | | | |
| Test Length: | 10d 0h | T | axon: | Malacostraca | | | Sour | ce: Nor | Northwestern Aquatic Scienc Age: | | | |
| Sample ID: | 05-2535-3705 | C | ode: | WGR0921.058 | e | | Proje | ect: 021 | .APC.01 | | | |
| Sample Date: | 09 Sep-21 13:30 | M | aterial: | Sediment | | | Sour | ce: Bio | assay Repor | t | | |
| Receipt Date: | 13 Sep-21 16:00 | C | AS (PC): | | | | Stati | on: SE | D-004 | | | |
| Sample Age: | 12d | C | lient: | WGR Southwes | st Inc. | | | | | | | |
| Single Compa | rison Summary | | | | | | | | 1. 7 | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compari | rison Result | | | |
| 11-0962-2660 | Survival Rate | | Wilco | kon Rank Sum T | wo-Sample | Test | 1.0000 | 100% pas | ssed survival rate | | | |
| Test Acceptability | | | | | | TAC | Limits | | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | | |
| 11-0962-2660 | Survival Rate | | Contro | ol Resp | 1 | 0.9 | >> | Yes | Passes Criteria | | | |
| Survival Rate | Summary | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect | |
| 0 | N | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | | 0.00% | |
| 100 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1,0000 | 0.0000 | 0.0000 | - | 0.00% | |
| Survival Rate | Detail | | | | 7 | 10 | MD | 5: 41B4118 | B2B59AAAB | B2FDAA2 | 3D11B52E4 | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | | |
| 100 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | | |
| Survival Rate | Binomials | | | | | 7 | | | | | | |
| | | Pen 1 Pen 2 Pen 3 | | 3 | | | | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| Conc-% | Code N | Rep 1 20/20 | Rep 2 20/20 | Rep 3 20/20 | Rep 4 20/20 | 20/20 | | | | | | |

Report Date: Test Code/ID: 02 Nov-21 11:44 (p 1 of 2) WGR0921:058e / 07-4874-5125

| Eohaustorius | 10-d Survival a | nd Reburi | al Sedimen | t Test | | | | Aquatic I | Bioassay & | Consultin | ig Labs, In | | |
|--|--|---|--|--|--|-----------------------------|-----------------------------------|--|---|--------------------------------|------------------------------------|--|--|
| Analysis ID: | 11-0962-2660 | Er | dpoint: 5 | Survival Rate | | | CET | IS Version: | CETISv1 | .9.7 | | | |
| Analyzed: | 02 Nov-21 11:13 | Ar Ar | alysis: N | Vonparametric- | Two Sample | 9 | Stat | us Level: | 1 | | | | |
| Edit Date: | 02 Nov-21 11:12 | | and the second second | 41B41182B59A | | | 52E4 Edit | or ID: | Level: 1 ID: 007-979-628-1 It: Joe Freas I: Laboratory Seawater Not Applicable I: Northwestern Aquatic Scienc Age: I: 021,APC.01 I: Bioassay Report | | | | |
| Batch ID: | 07-5334-1084 | Te | st Type: 5 | Survival-Reburia | al | | Ana | lvst: Joe | Freas | | | | |
| Start Date: | 21 Sep-21 13:01 | | | EPA/600/R-94/ | | | Dilu | | | vater | | | |
| | 01 Oct-21 13:01 | | | Eohaustorius es | | | Brin | | the second of the second of | i miai | | | |
| Test Length: | | | | Malacostraca | | | Sou | | A CONTRACTOR CONTRACTOR | quatic Scie | no Age: | | |
| Sample ID: | 05-2535-3705 | C | ode: V | NGR0921 058 | | | Proj | | | , 13173381 | | | |
| | 09 Sep-21 13:30 | | | Sediment | е | | Sou | | | | | | |
| | 13 Sep-21 16:00 | | AS (PC): | seument | | | Stat | | | | | | |
| Sample Age: | | | | NGR Southwes | st Inc. | | Stat | ion. SEL | 7-004 | | | | |
| 10 10 10 10 | | 22.163.3 | 20.0 | 1011 0000111100 | | 041.00.0 | 70.47.0 | _ | | | | | |
| Data Transfor | | Alt Hyp | | | | | son Result | on the state of | | | | | |
| Angular (Corre | ctea) | C > T | | | | 100% pas | sed survival | rate endpoin | t | | | | |
| Wilcoxon Ran | k Sum Two-San | nple Test | | | | | | | | | | | |
| Control | vs Conc-% | | Test St | at Critical | Ties D | F P-Type | P-Value | Decision(| a:5%) | | | | |
| Negative Contr | ol 100 | | 27,5 | - | 1 8 | Exact | 1.0000 | Non-Signif | ficant Effect | | | | |
| Test Acceptab | oility Criteria | TAC | Limits | | | | | | | | | | |
| Attribute | Test Stat | 46.77 | Upper | Overlap | Decision | | | | | | | | |
| Control Resp | 1 | 0.9 | >> | Yes | Passes C | riteria | | | | | | | |
| ANOVA Table | | | | | 2000 | | | | | | | | |
| Source | Sum Squa | | | quare | DF | F Stat | P-Value | Decision(| a:5%) | | | | |
| Between | 0 | 0 | | 1 | | | | Indetermin | ate | | | | |
| Error | 0 | | 0 | | 8 | | | | | | | | |
| Total | 0 | | | | 9 | - | | | | | | | |
| ANOVA Assur | nptions Tests | | | | | | | | | | | | |
| Attribute | Test | | | | Test Stat | Critical | P-Value | Decision(| a:1%) | | | | |
| Variance | Variance F | Ratio F Tes | t | | | | | Indetermin | ate | | | | |
| | variance i | desired a later | | | | | | | nto | | | | |
| Distribution | | | nality Test | | | | | Indetermin | ale | | | | |
| | Shapiro-W | | nality Test | | | | | Indetermin | ale | | | | |
| Survival Rate | Shapiro-W | | mality Test Mean | 95% LCL | 95% UCL | Median | Mín | Indetermin | Std Err | CV% | %Effect | | |
| Survival Rate Conc-% | Shapiro-W Summary Code | /ilk W Norr | Mean | 95% LCL | | Median | 1000 | Max | Std Err | | | | |
| Survival Rate Conc-% | Shapiro-W Summary | ilk W Norr | | 95% LCL 1.0000 1.0000 | 95% UCL 1.0000 1.0000 | Median | Min 1.0000 1.0000 | | 200-2 | CV% 0.00% 0.00% | %Effect 0.00% 0.00% | | |
| Survival Rate Conc-% 0 100 | Shapiro-W Summary Code N | Count 5 5 | Mean 1.0000 1.0000 | 1.0000 | 1.0000 | Median | 1.0000 | Max 1.0000 | Std Err 0.0000 | 0.00% | 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corr | Shapiro-W Summary Code N ected) Transform | Count 5 5 med Summ | Mean 1.0000 1.0000 | 1.0000 1.0000 | 1.0000 1.0000 | | 1.0000 1.0000 | Max 1.0000 1.0000 | Std Err 0.0000 0.0000 | 0.00% | 0.00% 0.00% | | |
| Conc-% | Shapiro-W Summary Code N ected) Transford Code | Count 5 5 med Summ | Mean 1.0000 1.0000 nary | 1.0000 1.0000 95% LCL | 1.0000 1.0000 95% UCL | | 1.0000 1.0000 Min | Max 1.0000 1.0000 | Std Err 0.0000 0.0000 Std Err | 0.00% 0.00% | 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 | Shapiro-W Summary Code N ected) Transform | Count 5 5 med Summ | Mean 1.0000 1.0000 | 1.0000 1.0000 | 1.0000 1.0000 | | 1.0000 1.0000 | Max 1.0000 1.0000 | Std Err 0.0000 0.0000 | 0.00% | 0.00% 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 | Shapiro-W Summary Code N ected) Transfort Code N | Count 5 5 med Summ Count 5 | Mean 1.0000 1.0000 nary Mean 1.4590 | 1.0000 1.0000 95% LCL 1.4580 | 1.0000 1.0000 95% UCL 1.4590 | | 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate | Shapiro-W Summary Code N ected) Transfort Code N | Count 5 5 med Summ Count 5 5 5 | Mean 1.0000 1.0000 nary Mean 1.4590 1.4590 | 1.0000 1.0000 95% LCL 1.4580 1.4580 | 1.0000 1.0000 95% UCL 1.4590 1.4590 | Median | 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% | Shapiro-W Summary Code N ected) Transfort Code N Detail Code | Count 5 5 med Summ Count 5 6 Rep 1 | Mean 1.0000 1.0000 nary Mean 1.4590 1.4590 | 1.0000 1.0000 95% LCL 1.4580 1.4580 | 1.0000 1.0000 95% UCL 1.4590 1.4590 Rep 4 | Median | 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 | Shapiro-W Summary Code N ected) Transfort Code N | Count 5 5 med Summ Count 5 6 Rep 1 1.0000 | Mean 1.0000 1.0000 nary Mean 1.4590 1.4590 Rep 2 1.0000 | 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 1.0000 | 1.0000 1.0000 95% UCL 1.4590 1.4590 Rep 4 1,0000 | Median Rep 5 | 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 | Shapiro-W Summary Code N ected) Transfort Code N Detail Code | Count 5 5 med Summ Count 5 6 Rep 1 | Mean 1.0000 1.0000 nary Mean 1.4590 1.4590 | 1.0000 1.0000 95% LCL 1.4580 1.4580 | 1.0000 1.0000 95% UCL 1.4590 1.4590 Rep 4 | Median | 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 100 | Shapiro-W Summary Code N ected) Transfort Code N Detail Code | Count 5 5 med Summ Count 5 5 Rep 1 1.0000 1.0000 | Mean 1.0000 1.0000 nary Mean 1.4590 1.4590 Rep 2 1.0000 1.0000 | 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 1.0000 | 1.0000 1.0000 95% UCL 1.4590 1.4590 Rep 4 1,0000 | Median Rep 5 | 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 100 | Shapiro-W Summary Code N ected) Transfort Code N Detail Code | Count 5 5 med Summ Count 5 5 Rep 1 1.0000 1.0000 | Mean 1.0000 1.0000 nary Mean 1.4590 1.4590 Rep 2 1.0000 1.0000 | 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 1.0000 | 1.0000 1.0000 95% UCL 1.4590 1.4590 Rep 4 1,0000 | Median Rep 5 | 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% | | |
| Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 100 Angular (Corre | Shapiro-W Summary Code N ected) Transfort Code N Detail Code N | Count 5 5 med Summ Count 5 5 Rep 1 1.0000 1.0000 med Detail | Mean 1.0000 1.0000 nary Mean 1.4590 1.4590 Rep 2 1.0000 1.0000 | 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 1.0000 1.0000 | 1.0000 1.0000 95% UCL 1.4590 1.4590 Rep 4 1.0000 1.0000 | Median Rep 5 1,0000 1,0000 | 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% | | |

Analyst: M QA 7

007-979-628-1

CETIS™ v1.9.7.7

Report Date: Test Code/ID: 02 Nov-21 11:44 (p 2 of 2) WGR0921.058e / 07-4874-5125

Echaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 11-0962-2660 Endpoint: Survival Rate CETIS Version: CETISv1.9.7

Analyzed: 02 Nov-21 11:13 Analysis: Nonparametric-Two Sample Status Level: 1

Edit Date: 02 Nov-21 11:12 MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4 Editor ID: 007-979-628-1

Analyst: Q QA:

007-979-628-1

CETIS™ v1.9.7.7

02 Nov-21 11:44 (p 1 of 1)

Test Code/ID: WGR0921.058e / 07-4874-5125

| Echaustorius 10-d Survival and Reburial Sediment Te | st |
|---|----|
|---|----|

Aquatic Bioassay & Consulting Labs, Inc.

| Batch ID: | 07-5334-1084 | Test Type: | Survival-Reburial | Analyst: | Joe Freas |
|-------------|-----------------|------------|-------------------------|----------|----------------|
| Start Date: | 21 Sep-21 13:01 | Protocol: | EPA/600/R-94/025 (1994) | Diluent: | Laboratory Sea |

Start Date:21 Sep-21 13:01Protocol:EPA/600/R-94/025 (1994)Diluent:Laboratory SeawaterEnding Date:01 Oct-21 13:01Species:Eohaustorius estuariusBrine:Not ApplicableTest Length:10d 0hTaxon:MalacostracaSource:Northwestern Aquatic Scienc Age:

Sample Date: 09 Sep-21 13:30 Material: Sediment Source: Bioassay Report
Receipt Date: 13 Sep-21 16:00 CAS (PC): Station: SED-004

Sample Age: 12d Client: WGR Southwest Inc.

| Dissolved | Oxygen-mg/L |
|-----------|-------------|
|-----------|-------------|

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|-------|---------|---------|-----|------|---------|---------|-------|----------|
| 0 | N | 2 | 10.05 | 9.415 | 10.69 | 10 | 10.1 | 0.03536 | 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.05 | 8.144 | 11.96 | 9.9 | 10.2 | 0.1061 | 0.2121 | 2.11% | 0 |
| Overall | | 4 | 10.05 | 9.845 | 10.26 | 9.9 | 10.2 | 0.06455 | 0.1291 | 1.29% | 0 (0%) |

pH-Units

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|-------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 7.9 | 7,884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.65 | 7.015 | 8,285 | 7.6 | 7.7 | 0.03535 | 0.07071 | 0.92% | 0 |
| Overall | | 4 | 7.775 | 7.536 | 8 014 | 7.6 | 7.9 | 0.075 | 0.15 | 1.93% | 0.(0%) |

Salinity-ppt

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |

Temperature-°C

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|
| 0 | N | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.03539 | 0.07077 | 0.48% | 0 |
| 100 | | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.03539 | 0.07077 | 0.48% | 0 |
| Overall | | 4 | 14.85 | 14.76 | 14.94 | 14.8 | 14.9 | 0.02887 | 0.05773 | 0.39% | 0 (0%) |

Analyst: 2 QA



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs.Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-005
DATE RECEIVED: 9/13/2021
ABC LAB. NO.: WGR1021.059

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Yours Jery truly,

Scott Johnson

Laboratory Director

CETIS Summary Report

Report Date:

02 Nov-21 11:44 (p 1 of 1)

Test Code/ID:

WGR0921.059e / 16-3717-3859

| | | | | | | | rest | Codenb. | WGRU | 921.059e / | 10-2111-2028 | |
|--------------------------------|-----------------|---|-----------------|-----------------|-----------------|-----------------|---------------|-----------|----------------------------------|------------|--------------|--|
| Eohaustorius | | | | Aquatio | : Bioassay & | Consultin | ng Labs, Inc. | | | | | |
| Batch ID: | 02-7155-0715 | Te | est Type: | Survival-Reburi | al | | Anal | yst: Jo | e Freas | | | |
| Start Date: | 21 Sep-21 13;02 | Pr | otocol: | EPA/600/R-94/ | 025 (1994) | | Dilue | ent: La | boratory Seav | vater | | |
| Ending Date: | 01 Oct-21 13:02 | S | oecies: | Echaustorius es | stuarius | | Brine | e: No | Not Applicable | | | |
| Test Length: | 10d 0h | Ta | xon: | Malacostraca | | | Sour | rce: No | Northwestern Aquatic Scienc Age: | | | |
| Sample ID: | 17-6438-0700 | C | ode: | WGR0921.059 | e | | Proje | ect: 02 | 1.APC.01 | | | |
| Sample Date: | 09 Sep-21 15:45 | M | aterial: | Sediment | | | Sour | ce: Bid | assay Repor | t | | |
| Receipt Date: | 13 Sep-21 16:00 | C | AS (PC): | | | | Stati | on: SE | D-005 | | | |
| Sample Age: | 11d 21h | CI | ient: | WGR Southwe | st Inc. | | | | | | | |
| Single Compa | arison Summary | | | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compar | ison Result | | S | |
| 19-1073-9707 | Survival Rate | Wilcoxon Rank Sui | | | wo-Sample | Test | 1.0000 | 100% pa | assed survival rate | | | |
| Test Acceptability | | | | | | TAC | Limits | | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | | |
| 19-1073-9707 | Survival Rate | | Contro | ol Resp | 1 | 0.9 | >> | Yes | Passes Criteria | | | |
| Survival Rate | Summary | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect | |
| 0 | N | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | - | 0.00% | |
| 100 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | - | 0.00% | |
| Survival Rate | Detail | | | | | | MDS | 5: 41B411 | 82B59AAABF | B2FDAA2 | 3D11B52E4 | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | | |
| 7 | | 100000000000000000000000000000000000000 | | | | | | | | | | |
| 100 | | 1.0000 | 1.0000 | | 1.0000 | 1.0000 | | | | | | |
| ***** | | | 1,000 | | 1.0000 | 1.0000 | | | | | | |
| Survival Rate | | | 1,0000 Rep 2 | 1.0000 | 1.0000 Rep 4 | 1.0000 Rep 5 | | | | | | |
| 100 Survival Rate Conc-% | Binomials | 1.0000 | | 1.0000 | | Uni 3 | | | | | | |

Report Date:

02 Nov-21 11:44 (p 1 of 2)

Test Code/ID: WGR0921.059e / 16-3717-3859

| | 10-d Survival a | nd Reburia | al Sedimen | | | Aquat | ic Bioassay & | & Consultin | g Labs, Inc | | | |
|--|---|---|--|--|---|-------|-------------------------------------|--|--|--|--------------------------------|------------------------------------|
| Analysis ID: Analyzed: Edit Date: | 19-1073-9707 02 Nov-21 11:16 02 Nov-21 11:16 | S An | alysis: | Survival Rate Nonparametric- 41B41182B59A | | | A23D11B5 | St | TIS Versio atus Level: litor ID: | | | |
| Batch ID: | 02-7155-0715 | Те | st Type: | Survival-Reburi | al | | | Ar | alyst: J | oe Freas | | |
| Start Date: | 21 Sep-21 13:02 | Pr | otocol: E | EPA/600/R-94/ | 025 (1994 |) | | Di | uent: L | aboratory Sea | water | |
| Ending Date: | 01 Oct-21 13:02 | Sp | ecies: | Eohaustorius es | stuarius | | | Br | ine: N | lot Applicable | | |
| Test Length: | 10d 0h | Ta | xon: N | Valacostraca | | | | So | urce: N | orthwestern A | quatic Scie | nc Age: |
| Sample ID: | 17-6438-0700 | Co | de: \ | NGR0921 059 | e | | | Pr | oject: 0 | 21.APC.01 | | |
| Sample Date: | 09 Sep-21 15:45 | 5 Ma | aterial: 3 | Sediment | | | | So | urce: B | ioassay Repo | rt | |
| Receipt Date: | 13 Sep-21 16:00 | CA | AS (PC): | | | | | St | ation: S | ED-005 | | |
| Sample Age: | 11d 21h | Cli | ient: \ | WGR Southwes | st Inc. | | | | | | | |
| Data Transfor | m | Alt Hyp | | | | | Comparis | on Resul | t | | | |
| Angular (Correc | cted) | C>T | | | | = 1 | 100% pas | sed surviv | al rate endp | oint | | |
| Wilcoxon Ran | k Sum Two-San | nple Test | | | | | | | | | | |
| Control | vs Conc-% | | Test St | at Critical | Ties | DF | P-Type | P-Value | Decisio | n(a:5%) | | |
| Negative Contro | ol 100 | | 27.5 | (***) | 1 | В | Exact | 1.0000 | Non-Sig | nificant Effec | t | |
| Test Acceptab | oility Criteria | TAC | Limits | | | | | | | | | |
| Attribute | Test Stat | | Upper | Overlap | Decisio | n | | | | | | |
| Control Resp | 1 | 0.9 | >> | Yes | Passes | Crite | eria | | | | | |
| ANOVA Table | | | | | | | | | | | | |
| Source | Sum Squ | ares | Mean S | quare | DF | | F Stat | P-Value | Decisio | n(α:5%) | | |
| Between | 0 | | 0 | | 1 | | | | Indeterr | ninate | | |
| Error | 0 | | 0 | | 8 | | | | | | | |
| and the second | | | | | | | | | | | | |
| Total | 0 | | | | 9 | | | | | | | |
| ANOVA Assun | | | | | 9 | | | | | | | |
| | | | | | 9 Test Sta | at (| Critical | P-Value | Decisio | οπ(α:1%) | | |
| ANOVA Assun Attribute | nptions Tests Test | Ratio F Tes | t | | | at (| Critical | P-Value | Decision Indeterm | | | |
| ANOVA Assun Attribute | nptions Tests Test Variance F | Ratio F Tes /ilk W Norm | | | | at (| Critical | P-Value | | ninate | | |
| ANOVA Assum Attribute Variance Distribution | nptions Tests Test Variance F Shapiro-W | | | | | at (| Critical | P-Value | Indeterr | ninate | | |
| ANOVA Assun Attribute Variance | nptions Tests Test Variance F Shapiro-W | | | 95% LCL | | | Critical Median | P-Value Min | Indeterr | ninate | CV% | %Effect |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% | nptions Tests Test Variance F Shapiro-W Summary | /ilk W Norn | nality Test | 95% LCL 1.0000 | Test Sta | | | | Indeterr Indeterr | ninate ninate | CV% | %Effect 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% | Test Variance F Shapiro-W Summary Code | /ilk W Norm | nality Test Mean | 20000 | Test St | | | Min | Indeterr Indeterr Max | minate minate Std Err | 0.0.0 | (050077 |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 | Test Variance F Shapiro-W Summary Code | Count 5 5 | Mean 1,0000 1,0000 | 1.0000 | 95% UC | | | Min 1.0000 | Indeterr Indeterr Max 1.0000 | ninate ninate Std Err 0.0000 | 0.00% | 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 | rest Test Variance F Shapiro-W Summary Code N | Count 5 5 | Mean 1,0000 1,0000 | 1.0000 | 95% UC | L | | Min 1.0000 | Indeterr Indeterr Max 1.0000 | ninate ninate Std Err 0.0000 | 0.00% | 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre | Test Variance F Shapiro-W Summary Code N ected) Transfore | Count 5 5 med Sumn | Mean 1,0000 1,0000 nary | 1.0000 | 95% UC 1.0000 1.0000 | L | Median | Min 1.0000 1.0000 | Max 1.0000 1.0000 | Std Err 0.0000 0.0000 | 0.00% | 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre | Test Variance F Shapiro-W Summary Code N ected) Transfore | Count 5 5 med Sumn Count | Mean 1,0000 1,0000 nary Mean | 1,0000 1,0000 95% LCL | 95% UC | L | Median | Min 1.0000 1.0000 Min | Max 1.0000 1.0000 Max | Std Err 0.0000 0.0000 Std Err | 0.00% 0.00% | 0.00% 0.00% %Effect |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 | Test Variance F Shapiro-W Summary Code N ected) Transfore Code N | Count 5 5 med Summ Count 5 | Mean 1,0000 1,0000 mary Mean 1,4590 | 1.0000 1.0000 95% LCL 1.4580 | 95% UC 1.0000 1.0000 95% UC | L | Median | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate | Test Variance F Shapiro-W Summary Code N ected) Transfore Code N | Count 5 5 med Summ Count 5 | Mean 1,0000 1,0000 mary Mean 1,4590 | 1.0000 1.0000 95% LCL 1.4580 | 95% UC 1.0000 1.0000 95% UC | L | Median | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate | Test Variance F Shapiro-W Summary Code N ected) Transford Code N | Count 5 5 med Summ Count 5 5 5 | Mean 1,0000 1,0000 mary Mean 1,4590 1,4590 | 1.0000 1.0000 95% LCL 1.4580 1.4580 | 95% UC 1.0000 1.0000 95% UC 1.4590 1.4590 | L | Median Median | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% | rest Test Variance F Shapiro-W Summary Code N ected) Transford Code N Detail Code | Count 5 5 med Summ Count 5 5 Rep 1 | Mean 1,0000 1,0000 mary Mean 1,4590 1,4590 Rep 2 | 1.0000 1.0000 95% LCL 1.4580 1.4580 | 95% UC 1.0000 1.0000 95% UC 1.4590 1.4590 Rep 4 | L | Median Median Rep 5 | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 100 Survival Rate | rest Test Variance F Shapiro-W Summary Code N ected) Transford Code N Detail Code | Count 5 5 7 7 7 7 7 8 7 7 8 7 8 7 8 7 7 8 7 7 8 7 | Mean 1,0000 1,0000 mary Mean 1,4590 1,4590 Rep 2 1,0000 1,0000 | 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 1.0000 | 95% UC 1.0000 1.0000 95% UC 1.4590 1.4590 Rep 4 | L | Median Median Rep 5 | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 100 Survival Rate | rests Test Variance F Shapiro-W Summary Code N ected) Transford Code N Detail Code | Count 5 5 7 7 7 7 7 8 7 7 8 7 8 7 8 7 7 8 7 7 8 7 | Mean 1,0000 1,0000 mary Mean 1,4590 1,4590 Rep 2 1,0000 1,0000 | 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 1.0000 | 95% UC 1.0000 1.0000 95% UC 1.4590 1.4590 Rep 4 | L | Median Median Rep 5 | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| ANOVA Assum Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 100 Angular (Corre | Test Variance F Shapiro-W Summary Code N ected) Transford Code N Detail Code N | Count 5 5 med Summ Count 5 5 Rep 1 1.0000 1.0000 med Detail | Mean 1,0000 1,0000 nary Mean 1,4590 1,4590 Rep 2 1,0000 1,0000 | 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 1.0000 1.0000 | 95% UC 1.0000 1.0000 95% UC 1.4590 1.4590 Rep 4 1.0000 1.0000 | L 1 | Median Median Rep 5 1,0000 1,0000 | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |

Analyzed:

Edit Date:

Report Date: Test Code/ID:

02 Nov-21 11:44 (p 2 of 2) WGR0921.059e / 16-3717-3859

Echaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

CETISV1.9.7

Analysis ID: 19-1073-9707 02 Nov-21 11:16 02 Nov-21 11:16

Endpoint: Survival Rate

Analysis: Nonparametric-Two Sample

CETIS Version:

MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4

Status Level:

Editor ID: 007-979-628-1

Q QA: Z

007-979-628-1 CETIS™ v1.9.7.7

02 Nov-21 11:44 (p 1 of 1)

Test Code/ID:

WGR0921.059e / 16-3717-3859

| | | | | | | | | - a v c.d. iz. d. iz. d. | | | 4 | |
|---------------|------------------|--------|-------------|----------------|--------------|------|-----------|------------------------------|-----------------|-------------|---------------|--|
| Eohaustorius | 10-d Survival ar | nd Reb | urial Sedim | ent Test | | | | Aqu | atic Bioassay 8 | Consulti | ng Labs, Inc. | |
| Batch ID: | 02-7155-0715 | | Test Type: | Survival-Rebui | rial | | | Analyst: | Joe Freas | | | |
| Start Date: | 21 Sep-21 13:02 | 2 | Protocol: | EPA/600/R-94 | /025 (1994) | | | Diluent: Laboratory Seawater | | | | |
| Ending Date: | 01 Oct-21 13:02 | | Species: | Echaustorius e | estuarius | | | Brine: Not Applicable | | | | |
| Test Length: | 10d 0h | | Taxon: | Malacostraca | Malacostraca | | | Source: | Northwestern A | quatic Scie | enc Age: | |
| Sample ID: | 17-6438-0700 | | Code: | WGR0921.059 | Эе | | | Project: | 021.APC.01 | | | |
| Sample Date: | 09 Sep-21 15:45 | j | Material: | Sediment | | | | Source: | Bioassay Repo | rt | | |
| Receipt Date: | 13 Sep-21 16:00 |) | CAS (PC): | | | | | Station: | SED-005 | | | |
| Sample Age: | 11d 21h | | Client: | WGR Southwe | est Inc. | | | | | | | |
| Dissolved Oxy | ygen-mg/L | | | | | | | | 70 | | 7.00 | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count | |
| 0 | N | 2 | 10.05 | 9,415 | 10.69 | 10 | 10.1 | 0.035 | 36 0.07073 | 0.70% | 0 | |
| 100 | | 2 | 10,15 | 9,515 | 10.79 | 10.1 | 10.2 | 0.035 | 35 0.0707 | 0.70% | 0 | |
| Overall | | 4 | 10.1 | 9.97 | 10.23 | 10 | 10,2 | 0.040 | 82 0.08165 | 0.81% | 0 (0%) | |
| pH-Units | | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count | |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 | |
| 100 | | 2 | 7.75 | 7,115 | 8.385 | 7.7 | 7.8 | 0.035 | 36 0.07072 | 0.91% | 0 | |
| Overall | | 4 | 7.825 | 7.673 | 7.977 | 7.7 | 7.9 | 0.047 | 87 0.09574 | 1.22% | 0 (0%) | |
| Salinity-ppt | | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count | |
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 | |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 | |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) | |
| Temperature- | °C | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count | |
| 0 | N | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0,035 | 39 0.07077 | 0.48% | 0 | |
| LOS . | | | | 10 C E/4 | 102 301 | 100 | 10 (2)(2) | 15.655 | cal who was the | - 051 | | |

Analyst_ A QA_T

007-979-628-1

100

Overall

2

4

14.85

14.85

14.21

14.76

15.49

14.94

14.8

14.8

14.9

14.9

0.03539

0.02887

0.07077

0.05773

0.48%

0.39%

0

0 (0%)

CETIS™ v1.9.7.7



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs. Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

CLIENT:

WGR Southwest, Inc.

SAMPLE I.D.:

SED-006

DATE RECEIVED:

9/13/2021

ABC LAB. NO .:

WGR1021.060

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 %

EC50 = >100.00%

Yours very truly,

M Scott Johnson

Laboratory Director

CETIS Summary Report

Report Date:

02 Nov-21 11:44 (p 1 of 1)

Test Code/ID: WGR0921.060e / 01-4298-0789

| | | | | | | | rest | Code/ID: | WGRUS | 1/ 9000.126 | J1-4290-U/05 |
|-------------------------|------------------|----------------|--|-----------------|----------------|----------------|---------------------|-----------|---------------------------------|-------------|--------------|
| Eohaustorius | 10-d Survival an | d Rebur | ial Sedime | ent Test | | | | Aquatio | Bioassay & | Consultin | g Labs, Inc. |
| Batch ID: | 07-8930-3274 | T | est Type: | Survival-Reburi | al | | Anal | yst: Jo | e Freas | | |
| Start Date: | 21 Sep-21 13:03 | P | rotocol: | EPA/600/R-94/ | 025 (1994) | | Dilue | ent: La | poratory Seav | vater | |
| Ending Date: | 01 Oct-21 13:03 | S | pecies: | Eohaustorius es | stuarius | | Brine: | | Not Applicable | | |
| Test Length: | 10d 0h | T | axon: | Malacostraca | | | Sour | rce: No | Northwestern Aquatic Scienc Age | | |
| Sample ID: | 09-5071-1228 | С | ode: | WGR0921.060 | e | | Project: 021.APC.01 | | | | |
| Sample Date: | 09 Sep-21 10:25 | M | laterial: | Sediment | | | Sour | rce: Bio | assay Repor | | |
| Receipt Date: | 13 Sep-21 16:00 | C | AS (PC): | | | | Stati | on: SE | D-006 | | |
| Sample Age: | 12d 3h | C | lient: | WGR Southwes | | | | | | | |
| Single Compa | rison Summary | | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compari | son Result | | S |
| 19-6872-9929 | Survival Rate | | Wilcoxon Rank Sum Two-Sample Test 0.5000 100% passed survival rate | | | | | | rate | | |
| Test Acceptat | oility | | | | | TAC | Limits | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | |
| 19-6872-9929 | Survival Rate | | Contro | ol Resp | 1 | 0.9 | >> | Yes | Passes C | riteria | |
| Survival Rate | Summary | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | N | 5 | 1.0000 | 1,0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | · · | 0.00% |
| 100 | | 5 | 0.990 | 0.9622 | 1.0180 | 0.9500 | 1.0000 | 0.0100 | 0.0224 | 2.26% | 1.00% |
| Survival Rate | Detail | | | | | 4.7 | MD | 5: 15A6E9 | 300CFE050D | 39B6D7C5 | 6B2CBB62 |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| 0 | N | 1.0000 | 1.0000 | 1,0000 | 1.0000 | 1.0000 | | | | | |
| 100 | | 0.9500 | 1.0000 | 1,0000 | 1.0000 | 1,0000 | | | | | |
| | Binomials | | | | | | | | | | |
| Survival Rate | | | | | | | | | | | |
| | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| Survival Rate Conc-% | Code N | Rep 1 20/20 | Rep 2 20/20 | Rep 3 20/20 | Rep 4 20/20 | Rep 5 20/20 | | | | | |

007-979-628-1 CETIS™ v1.9.7.7

02 Nov-21 11:44 (p 1 of 2)

| W. 7 | | |
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| Test | Code/ID: | |

| | The Part of Section 10 to 10 t | |
|---------|--|-----|
| WGR0921 | .060e / 01-4298-07 | 189 |

| Collanstolins | 10-d | Survival an | d Rebui | rial Sedime | ent Test | | | | Aqu | atic B | lioassay 8 | Consultin | ng Labs, Ind |
|--|--|---|--|--|---|---|---|---|---|---|---|-----------------------|------------------------------------|
| Analysis ID: Analyzed: Edit Date: | 02 N | 372-9929 ov-21 11:19 ov-21 11:19 | | indpoint: inalysis: MD5 Hash: | Survival Rate Nonparametr 15A6E93000 | ic-Two Sampl | | s | ETIS Vers tatus Leve ditor ID: | | CETISy 1 007-979 | | |
| Batch ID: Start Date: Ending Date: | 07-89 21 Se | 930-3274 ep-21 13:03 | 7 P | | Survival-Rebi EPA/600/R-9 Eohaustorius | urial 4/025 (1994) | 2,00002 | A | nalyst: iluent: rine: | | | | |
| Test Length: | | | | axon: | Malacostraca | | | | ource: | | A Committee of | quatic Scie | nc Age: |
| Sample ID: | | 071-1228 | | ode: | WGR0921.0 | 50e | | P | roject: | | | | |
| Sample Date: Receipt Date: Sample Age: | 13 \$6 | ep-21 16:00 | C | Material: CAS (PC): Client: | Sediment WGR Southv | vest Inc. | | | ource: tation: | Bioas SED | ssay Repor -006 | t | |
| Data Transfor | m | | Alt Hy | n | | | Compari | son Resi | ılt | | - | | PMSD |
| Angular (Corre | | | C>T | - | | | | | val rate end | dpoint | | | 2.36% |
| Wilcoxon Ran | k Sun | n Two-Sam | ple Test | | | | | | | | | | |
| Control | VS | Conc-% | | Test S | tat Critical | Ties D | F P-Type | P-Valu | e Decis | sion(o | (:5%) | | |
| Negative Contr | ol | 100 | | 25 | - | 1 8 | Exact | 0,5000 | | _ | cant Effect | | |
| Test Acceptat | oility (| Criteria | TA | C Limits | | | | | | | | | |
| Attribute | • | Test Stat | Lower | Upper | Overlag | Decision | | | | | | | |
| Control Resp | | 1 | 0.9 | >> | Yes | Passes C | | | | _ | | | |
| ANOVA Table | | - | | | | | | | | _ | | | |
| Source | | Sum Squa | res | Mean | Square | DF | F Stat | P-Valu | e Decis | sion(a | (:5%) | | |
| Between | | 0.0012877 | | 0.0012 | | 1 | 1 | 0,3466 | | - | cant Effect | - | - |
| Error | | 0.0102014 | | 0.0012 | 877 | 8 | | | | | | | |
| | | 0.0103014 | | 0.00 | .011 | 4 14 44 44 | | | | | | | |
| | = 1 | 0.0103014 | | 3.50 (1 | .5.(1) | 9 | _ | | | | | | |
| Total | nptior | 0.0115891 | | | | | | | | | | | _ |
| Total ANOVA Assun | nption | 0.0115891 | | | | 9 | Critical | P-Valu | e Decis | sion(a | ::1%) | | |
| Total ANOVA Assun Attribute | nption | 0.0115891 ns Tests Test | | | | | Critical | P-Valu 0.0285 | | sion(d | | | |
| Total ANOVA Assun Attribute | nptior | 0.0115891 ns Tests | uality of \ | /ariance Te y of Varianc | st | 9 Test Stat | - F-27.7.2.2.X | | Equa Equa | | nces | | |
| Total ANOVA Assun Attribute Variance | nption | 0.0115891 ns Tests Test Levene Equ Mod Leven | uality of \ e Equalit atio F Te | /ariance Te y of Variand | st | 9 Test Stat 7.111 | 11.26 | 0.0285 | Equa Equa Indete | l Varia I Varia ermina | nces | on | |
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Report Date:

02 Nov-21 11:44 (p 2 of 2)

Test Code/ID:

WGR0921.060e / 01-4298-0789

Echaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 19-6872-9929 Analyzed: 02 Nov-21 11:1

Edit Date:

02 Nov-21 11:19 02 Nov-21 11:19 Endpoint: Survival Rate

Analysis: Nonparametric-Two Sample

MD5 Hash: 15A6E9300CFE050D39B6D7C56B2CBB62

CETIS Version: Status Level:

Editor ID:

007-979-628-1

CETISv1.9.7

02 Nov-21 11:44 (p 1 of 1)

Test Code/ID:

WGR0921.060e / 01-4298-0789

| Editidatorias 10 a cartiful dia Repartal ocument 163t | Eohaustorius | 10-d Survival an | nd Reburial Sediment | Test |
|---|--------------|------------------|----------------------|------|
|---|--------------|------------------|----------------------|------|

Aquatic Bioassay & Consulting Labs, Inc.

| Batch ID: | 07-8930-3274 | Test Type: | Survival-Reburial | Analyst: | Joe Freas |
|---------------------|-----------------|------------|-------------------------|----------|----------------------------------|
| Start Date: | 21 Sep-21 13:03 | Protocol: | EPA/600/R-94/025 (1994) | Diluent: | Laboratory Seawater |
| Ending Date: | 01 Oct-21 13:03 | Species: | Eohaustorius estuarius | Brine: | Not Applicable |
| Test Length: | 10d 0h | Taxon: | Malacostraca | Source: | Northwestern Aquatic Scienc Age: |

 Sample ID:
 09-5071-1228
 Code:
 WGR0921.060e
 Project:
 021.APC.01

 Sample Date:
 09 Sep-21 10:25
 Material:
 Sediment
 Source:
 Bioassay Report

 Receipt Date:
 13 Sep-21 16:00
 CAS (PC):
 Station:
 SED-006

Sample Age: 12d 3h Client: WGR Southwest Inc.

| Dissolved | Oxygen-mg/L |
|-----------|-------------|
| DISSUIVEG | CAYGOTTINGE |

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|
| 0 | N | 2 | 10.05 | 9.415 | 10.69 | 10 | 10.1 | 0.03536 | 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.15 | 9.515 | 10.79 | 10.1 | 10.2 | 0,03535 | 0.0707 | 0.70% | 0 |
| Overall | | 4 | 10.1 | 9.97 | 10.23 | 10 | 10.2 | 0.04082 | 0.08165 | 0.81% | 0 (0%) |

pH-Units

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|-----------------|
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0,00% | 0 |
| 100 | | 2 | 7.8 | 6.529 | 9.071 | 7.7 | 7.9 | 0.07071 | 0.1414 | 1.81% | 0 |
| Overall | | 4 | 7.85 | 7.691 | 8.009 | 7.7 | 7.9 | 0.05 | 0.1 | 1.27% | 0 (0%) |

Salinity-ppt

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |

Temperature-°C

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|---------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|
| 0 | N | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.03539 | 0.07077 | 0.48% | 0 |
| 100 | | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.03539 | 0.07077 | 0.48% | 0 |
| Overall | | 4 | 14.85 | 14.76 | 14.94 | 14.8 | 14.9 | 0.02887 | 0.05773 | 0.39% | 0 (0%) |

Analyst, A QA Z

007-979-628-1 CETIS™ v1.9.7.7



November 2, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs. Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-007
DATE RECEIVED: 9/13/2021
ABC LAB. NO.: WGR1021.061

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Yours very truly,

Scott Johnson

Laboratory Director

02 Nov-21 11:45 (p 1 of 1)

Test Code/ID: WGR0921.061e / 18-3199-4422

| | | | | | | | rest | Code/ID: | WGRUS | 321.061e7 | 18-3199-442 |
|---------------|------------------|-----------|-----------|-----------------|------------|--------|---------|------------|--------------|-------------|---------------|
| Eohaustorius | 10-d Survival an | d Reburia | al Sedime | ent Test | | | | Aquatic | Bioassay & | Consultir | ng Labs, Inc. |
| Batch ID: | 09-6416-4429 | Te | st Type: | Survival-Reburi | al | | Anal | lyst: Joe | Freas | | |
| Start Date: | 21 Sep-21 13:04 | Pr | otocol: | EPA/600/R-94/ | 025 (1994) | | Dilu | ent: Lab | oratory Seav | vater . | |
| Ending Date: | 01 Oct-21 13:04 | Sp | ecies: | Eohaustorius es | stuarius | | Brin | e; Not | Applicable | | |
| Test Length: | 10d 0h | Ta | xon: | Malacostraca | | | Sou | rce: Nor | thwestern Ad | quatic Scie | nc Age: |
| Sample ID: | 01-7535-3971 | Co | de: | WGR0921.061 | e | | Proj | ect: 021 | .APC,01 | | |
| Sample Date: | 09 Sep-21 11:30 | Ma | iterial: | Sediment | | | Sou | rce: Bio | assay Report | t | |
| Receipt Date: | 13 Sep-21 16:00 | CA | S (PC): | | | | Stati | ion: SE | D-007 | | |
| Sample Age: | 12d 2h | Cli | ent: | WGR Southwes | st Inc. | | | | | | |
| Single Compa | rison Summary | | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Comparis | son Result | | - 13 |
| 03-2868-0927 | Survival Rate | | Wilco | kon Rank Sum T | wo-Sample | Γest | 1.0000 | 100% pas | sed survival | rate | |
| Test Acceptat | oility | | | | | TAC | Limits | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | |
| 03-2868-0927 | Survival Rate | | Contro | ol Resp | 1 | 0.9 | >> | Yes | Passes C | riteria | |
| Survival Rate | Summary | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | N | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | *** | 0.00% |
| 100 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | | 0.00% |
| Survival Rate | Detail | | | | | 20.0 | MD | 5: 41B4118 | 2B59AAABF | B2FDAA2 | 3D11B52E4 |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | |
| 100 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | |
| Survival Rate | Binomials | | | | | | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| 0 | N | 20/20 | 20/20 | 20/20 | 20/20 | 20/20 | | | | | |
| 100 | | 20/20 | 20/20 | 20/20 | 20/20 | 20/20 | | | | | |

Report Date:

02 Nov-21 11:45 (p 1 of 2)

Test Code/ID: WGR0921.061e / 18-3199-4422

| | 10-d | Survival ar | nd Reburia | I Sedime | nt Test | | | | Aquatio | c Bioassay & | Consultin | g Labs, Inc |
|---|--------|--|---|--|---|---|------------------------------|--|---------------------------------------|--|--------------------------------|------------------------------------|
| Analysis ID: Analyzed: Edit Date: | 02 N | 868-0927 lov-21 11:23 lov-21 11:23 | An | dpoint: alysis: 5 Hash: | Survival Rate Nonparametric- 41B41182B59A | | | Stat | 'IS Versior us Level: or ID; | 1 CETISv1 1 007-979 | | |
| Batch ID: | 09-6 | 416-4429 | Tes | st Type: | Survival-Reburi | al | | Ana | lyst: Jo | e Freas | | |
| Start Date: | 21 S | ep-21 13:04 | Pro | tocol: | EPA/600/R-94/ | 025 (1994) | | Dilu | ent: La | boratory Seav | vater | |
| Ending Date: | 01 0 | ct-21 13:04 | Sp | ecies: | Eohaustorius e | stuarius | | Brin | e: No | ot Applicable | | |
| Test Length: | 10d | Oh | Tax | con: | Malacostraca | | | Sou | rce: No | orthwestern A | quatic Scien | nc Age: |
| Sample ID: | 01-7 | 535-3971 | Co | de: | WGR0921.061 | e | | Proj | ect: 02 | 21.APC.01 | | |
| Sample Date: | 09 S | ep-21 11:30 | Ma | terial: | Sediment | | | Sou | rce: Bi | oassay Repor | t | |
| Receipt Date: | 13 S | ep-21 16:00 | CA | S (PC): | | | | Stat | ion: SE | ED-007 | | |
| Sample Age: | 12d | 2h | Cli | ent: | WGR Southwe | st Inc. | | | | | | |
| Data Transfor | m | | Alt Hyp | | | | Compariso | n Result | | | | |
| Angular (Corre | cted) | | C > T | | | | 100% passe | ed survival | rate endpo | int | | |
| Wilcoxon Ran | k Su | m Two-Sam | ple Test | | | | | | | | | |
| Control | vs | Conc-% | | Test S | tat Critical | Ties Di | P-Type | P-Value | Decision | n(a:5%) | | |
| Negative Contro | ol | 100 | | 27.5 | | 1 8 | Exact | 1.0000 | Non-Sign | nificant Effect | | |
| Test Acceptab | oility | Criteria | TAC | Limits | | | | | 1272 | | | |
| Attribute | | Test Stat | | Upper | Overlap | Decision | | | | | | |
| Control Resp | | 1 | 0.9 | >> | Yes | Passes C | riteria | | | | | |
| ANOVA Table | | | | | | | | | | | | |
| Source | | Sum Squa | ires | Mean | Square | DF | F Stat | P-Value | Decision | n(a:5%) | | |
| Between | | 0 | | 0 | | 1 | | | Indeterm | inate | | |
| Error | | 0 | | 0 | | 8 | | | | | | |
| Total | | 0 | | | | 9 | _ | | | | | |
| | | O. | | | | 3 | | | | | | |
| ANOVA Assun | nptio | 2 | | - | | 3 | | | | | | |
| | nptio | 2 | | | | Test Stat | Critical | P-Value | Decision | n(a:1%) | | |
| Attribute | nptio | ns Tests Test | atio F Test | | | Control S | Critical | P-Value | Decision | | | |
| Attribute Variance | nptio | ns Tests Test Variance R | atio F Test | | | Control S | Critical | P-Value | | inate | | |
| Attribute Variance Distribution | | ns Tests Test Variance R Shapiro-W | | | 1 | Control S | Critical | P-Value | Indeterm | inate | | |
| Attribute Variance Distribution Survival Rate | | ns Tests Test Variance R Shapiro-W | | | 95% LCL | Control S | | P-Value Min | Indeterm | inate | CV% | %Effect |
| Attribute Variance Distribution Survival Rate Conc-% | | ns Tests Test Variance R Shapiro-W | ilk W Norm | ality Test | 95% LCL | Test Stat | | | Indeterm Indeterm | ninate ninate | CV% | %Effect 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% | | ns Tests Test Variance R Shapiro-W mary Code | ilk W Norm | ality Test Mean | 95% LCL | Test Stat | | Min | Indeterm Indeterm Max | ninate ninate Std Err | | A.C |
| Attribute Variance Distribution Survival Rate Conc-% | Sumi | ns Tests Test Variance R Shapiro-W mary Code N | Count 5 5 | Mean 1.0000 | 95% LCL | 95% UCL | | Min 1.0000 | Indeterm Indeterm Max 1,0000 | sinate sinate Std Err 0.0000 | 0.00% | 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre | Sumi | ns Tests Test Variance R Shapiro-W mary Code N | Count 5 5 | Mean 1.0000 | 95% LCL | 95% UCL | Median | Min 1.0000 | Indeterm Indeterm Max 1,0000 | sinate sinate Std Err 0.0000 | 0.00% | 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre | Sumi | ns Tests Test Variance R Shapiro-W mary Code N Transform | Count 5 5 ned Summ | Mean 1.0000 1.0000 | 95% LCL 95% LCL | 95% UCL 1,0000 1,0000 | Median | Min 1.0000 1.0000 | Max 1,0000 1,0000 | Std Err 0,0000 0.0000 | 0.00% | 0.00% 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre | Sumi | ns Tests Test Variance R Shapiro-W mary Code N Transform Code | Count 5 5 ned Summ | Mean 1.0000 1.0000 ary Mean | 95% LCL 1.0000 1.0000 95% LCL 1.4580 | 95% UCL 1.0000 1.0000 | Median | Min 1.0000 1.0000 | Max 1,0000 1,0000 Max | Std Err 0,0000 0.0000 Std Err | 0.00% 0.00% | 0.00% 0.00% %Effect |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 | Sumi | ns Tests Test Variance R Shapiro-W mary Code N Transform Code N | Count 5 5 need Summ Count 5 | Mean 1.0000 1.0000 ary Mean 1.4590 | 95% LCL 1.0000 1.0000 95% LCL 1.4580 | 95% UCL 1.0000 1.0000 95% UCL 1.4590 | Median | Min 1.0000 1.0000 Min 1.4590 | Max 1,0000 1,0000 Max 1,4590 | Std Err 0,0000 0,0000 Std Err 0,0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 100 Angular (Corre Conc-%) 100 Survival Rate | Sumi | ns Tests Test Variance R Shapiro-W mary Code N Transform Code N | Count 5 5 need Summ Count 5 | Mean 1.0000 1.0000 ary Mean 1.4590 | 95% LCL 1.0000 1.0000 95% LCL 1.4580 1.4580 | 95% UCL 1.0000 1.0000 95% UCL 1.4590 | Median | Min 1.0000 1.0000 Min 1.4590 | Max 1,0000 1,0000 Max 1,4590 | Std Err 0,0000 0,0000 Std Err 0,0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 100 Angular (Corre Conc-% 1100 Survival Rate Conc-% Conc-% Conc-% Conc-% Conc-% Conc-% Conc-% Conc-% Conc-% | Sumi | ns Tests Test Variance R Shapiro-W mary Code N Transform Code N | Count 5 5 ned Summ Count 5 5 5 | Mean 1.0000 1.0000 ary Mean 1.4590 | 95% LCL 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 | 95% UCL 1.0000 1.0000 95% UCL 1.4590 1.4590 | Median Median | Min 1.0000 1.0000 Min 1.4590 | Max 1,0000 1,0000 Max 1,4590 | Std Err 0,0000 0,0000 Std Err 0,0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate | Sumi | ns Tests Test Variance R Shapiro-W mary Code N Transform Code N | Count 5 5 ned Summ Count 5 5 Rep 1 | Mean 1,0000 1,0000 ary Mean 1,4590 1,4590 Rep 2 | 95% LCL 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 | 95% UCL 1,0000 1,0000 95% UCL 1,4590 1,4590 Rep 4 | Median Median Rep 5 | Min 1.0000 1.0000 Min 1.4590 | Max 1,0000 1,0000 Max 1,4590 | Std Err 0,0000 0,0000 Std Err 0,0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 100 | Sumi | ns Tests Test Variance R Shapiro-W mary Code N Transform Code N Code N | Count 5 5 5 med Summ 5 5 5 Fep 1 1.0000 1.0000 | Mean 1.0000 1.0000 ary Mean 1.4590 1.4590 Rep 2 | 95% LCL 1.0000 1.0000 95% LCL 1.4580 1.4580 Rep 3 | 95% UCL 1.0000 1.0000 95% UCL 1.4590 1.4590 Rep 4 | Median Median Rep 5 1.0000 | Min 1.0000 1.0000 Min 1.4590 | Max 1,0000 1,0000 Max 1,4590 | Std Err 0,0000 0,0000 Std Err 0,0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 100 Angular (Corre | Sumi | ns Tests Test Variance R Shapiro-W mary Code N Transform Code N Code N | Count 5 5 ned Summ Count 5 5 Rep 1 1.0000 1.0000 ned Detail | Mean 1,0000 1,0000 ary Mean 1,4590 1,4590 Rep 2 1,0000 1,0000 | 95% LCL 1.0000 95% LCL 1.4580 1.4580 Rep 3 1.0000 | 95% UCL 1.0000 1.0000 95% UCL 1.4590 1.4590 Rep 4 | Median Rep 5 1.0000 1.0000 | Min 1.0000 1.0000 Min 1.4590 | Max 1,0000 1,0000 Max 1,4590 | Std Err 0,0000 0,0000 Std Err 0,0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| ANOVA Assurd Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Angular (Corre | Sumi | ns Tests Test Variance R Shapiro-W mary Code N Transform Code N Code N | Count 5 5 5 med Summ 5 5 5 Fep 1 1.0000 1.0000 | Mean 1.0000 1.0000 ary Mean 1.4590 1.4590 Rep 2 | 95% LCL 1.0000 95% LCL 1.4580 1.4580 Rep 3 1.0000 Rep 3 | 95% UCL 1.0000 1.0000 95% UCL 1.4590 1.4590 Rep 4 1.0000 1.0000 | Median Median Rep 5 1.0000 | Min 1.0000 1.0000 Min 1.4590 | Max 1,0000 1,0000 Max 1,4590 | Std Err 0,0000 0,0000 Std Err 0,0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |

Analyst 0 OA

007-979-628-1

CETIS™ v1.9.7.7

Report Date:

02 Nov-21 11:45 (p 2 of 2)

Test Code/ID:

WGR0921.061e / 18-3199-4422

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 03-2868-0927 Analyzed:

02 Nov-21 11:23

Endpoint: Survival Rate

CETIS Version:

Status Level:

CETISv1.9.7

Edit Date:

02 Nov-21 11:23

Analysis: Nonparametric-Two Sample

MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4 Editor ID:

007-979-628-1

02 Nov-21 11:45 (p 1 of 1)

Test Code/ID:

WGR0921 061e / 18-3199-4422

| | | | | | | | | LOSE GOGE | | 3321 00167 | 10-0100-4122 |
|---------------|-----------------|---------|--------------|----------------|-------------|-----|------|-----------|----------------|-------------------|---------------|
| Eohaustorius | 10-d Survival a | and Reb | urial Sedime | ent Test | | | | Aqu | atic Bioassay | & Consulti | ng Labs, Inc. |
| Batch ID: | 09-6416-4429 | | Test Type: | Survival-Rebu | rial | | | Analyst: | Joe Freas | | |
| Start Date: | 21 Sep-21 13:0 |)4 | Protocol: | EPA/600/R-94 | /025 (1994) | | | Diluent: | Laboratory Sea | water | |
| Ending Date: | 01 Oct-21 13:0 | 4 | Species: | Eohaustorius e | estuarius | | | Brine: | Not Applicable | | |
| Test Length: | 10d 0h | | Taxon: | Malacostraca | | | | Source: | Northwestern A | Aquatic Scie | enc Age: |
| Sample ID: | 01-7535-3971 | | Code: | WGR0921.06 | 1e | | | Project: | 021.APC.01 | | |
| Sample Date: | 09 Sep-21 11:3 | 0 | Material: | Sediment | | | | Source: | Bioassay Repo | ort | |
| Receipt Date: | 13 Sep-21 16:0 | 00 | CAS (PC): | | | | | Station: | SED-007 | | |
| Sample Age: | 12d 2h | | Client: | WGR Southwe | est Inc. | | | | | | |
| Dissolved Ox | ygen-mg/L | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count |
| 0 | N | 2 | 10.05 | 9,415 | 10,69 | 10 | 10.1 | 0.035 | 36 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.1 | 8.829 | 11.37 | 10 | 10.2 | 0.070 | 71 0,1414 | 1.40% | 0 |
| Overall | | 4 | 10.08 | 9.923 | 10.23 | 10 | 10.2 | 0.047 | 87 0.09574 | 0.95% | 0 (0%) |
| pH-Units | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.65 | 7.015 | 8.285 | 7.6 | 7.7 | 0.035 | 35 0.07071 | 0.92% | 0 |
| Overall | | 4 | 7.775 | 7.536 | 8.014 | 7,6 | 7.9 | 0.075 | 0,15 | 1.93% | 0 (0%) |
| Salinity-ppt | | | | | | | | | | | |
| Сопс-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count |
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |
| Temperature- | °C | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Mìn | Max | Std E | rr Std Dev | CV% | QA Count |
| _ | | | | | | 4.4 | | | | - Aug. (100 mg/s) | |

0

100

Overall

N

2

2

14.85

14.85

14.85

14.21

14.21

14.76

15.49

15.49

14.94

14.8

14.8

14.8

14.9

14.9

14.9

0.03539

0.03539

0.02887

0.07077

0.07077

0.05773

0.48%

0.48%

0.39%

0

0

0 (0%)

| Tesoro Los Angeles Refinery - Carson C | perations | | | | | | | | | | | | | | | | | | | | | | | | | Page 1 of 1 |
|--|----------------|-------------------|--------|----------------|------|-------|-------|-------|---------------|---------------|--|---|-------|--------|-------|-------|------|----|---------|------------------|----------|---|-----|---|--------|--|
| Facility Name LA Refinery - Carson Operations | | 180 | | Sep | ulve | da E | Blvd. | , Ca | rson CA 9 | 90749 | CI | t Manag nelsea [| reye | | | | | | 021. | (Consu | .01 | | | | | Laboratory Name Aquatic Bioassay |
| Facility Contact Nate Busch | | Faci | lity T | eleph 0) 84 | | | | | | | | one No. 32) 799-8 | | | | | F | | | sultan) 799- | | | | | | 29 N Olive Street Ventura 93001 |
| Consultant Company | | | 10.1 | ., | | | Con | sulta | nt Address | | 1 (0. | -, | 2,00 | | | _ | | | 1002 | ,,,,, | | | | | 1 | (805) 643-5621 |
| WGR Southwest, Inc. | | | _ | - 8.0 | -4-1 | | | _ | inners Circ | le #101 Lo | s Alamit | os, Cali | fomia | 9072 | 20 | | _ | | _ | _ | | | | _ | 4 | |
| | | | | M | atri | Ì | Pr | sv. | | | | | | | | × | | T | 1 | | | | | | | Special Detection Limit/Reporting |
| | | | | | | | | | | | tuarius 25) | vincialis 36) | | | | | | | | | | | | | N | Please report MDL and RL for all analytes |
| Sample I.D. | Lab Sample No. | No. of Containers | Soil | Water | Air | Other | Yes | No | Sampling Date | Sampling Time | Eohaustorius estuarius (EPA 600/R-94/025) | Mytilus galloprovincialis (EPA 600/R-95/136) | | | | | | | | | | | | | | Duplicate amples must be analyzed at a requency of 5% |
| | | | | | | | | | | | 12.07 | | | | | | | 1 | | | | | | _ | Spe | cial QA/QC |
| 920·002 | | 10 | | 1 | | | -1 | | | | | | | | | | - | 17 | | -1 | | | = 1 | | | |
| SED-003 | | 1 | х | | | | х | | 9/9/21 | 17:55 | х | х | 1 | | F | 5 | | | | | | | | | Sub | 'd COC Attch'd: |
| SED-004 | | 1 | X | | | | X | | 9/9/21 | 13:30 | X | х | 10 | 7 | 1 | | | 1 | | | | | | | | |
| SED-005 | | 1 | x | | Ta | | x | Ü | 9/9/21 | 15:45 | X | X | 6 | E | 9 | | | | | | | | | | | |
| SED-006 | | 1 | x | | | | x | | 9/9/21 | 10:25 | х | х | | 16 | 0 | | | | | | | | | | 1 | |
| SED-007 | | 1 | X | | | 4 | X | | 9/9/21 | 11:30 | X | Х | (5) | 6 | T | | 1 | | | | | | | | 1 | E O |
| | | | | | | | | | | | | | T | | | | | 1 | | | | | | | 1 | E.O. |
| Sample bottles required for (2) x 1-gallon plastic bag | each sample po | oint: | 1 | | | | | | | | | F 19 | | - | | | | | | 1 | | | | 1 | R X | Email Results to: nbusch@marathonpetroleum.com cdreyer@wgr-sw.com aballrot@wgr-sw.com |
| (2) X 1 gallott plastic bag | | _ | | | | | | | | | | | | + | | | | | \perp | 1 | \vdash | | 1 | | M | g 50 50 |
| | | | | | | - | | - | | | - | Н | H | + | ⊢ | Н | | + | Н | + | H | + | + | | - w | athe. |
| | | | | - | | - | | - | | - | H | \vdash | H | + | + | Н | + | + | + | + | H | + | + | - | ~ | ults nar ngr |
| | | | | | | - | | | | | ++ | + | + | + | | Н | | + | 1 | + | Н | + | | + | 1 | \$ @@@ |
| Sample Received Intact: Yes No | | | _ | | _ | _ | | | Temperatu | re receive | d: | Ice | | _ | No | ice | | | | | | | | _ | 1 | Email Results to: nbusch@marathc cdreyer@wgr-sw aballrot@wgr-sw. |
| Relinquished by SAMPLER (Print & Sign Name |)/ | | - | Date | e | - | Tim | e | | Received | by (Pri | nt & Siar | Nam | e) | - | | _ | _ | _ | | _ | | - | _ | - | 판도요용 |
| David Monklongo D | 5 | - | | | 13 | 12 | | | 600 | 1 | 01 | 1 | v | | | | | | | | | | | | 1 | |
| Relinquished by (Print & Sign Name) | | | | Date | е | | Tim | | | Received | by LAE | BORATO | RY (F | rint 8 | & Siç | gn Na | ame) | | | | | | | | Lab | Work No. |



96 Hour Eohaustorius estuarius Survival Bioassay - Standard Toxicant

DATE: 9/21/2021

STANDARD TOXICANT: Ammonium Chloride

ENDPOINT: SURVIVAL

UNIONIZED AMMONIA

NOEC = 0.4520 mg/L

EC25 = 0.8060 mg/LEC50 = 1.4720 mg/L

Yours very truly,

Scott Johnson
Laboratory Director

Report Date: Test Code/ID: 01 Dec-21 14:44 (p 1 of 1) EOH092121 / 00-8890-2246

| Reference To | xicant 96-h Acute | Survival Tes | t | | | | | | Aqu | atic | Bioassay & | Consulting | Labs, Inc. |
|--|---|---|--------------|---|----------|--------|---|--------|---|------|--|------------|------------|
| Batch ID: Start Date: Ending Date: Test Length: | 10-6174-3219 21 Sep-21 15:50 25 Sep-21 16:00 4d 0h | Test Ty Protoco Species Taxon: | ol: s: | Survival EPA/600/R-94/ Eohaustorius e Malacostraca | | | | E | Analyst: Diluent: Brine: Gource: | Lab | Freas poratory Seaw Applicable thwestern Aq | | : Age: |
| Sample ID: Sample Date: | 03-7921-4314 21 Sep-21 | Code: Materia | | EOH092121 Ammonia (Unio | nized) | | | | Project: Source: | | F TOX ference Toxica | ant | |
| Receipt Date: Sample Age: | 16h | CAS (P Client: | C): | Internal Lab | | | | S | station: | RE | FTOX | | |
| | parison Summar | 2.000 | - | Injuria Luc | | | | | | | | - | _ |
| Analysis ID | Endpoint | 7° | omp | arison Method | | | 1 | NOEL | LOE | | TOEL | PMSD | s |
| 09-8125-8804 | | S | teel N | Many-One Rank | Sum Test | | | 0.452 | 0.806 | | 0.6036 | 9.58% | 1 |
| Point Estimate | Summary | | | | | | | | | | | | |
| Analysis ID | Endpoint | P | oint l | Estimate Metho | od | | 1 | Level | mg/L | | 95% LCL | 95% UCL | s |
| 17-7232-1622 | Survival Rate | Li | inear | Interpolation (IC | PIN) | | | EC10 | 0.57 | | 0.4621 | 0.6644 | 1 |
| | | | | | | | | EC15 | 0.648 | 37 | 0.5767 | 0.7588 | |
| | | | | | | | | EC20 | 0,727 | 73 | 0.6472 | 0.8532 | |
| | | | | | | | | EC25 | 0.806 | 3 | 0.703 | 0.9907 | |
| | | | | | | | | EC40 | 1.206 | | 0.9511 | 1.574 | |
| | | | | | | | | EC50 | 1.472 | 2 | 1.099 | 2.061 | |
| Survival Rate | Summary | | | | | | | | | | | | |
| Conc-mg/L | Code | 2-2-14 | ean | 95% LCL | 95% UCL | Min | | Max | Std E | _ | Std Dev | CV% | %Effect |
| 0 | N | | 0000 | | 1.0000 | 1.0000 | | 1.0000 | | | 0.0000 | *** | 0.00% |
| 0.227 | | | 0000 | | 1.0000 | 1.0000 | | 1.0000 | | | 0.0000 | | 0.00% |
| 0.452 | | | 9750 | | 1.0550 | 0.9000 | | 1.0000 | | | 0.0500 | 5.13% | 2,50% |
| 0.806 | | | 7500 | | 0.8419 | 0.7000 | | 0.8000 | | | 0.0577 | 7.70% | 25.00% |
| 1.672 3.524 | | | 4250 0000 | 10 MO 10 M | 0.6968 | 0.2000 | | 0.6000 | | | 0.1708 | 40.18% | 57.50% |
| 271 Y 2 | 27570 | 4 0. | 0000 | 0.0000 | 0.0000 | 0,0000 | _ | 0.0000 | | | 0.0000 | 271222 | 100.00% |
| Survival Rate | | 40.00 | | | 0.70 | | | 1 | MD5: 6D7 | 7440 | 2167F10E79 | 961AD38410 | CCD9839 |
| Conc-mg/L | Code | | ep 2 | Rep 3 | Rep 4 | | | | | | | | |
| 0 | N. | | 0000 | | 1.0000 | | | | | | | | |
| 0.227 | | | 0000 | | 1.0000 | | | | | | | | |
| 0.452 | | | 9000 | | 1.0000 | | | | | | | | |
| 0.806 | | | 8000 | | 0.7000 | | | | | | | | |
| 1.672 | | | 5000 | | 0.4000 | | | | | | | | |
| 3.524 | | 0.0000 0. | 0000 | 0.0000 | 0.0000 | | | | | | | | |
| Survival Rate | Binomials | | | | | | | | | | | | |
| Conc-mg/L | Code | | ep 2 | Rep 3 | Rep 4 | | | | | | | | |
| 0 | N | | 0/10 | 10/10 | 10/10 | | | | | | | | |
| 0.227 | | | 0/10 | 10/10 | 10/10 | | | | | | | | |
| 0.452 | | | 10 | 10/10 | 10/10 | | | | | | | | |
| 0.806 | | | 10 | 7/10 | 7/10 | | | | | | | | |
| 1.672 | | 6/10 5/ | 10 | 2/10 | 4/10 | | | | | | | | |

Analyst: QA: L

3.524

0/10

0/10

0/10

0/10

Report Date: Test Code/ID:

Source:

01 Dec-21 14:44 (p 1 of 2) EOH092121 / 00-8890-2246

Northwestern Aquatic Scienc Age:

Reference Toxicant 96-h Acute Survival Test Aquatic Bioassay & Consulting Labs, Inc.

| Analysis ID: | 09-8125-8804 | Endpoint: | Survival Rate | CETIS Version: | CETISv1.9.7 |
|--------------|-----------------|-----------|-----------------------------------|----------------|-------------|
| Analyzodi | 01 Dog 31 14:43 | Analysis | Noncematria Control va Trantmonto | Ctatue I avale | 4 |

MD5 Hash: 6D7744C2167F10E7961AD3841CCD9839 **Edit Date:** 01 Dec-21 14:40 Editor ID: 007-979-628-1

Batch ID: 10-6174-3219 Test Type: Survival Analyst: Joe Freas

Start Date: 21 Sep-21 15:50 Protocol: EPA/600/R-94/025 (1994) Diluent: Laboratory Seawater Ending Date: 25 Sep-21 16:00 Brine: Species: Eohaustorius estuarius Not Applicable

Malacostraca Code: Sample ID: 03-7921-4314 EOH092121 REF TOX Project:

Sample Date: 21 Sep-21 Material: Ammonia (Unionized) Source: Reference Toxicant

Receipt Date: CAS (PC): Station: REF TOX

Sample Age: 16h Client: Internal Lab

Taxon:

| Data Transform | Alt Hyp | NOEL | LOEL | TOEL | TU | MSDu | PMSD | |
|---------------------|---------|-------|-------|--------|-----|---------|-------|--|
| Angular (Corrected) | C > T | 0.452 | 0.806 | 0.6036 | *** | 0.09578 | 9.58% | |

Steel Many-One Rank Sum Test

Test Length: 4d 0h

| Control | VS | Conc-mg/L | Test Stat | Critical | Ties | DF | P-Type | P-Value | Decision(a:5%) |
|-----------------|----|-----------|-----------|----------|------|----|--------|---------|------------------------|
| Negative Contro | ol | 0.227 | 18 | 10 | 1 | 6 | CDF | 0.8000 | Non-Significant Effect |
| | | 0.452 | 16 | 10 | 1 | 6 | CDF | 0.5661 | Non-Significant Effect |
| | | 0.806* | 10 | 10 | 0 | 6 | CDF | 0.0350 | Significant Effect |
| | | 1.672* | 10 | 10 | 0 | 6 | CDF | 0.0350 | Significant Effect |

ANOVA Table

| Source | Sum Squares | Mean Square | DF | F Stat | P-Value | Decision(a:5%) |
|---------|-------------|-------------|----|--------|----------|--------------------|
| Between | 1.54617 | 0.386544 | 4 | 44.16 | <1.0E-05 | Significant Effect |
| Error | 0.131289 | 0.0087526 | 15 | | | |
| Total | 1.67746 | | 19 | | | |

ANOVA Assumptions Tests

| Attribute | Test | Test Stat | Critical | P-Value | Decision(a:1%) |
|--------------|--------------------------------------|-----------|----------|---------|-------------------------|
| Variance | Bartlett Equality of Variance Test | | | | Indeterminate |
| | Levene Equality of Variance Test | 5.095 | 4.893 | 0.0085 | Unequal Variances |
| | Mod Levene Equality of Variance Test | 3.277 | 4.893 | 0.0405 | Equal Variances |
| Distribution | Anderson-Darling A2 Test | 1.291 | 3.878 | 0.0020 | Non-Normal Distribution |
| | D'Agostino Kurtosis Test | 2.439 | 2.576 | 0.0147 | Normal Distribution |
| | D'Agostino Skewness Test | 1.825 | 2.576 | 0.0680 | Normal Distribution |
| | D'Agostino-Pearson K2 Omnibus Test | 9.278 | 9.21 | 0.0097 | Non-Normal Distribution |
| | Kolmogorov-Smirnov D Test | 0.25 | 0.2235 | 0.0020 | Non-Normal Distribution |
| | Shapiro-Wilk W Normality Test | 0.8745 | 0,866 | 0.0141 | Normal Distribution |
| | | | | | |

Survival Rate Summary

| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
|-----------|------|-------|--------|---------|---------|--------|--------|--------|---------|--------|---------|
| 0 | N | 4 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0,0000 | 0.00% | 0.00% |
| 0.227 | | 4 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.00% | 0.00% |
| 0.452 | | 4 | 0.9750 | 0.8954 | 1.0000 | 1.0000 | 0.9000 | 1.0000 | 0.0250 | 5.13% | 2.50% |
| 0.806 | | 4 | 0.7500 | 0.6581 | 0.8419 | 0.7500 | 0.7000 | 0.8000 | 0.0289 | 7.70% | 25.00% |
| 1.672 | | 4 | 0.4250 | 0.1532 | 0.6968 | 0.4500 | 0.2000 | 0.6000 | 0.0854 | 40.18% | 57.50% |
| 3,524 | | 4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | - | 100.00% |

Angular (Corrected) Transformed Summary

| Code | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
|------|-------|---------------|--|---|--|---|--|--|---|--|
| N | 4 | 1.4120 | 1.4120 | 1.4120 | 1.4120 | 1.4120 | 1.4120 | 0.0000 | 0.00% | 0.00% |
| | 4 | 1.4120 | 1.4120 | 1.4120 | 1.4120 | 1.4120 | 1.4120 | 0.0000 | 0.00% | 0.00% |
| | 4 | 1.3710 | 1.2420 | 1.5010 | 1.4120 | 1.2490 | 1,4120 | 0.0407 | 5.94% | 2.89% |
| | 4 | 1.0490 | 0.9426 | 1.1560 | 1.0490 | 0.9912 | 1.1070 | 0.0335 | 6.38% | 25.70% |
| | 4 | 0,7050 | 0.4175 | 0.9924 | 0.7351 | 0.4636 | 0.8861 | 0.0903 | 25.63% | 50.07% |
| | 4 | 0.1588 | 0.1588 | 0.1588 | 0.1588 | 0.1588 | 0.1588 | 0.0000 | 0.00% | 88.76% |
| | N N | N 4 4 4 4 4 4 | N 4 1.4120 4 1.4120 4 1.3710 4 1.0490 4 0.7050 | N 4 1.4120 1.4120 4 1.4120 1.4120 4 1.3710 1.2420 4 1.0490 0.9426 4 0.7050 0.4175 | N 4 1.4120 1.4120 1.4120 4 1.4120 1.4120 1.4120 4 1.3710 1.2420 1.5010 4 1.0490 0.9426 1.1560 4 0.7050 0.4175 0.9924 | N 4 1.4120 1.4120 1.4120 1.4120 4 1.4120 1.4120 1.4120 1.4120 4 1.3710 1.2420 1.5010 1.4120 4 1.0490 0.9426 1.1560 1.0490 4 0.7050 0.4175 0.9924 0.7351 | N 4 1.4120 1.4120 1.4120 1.4120 1.4120 4 1.4120 1.4120 1.4120 1.4120 1.4120 4 1.3710 1.2420 1.5010 1.4120 1.2490 4 1.0490 0.9426 1.1560 1.0490 0.9912 4 0.7050 0.4175 0.9924 0.7351 0.4636 | N 4 1.4120 1.4120 1.4120 1.4120 1.4120 1.4120 4 1.4120 1.4120 1.4120 1.4120 1.4120 4 1.3710 1.2420 1.5010 1.4120 1.2490 1.4120 4 1.0490 0.9426 1.1560 1.0490 0.9912 1.1070 4 0.7050 0.4175 0.9924 0.7351 0.4636 0.8861 | N 4 1.4120 1.4120 1.4120 1.4120 1.4120 1.4120 0.0000 4 1.4120 1.4120 1.4120 1.4120 1.4120 0.0000 4 1.3710 1.2420 1.5010 1.4120 1.2490 1.4120 0.0407 4 1.0490 0.9426 1.1560 1.0490 0.9912 1.1070 0.0335 4 0.7050 0.4175 0.9924 0.7351 0.4636 0.8861 0.0903 | N 4 1.4120 1.4120 1.4120 1.4120 1.4120 1.4120 0.0000 0.00% 4 1.4120 1.4120 1.4120 1.4120 1.4120 0.0000 0.00% 4 1.3710 1.2420 1.5010 1.4120 1.2490 1.4120 0.0407 5.94% 4 1.0490 0.9426 1.1560 1.0490 0.9912 1.1070 0.0335 6.38% 4 0.7050 0.4175 0.9924 0.7351 0.4636 0.8861 0.0903 25.63% |

Report Date: Test Code/ID:

01 Dec-21 14:44 (p 2 of 2) EOH092121 / 00-8890-2246

Aquatic Bioassay & Consulting Labs, Inc.

09-8125-8804 Analysis ID: Analyzed:

01 Dec-21 14:43 01 Dec-21 14:40

Reference Toxicant 96-h Acute Survival Test

Endpoint: Survival Rate Analysis:

Nonparametric-Control vs Treatments MD5 Hash: 6D7744C2167F10E7961AD3841CCD9839

CETIS Version: Status Level:

Editor ID:

CETISV1,9.7 007-979-628-1

Survival Rate Detail

Edit Date:

| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | |
|-----------|------|--------|--------|--------|--------|--|
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| 0.227 | | 1.0000 | 1,0000 | 1.0000 | 1.0000 | |
| 0.452 | | 1.0000 | 0.9000 | 1.0000 | 1.0000 | |
| 0.806 | | 0.8000 | 0.8000 | 0.7000 | 0.7000 | |
| 1.672 | | 0.6000 | 0.5000 | 0.2000 | 0.4000 | |
| 3.524 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | |

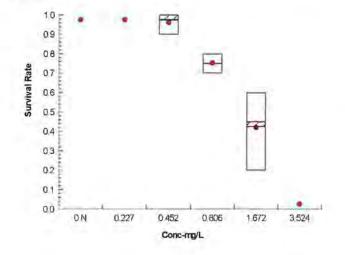
Angular (Corrected) Transformed Detail

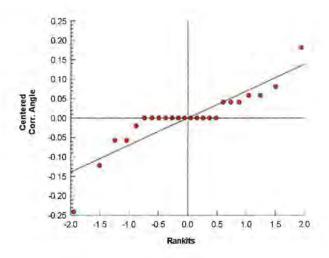
| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|-----------|------|--------|--------|--------|--------|
| 0 | N | 1.4120 | 1.4120 | 1.4120 | 1.4120 |
| 0.227 | | 1.4120 | 1.4120 | 1.4120 | 1.4120 |
| 0.452 | | 1.4120 | 1.2490 | 1 4120 | 1.4120 |
| 0.806 | | 1.1070 | 1.1070 | 0.9912 | 0.9912 |
| 1,672 | | 0.8861 | 0.7854 | 0.4636 | 0.6847 |
| 3,524 | | 0.1588 | 0.1588 | 0.1588 | 0.1588 |

Survival Rate Binomials

| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | |
|-----------|------|-------|-------|-------|-------|--|
| 0 | N | 10/10 | 10/10 | 10/10 | 10/10 | |
| 0,227 | | 10/10 | 10/10 | 10/10 | 10/10 | |
| 0.452 | | 10/10 | 9/10 | 10/10 | 10/10 | |
| 0.806 | | 8/10 | 8/10 | 7/10 | 7/10 | |
| 1.672 | | 6/10 | 5/10 | 2/10 | 4/10 | |
| 3.524 | | 0/10 | 0/10 | 0/10 | 0/10 | |

Graphics





007-979-628-1 CETIS™ v1.9.7.7

Reference Toxicant 96-h Acute Survival Test

Report Date:

01 Dec-21 14:44 (p 1 of 2)

Test Code/ID: EOH092121 / 00-8890-2246 Aquatic Bioassay & Consulting Labs, Inc.

| Analysis ID: | 17-7232-1622 | Endpoint: | Survival Rate | CETIS Version: | CETISv1.9.7 |
|--------------|---------------------|-----------|---------------|--|-------------|
| -2-14-13 | ALC ACCOUNT TO LESS | | | La contra de la contra del la contra | 3. |

Analyzed: 01 Dec-21 14:43 Analysis: Linear Interpolation (ICPIN) Status Level: 1

Edit Date: 01 Dec-21 14:40 MD5 Hash: 6D7744C2167F10E7961AD3841CCD9839 Editor ID: 007-979-628-1

Batch ID: 10-6174-3219 Test Type: Survival Analyst: Joe Freas

Start Date: 21 Sep-21 15:50 Protocol: EPA/600/R-94/025 (1994) Diluent: Laboratory Seawater
Ending Date: 25 Sep-21 16:00 Species: Eohaustorius estuarius Brine: Not Applicable

Test Length: 4d 0h Taxon: Malacostraca Source: Northwestern Aquatic Scienc Age:

 Sample ID:
 03-7921-4314
 Code:
 EOH092121
 Project:
 REF TOX

Sample Date: 21 Sep-21 Material: Ammonia (Unionized) Source: Reference Toxicant

Receipt Date: CAS (PC): Station: REF TOX
Sample Age: 16h Client: Internal Lab

Linear Interpolation Options

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method | |
|-------------|-------------|------|-----------|------------|-------------------------|--|
| Linear | Linear | 0 | 280 | Yes | Two-Point Interpolation | |

Point Estimates

| Level | mg/L | 95% LCL | 95% UCL | |
|-------|--------|---------|---------|--|
| EC10 | 0.57 | 0.4621 | 0.6644 | |
| EC15 | 0.6487 | 0.5767 | 0.7588 | |
| EC20 | 0.7273 | 0.6472 | 0.8532 | |
| EC25 | 0.806 | 0.703 | 0.9907 | |
| EC40 | 1.206 | 0.9511 | 1.574 | |
| EC50 | 1.472 | 1.099 | 2.061 | |

| Survival Rate Summary | | Calculated Variate(A/B) | | | | | | | | Isotonic Variate | |
|-----------------------|------|-------------------------|--------|--------|--------|--------|--------|---------|-------|------------------|---------|
| Conc-mg/L | Code | Count | Mean | Median | Min | Max | CV% | %Effect | A/B | Mean | %Effect |
| 0 | N | 4 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.00% | 0.00% | 40/40 | 1.0000 | 0.00% |
| 0.227 | | 4 | 1,0000 | 1.0000 | 1.0000 | 1.0000 | 0.00% | 0.00% | 40/40 | 1.0000 | 0.00% |
| 0.452 | | 4 | 0,9750 | 1.0000 | 0.9000 | 1.0000 | 5.13% | 2,50% | 39/40 | 0.9750 | 2.50% |
| 0.806 | | 4 | 0.7500 | 0,7500 | 0.7000 | 0 8000 | 7.70% | 25.00% | 30/40 | 0.7500 | 25.00% |
| 1,672 | | 4 | 0.4250 | 0.4500 | 0.2000 | 0.6000 | 40.18% | 57.50% | 17/40 | 0.4250 | 57.50% |
| 3.524 | | 4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 100.00% | 0/40 | 0.0000 | 100.00% |

Survival Rate Detail

| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | |
|-----------|------|--------|--------|--------|--------|--|
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| 0.227 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | |
| 0.452 | | 1,0000 | 0.9000 | 1.0000 | 1.0000 | |
| 0.806 | | 0.8000 | 0.8000 | 0.7000 | 0.7000 | |
| 1,672 | | 0.6000 | 0,5000 | 0.2000 | 0.4000 | |
| 3,524 | | 0,0000 | 0.0000 | 0.0000 | 0.0000 | |

Survival Rate Binomials

| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | |
|-----------|------|-------|-------|-------|-------|--|
| 0 | N | 10/10 | 10/10 | 10/10 | 10/10 | |
| 0.227 | | 10/10 | 10/10 | 10/10 | 10/10 | |
| 0.452 | | 10/10 | 9/10 | 10/10 | 10/10 | |
| 0.806 | | 8/10 | 8/10 | 7/10 | 7/10 | |
| 1.672 | | 6/10 | 5/10 | 2/10 | 4/10 | |
| 3.524 | | 0/10 | 0/10 | 0/10 | 0/10 | |
| | | | | | | |

01 Dec-21 14:40

Report Date: Test Code/ID: 01 Dec-21 14:44 (p 2 of 2) EOH092121 / 00-8890-2246

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 17-7232-1622 Analyzed: 01 Dec-21 14:43 Endpoint: Survival Rate Analysis: Linear Interpo

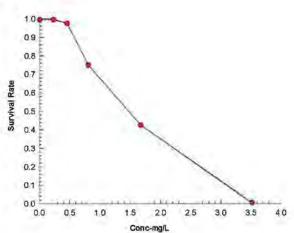
Analysis: Linear Interpolation (ICPIN)
MD5 Hash: 6D7744C2167F10E7961AD3841CCD9839

CETIS Version: Status Level:

Editor ID:

CETISv1.9.7 1 007-979-628-1

Edit Date: Graphics



CETIS Measurement Report

Reference Toxicant 96-h Acute Survival Test

Report Date: Test Code/ID:

01 Dec-21 14:44 (p 1 of 1) EOH092121 / 00-8890-2246

Aquatic Bioassay & Consulting Labs, Inc.

| _ | | | | | |
|---|--------------|------------|----------|----------|-----------|
| | 10-6174-3219 | Test Type: | Survival | Analyst. | Ine Frees |

Batch ID: Start Date: EPA/600/R-94/025 (1994) 21 Sep-21 15:50 Diluent: Laboratory Seawater Protocol: Ending Date: 25 Sep-21 16:00 Species: Echaustorius estuarius Brine: Not Applicable

Test Length: 4d 0h Taxon: Malacostraca Source: Northwestern Aquatic Scienc Age:

Sample ID: 03-7921-4314 Code: EOH092121 Project: REF TOX

Sample Date: 21 Sep-21 Material: Ammonia (Unionized) Source: Reference Toxicant

Receipt Date: CAS (PC): Station: REF TOX Client: Sample Age: 16h Internal Lab

Dissolved Oxygen-mg/L

| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|-----------|------|-------|-------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 6.55 | 5.915 | 7.185 | 6.5 | 6.6 | 0.03535 | 0.0707 | 1.08% | 0 |
| 0.227 | | 2 | 6.7 | 5.429 | 7.971 | 6.6 | 6.8 | 0.07071 | 0.1414 | 2.11% | 0 |
| 0.452 | | 2 | 6.7 | 4.159 | 9.241 | 6.5 | 6.9 | 0.1414 | 0.2828 | 4.22% | 0 |
| 0.806 | | 2 | 6.5 | 5.229 | 7.771 | 6.4 | 6.6 | 0.07071 | 0.1414 | 2,18% | 0 |
| 1.672 | | 2 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 0 | 0 | 0.00% | 0 |
| 3,524 | | 2 | 6.55 | 5.915 | 7.185 | 6.5 | 6.6 | 0.03535 | 0.0707 | 1.08% | 0 |
| Overall | | 12 | 6.583 | 6.494 | 6.673 | 6.4 | 6.9 | 0.04051 | 0.1403 | 2.13% | 0 (0%) |

pH-Units

| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|-----------|------|-------|-------|---------|---------|-----|-----|---------|---------|-------|-----------------|
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 0.227 | | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 0.452 | | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 0.806 | | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 1.672 | | 2 | 7.8 | 7,787 | 7.813 | 7.8 | 7.8 | 0 | 0 | 0.00% | 0 |
| 3.524 | | 2 | 7.8 | 7.787 | 7.813 | 7.8 | 7.8 | 0 | 0 | 0.00% | 0 |
| Overall | | 12 | 7.867 | 7.835 | 7.898 | 7.8 | 7.9 | 0.01421 | 0.04924 | 0.63% | 0 (0%) |

Salinity-ppt

| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|-----------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 0.227 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 0.452 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 0.806 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 1.672 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 3.524 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 12 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |

Temperature-°C

| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|-----------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|
| 0 | N | 2 | 14.95 | 14.31 | 15.59 | 14.9 | 15 | 0.03538 | 0.07075 | 0.47% | 0 |
| 0.227 | | 2 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 0.00% | 0 |
| 0.452 | | 2 | 14.85 | 14.21 | 15.49 | 14.8 | 14.9 | 0.03539 | 0.07077 | 0.48% | 0 |
| 0.806 | | 2 | 14.9 | 14.87 | 14.93 | 14.9 | 149 | 0 | 0 | 0.00% | 0 |
| 1.672 | | 2 | 14.9 | 14.87 | 14.93 | 14.9 | 14.9 | 0 | 0 | 0.00% | 0 |
| 3.524 | | 2 | 14.9 | 14.87 | 14.93 | 14.9 | 14.9 | 0 | 0 | 0.00% | 0 |
| Overall | | 12 | 14.92 | 14.88 | 14.95 | 14.8 | 15 | 0.01667 | 0.05774 | 0.39% | 0 (0%) |

007-979-628-1 CETIS™ v1.9.7.7

ATTACHMENT 5

ORGANIC/INORGANIC ANALYTICAL VALIDATION REPORT

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Organic/Inorganic Analytical Validation Report

Table of Contents

| 1.0 | Overview | 1 |
|-----|-------------------------------|---|
| | | |
| 1.1 | Data Assessment | 2 |
| | Overall Data Review Narrative | |
| | | |

Attachments:

Attachment I - Dominguez Channel Estuary Sediment Monitoring Inorganic/Organic Analytical Validation Form

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations September 2021 Organic/Inorganic Analytical Validation Report Page 1 of 3

1.0 Overview

On behalf of Tesoro Refining & Marketing Company LLC, Los Angeles Refinery – Carson Operations (herein facility), WGR Southwest, Inc. (WGR) collected sediment samples at monitoring locations SED-003, SED-004, SED-005, SED-006, and SED-007 on September 9, 2021. Collected samples were submitted to the laboratory on September 13, 2021 for analysis as required in NPDES Permit No. CA0000680 Attachment E, Table E-7.

Sediment monitoring analysis was performed by laboratories certified under the Environmental Laboratory Accreditation Program (ELAP). Sediment chemistry samples were analyzed by Eurofins Calscience, Inc. in Garden Grove California with ELAP accreditation number 2944 and chronic toxicity samples were submitted to Aquatic Bioassay and Consulting Laboratories, Inc. in Ventura, California with ELAP accreditation number 1907. This document presents the analytical validation criteria used to determine the usability of data gathered as result of the sediment monitoring conducted. Analytical data was evaluated based on the validation criteria set forth in the *National Functional Guidelines for Organic Superfund Methods Data Review*, document number USEPA-540-R-2017-002, January 2017, and the *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, document number USEPA 540-R-2017-001, January 2017, as applied to the reported methodology. Sediment monitoring parameters, including the sample type and corresponding analytical method, are listed in Table 1.0 below.

| Table 1.0 - Sediment Monitoring Parameters | | | | | | | |
|--|--------------|--------------------------|--|--|--|--|--|
| Parameters | Sample Type | Analytical Method | | | | | |
| Cadmium, Total Recoverable | Surface Grab | EPA 6020B | | | | | |
| Chlordane | Surface Grab | EPA 8081A | | | | | |
| Chromium, Total | Surface Grab | EPA 6020B | | | | | |
| Copper, Total Recoverable | Surface Grab | EPA 6020B | | | | | |
| Lead, Total Recoverable | Surface Grab | EPA 6020B | | | | | |
| Mercury, Total Recoverable | Surface Grab | EPA 7471A | | | | | |
| Nickel, Total Recoverable | Surface Grab | EPA 6020B | | | | | |
| Zinc, Total Recoverable | Surface Grab | EPA 6020B | | | | | |
| PCBs ¹ | Surface Grab | EPA 8082A | | | | | |
| Sediment Grain Size | Surface Grab | ASTM D4464 | | | | | |
| Chronic Toxicity | Surface Grab | - | | | | | |
| Pesticides | Surface Grab | EPA 8081A | | | | | |
| Total Organic Carbon | Surface Grab | EPA 9060A | | | | | |

| Table 1.0 - Sediment Monitoring Parameters | | | | | | | |
|---|--------------|---------------|--|--|--|--|--|
| Total Petroleum Hydrocarbons ² | EPA 8015B | | | | | | |
| Tributyltin | Surface Grab | Krone et. Al. | | | | | |
| Polynuclear Aromatic Hydrocarbons ³ | Surface Grab | EPA 8270C | | | | | |

Footnotes:

Analytical laboratory reports are included in Attachment 3 and Attachment 4 of the Dominguez Channel Estuary September 2021 Sediment Monitoring Report. All of the sediment monitoring parameters listed in Table 1.0 were analytically validated except for Sediment Grain Size and Chronic Toxicity. Data from these analyses do not qualify for environmental data validation guidance procedures. As a result, sediment grain size and chronic toxicity data was assessed for completion using Chain of Custody records and field sample preservation guidelines. Detailed analytical validation for chronic toxicity is provided in the Sediment Bioassay Data Validation Report in Attachment 6 of the Dominguez Channel Estuary September 2021 Sediment Monitoring Report.

Analytical data validation for organic/inorganic parameters determinations are included in the *Dominguez Channel Estuary Sediment Monitoring Organic/Inorganic Analytical Data Validation Form* in Attachment I included in this report.

1.1 Data Assessment

Analytical data validation consisted of evaluating laboratory precision, laboratory accuracy, method compliance, and overall completeness of laboratory data provided. Based on this assessment, it was determined that data obtained for the September 9, 2021 sediment samples at SED-003, SED-004, SED-005, SED-006, and SED-007 is acceptable. Data components reviewed during the data review process included:

- Chain of Custody records and holding times
- Sample integrity/case narratives
- Sample results, reporting limits, dilution factors
- Laboratory QA/QC data

A summary of the sediment samples collected are provided in Table 2.0 below:

^{1 –} PCBs is the sum of Arochlor-1016, Arochlor-1221, Arochlor-1232, Arochlor-1242, Arochlor-1248, Arochlor-1254, and Arochlor-1260.

^{2 –} DDT is the sum of 4,4' DDT, 2,4' DDT, 4,4'DDE, 2,4' DDE, 4,4' DDD, and 2,4' DDD

^{3 –} PAHs is the sum of acenaphthene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, and pyrene.

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations September 2021 Organic/Inorganic Analytical Validation Report Page 3 of 3

| Table 2.0 – Dominguez Channel Sediment Samples | | | | | | | |
|--|-------------------|-------------------------|-------------|--|--|--|--|
| Sample ID | Sample Date | Sample Date Sample Time | | | | | |
| SED-003 | September 9, 2021 | 17:55 | 570-69878-1 | | | | |
| SED-004 | September 9, 2021 | 13:30 | 570-69878-2 | | | | |
| SED-005 | September 9, 2021 | 15:45 | 570-69878-3 | | | | |
| SED-006 | September 9, 2021 | 10:25 | 570-69878-4 | | | | |
| SED-007 | September 9, 2021 | 11:30 | 570-69878-5 | | | | |

1.2 Overall Data Review Narrative

Analytical data was assessed for precision, accuracy, method compliance and overall completeness. Data review determined these components to be acceptable. However, as noted in the attached data validation form, the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) recoveries in QA/QC samples for PAHs, organotins, and metals were outside the control limits. Since associated Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicates (LCSD) recoveries were within acceptance limits, the data was qualified and deemed acceptable.

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Attachment I

Dominguez Channel Estuary Sediment Monitoring Inorganic/Organic Analytical Validation Form

Tesoro Refining & Marketing LLC

Los Angeles Refinery - Carson Operations

Dominguez Channel Estuary Sediment Monitoring Organic/Inorganic Analytical Data Validation Form

PROJECT INFORMATION

Project Name: Dominguez Channel Sediment Sampling

Analytical Laboratories: Eurofins Calscience, Inc.

Aquatic Bioassays & Consulting Laboratories Inc.

Sample Collection Date: September 9, 2021

Sample Collection Locations: SED-003, SED-004, SED-005, SED-006, SED-007

| Signature: | Olmlu | Bellist |
|----------------|-------|---------|
| J.B.: a ta. c. | | |

Data Validator: Amber Ballrot

Validation Date: January 6, 2022

| SEDIMENT MONITORING PARAMETERS | | | | | | | | |
|---|-----------|------------|-----------|--|---|--|--|--|
| Parameters | Sample 1 | уре | Analytica | al Method | Holding Times | Parameter Validation Comments: | | |
| Cadmium, Total Recoverable | Surface (| Grab | EPA (| 5020B | 180 days | | | |
| Chlordane | Surface (| Grab EPA | | 3081A | 14 days | | | |
| Chromium, Total | Surface (| Grab | EPA (| 5020B | 180 days | | | |
| Copper, Total Recoverable | Surface (| Grab | EPA (| 5020B | 180 days | All sediment monitoring parameters were | | |
| Lead, Total Recoverable | Surface (| Grab | EPA (| 5020B | 180 days | analytically validated except for Sediment Grain | | |
| Mercury, Total Recoverable | Surface (| Grab | EPA 7 | 7471A | 180 days | · | | |
| Nickel, Total Recoverable | Surface (| Grab | EPA (| 5020B | 180 days | Size and Chronic Toxicity. Data from these | | |
| Zinc, Total Recoverable | Surface (| Grab | EPA 6 | 5020B | 180 days | analyses do not qualify for environmental data | | |
| PCBs | Surface (| Grab | EPA 8 | 3082A | 14 days | validation guidance procedures. Grain size and | | |
| Sediment Grain Size | Surface (| Grab | ASTM | D4464 | - | chronic toxicity data was assessed for | | |
| Chronic Toxicity | Surface (| rface Grab | | - | - | · | | |
| Pesticides | Surface (| | EPA 8 | 3081A | 14 days | completion based on Chain of Custody records | | |
| Total Organic Carbon | Surface (| Grab EPA | | 9060A | 28 days | and field sample preservation procedures. | | |
| Total Petroleum Hydrocarbons | Surface (| Grab EPA | | 3015B | 14 days | | | |
| Tributyltin | Surface (| Grab | Krone | et. Al. | 14 days | | | |
| Polynuclear Aromatic Hydrocarbons | Surface (| Grab | EPA 8 | 3270C | 14 days | | | |
| | | | VALIDATIC | N CRITERIA | | | | |
| 1. Was the Chain of Custody (COC) form complete for all samples submitted? | | | □ NO□ N/A | complete. The and laborator | e COC includes samp y personnel signatur | (COC) form submitted to the laboratory is le location information, field parameter results, res denoting the date and time the samples were eceived by the laboratory. | | |
| 2. Were ALL of the requested analyses specified in the COC completed by the laboratory? | | | □ NO□ N/A | Comments: Laboratory analysis was performed in accordance with the methods requested in the COC. | | | | |

Tesoro Refining & Marketing LLC Los Angeles Refinery - Carson Operations Dominguez Channel Estuary Sediment Monitoring Organic/Inorganic Analytical Data Validation Form Comments: The samples were received by the laboratory on September 13, 2021. 3. Were samples received in good condition and ∇ YES NO N/A The samples arrived in good condition and were properly preserved. No sample appropriately preserved as required by each analysis? receipt deficiencies were noted in the laboratory report Sample Job Narrative. 4. Were the reported analytical methods in compliance with Comments: All analytical methods were completed as requested in the COC and are ¬ YES □ NO□ N/A the facility's NPDES permit and/or COC requests? in compliance with the facility's NPDES permit. Comments: The method detection limits and reporting limits were reported for each analytical method. Sediment results were primarily reported on a dry weight 5. Were detection limits in accordance with the facility's ☑ YES ☐ NO☐ N/A basis except for DDT analyzed by method 8081A and sediment particle size NPDES permit or analytical method? analyzed by method D4464. DDT and sediment particle size was reported on a wet weight basis. Comments: The Job Narrative included on page 4 of the laboratory report did not 6. Did the laboratory identify any deficiencies/non-YES NO N/A identify any deficiencies/non-conformances related to the analytical results; conformances related to the analytical results? however, qualifiers for quality control samples are included. Comments: Sample holding times were met for all analytical methods. The ☑ YES ☐ NO☐ N/A analytical methods and the corresponding holding time is provided in the Sediment 7. Were sample holding times met? Monitoring Parameter Table above.

Tesoro Refining & Marketing LLC Los Angeles Refinery - Carson Operations Dominguez Channel Estuary Sediment Monitoring Organic/Inorganic Analytical Data Validation Form Comments: Analytical results are reported in the correct concentration units required for sediment sample matrices. Results are reported in varying units as follows: dry weight results reported in mg/kg include PAHs analyzed by method EPA 8270C, TPH analyzed by method 8015B, total metals analyzed by method 6020, 8. Were correct concentration units reported? ✓YES ☐ NO☐ N/A mercury analyzed by method 7471A and total organic carbon analyzed by method 9060A. Results reported in dry weight as ug/kg included PCBs analyzed by method 8082 and organotins. Results reported in wet weight as ug/kg included DDT analyzed by 8081A. This unit trend is consistent at all four sampling stations. Comments: Reporting requirements for flagged data were met. Qualifiers included: J - result is less than RL but greater than or equal to MDL and the result is approximate value p - The %RPD between the primary and confirmation column/detector is >40%. The 🗇 YES 🗀 NO 🗆 N/A 9. Were the reporting requirements for flagged data met? lower value was reported F1 - MS and/or MSD recovery is outside acceptance limits F2 - MS/MSD RPD exceeds control limits X - Surrogate recoveries exceed control limits Comments: The laboratory report includes results for the required parameters as included in Table E-7 of the NPDES Permit; however, the laboratory report includes 10. Does the laboratory report include results for only those 5 additional PAH results not requested in the COC at all four sampling stations. YES ☑ NO ☐ N/A These additional PAHs include Acenaphthylene, 1-Methylnaphthalene, 2constituents requested in the COC? Methylnaphthalene, Naphthalene, and Phenanthrene. Data for these parameters are not required and are therefore not accounted for in this data validation.

Tesoro Refining & Marketing LLC Los Angeles Refinery - Carson Operations Dominguez Channel Estuary Sediment Monitoring Organic/Inorganic Analytical Data Validation Form 11. Were laboratory method blank samples free of target Comments: Laboratory method blanks were free of target analyte for all ✓ YES □ NO□ N/A parameters at all sampled stations. analyte contamination? 12. Were instrument calibrations within method or data Comments: Instrument calibration data was not supplied in the analytical report YES NOV N/A and, therefore, not included in this analytical data validation analysis. validation control limits? 13. Were trip blank, field blank, and/or equipment rinse Comments: Not applicable. Trip blanks, field blanks and/or equipment rinse blank YES NOV N/A blank samples free of target analyte contamination? samples were not collected for this project. Comments: Surrogate recoveries are within control limits at all sampling stations including surrogates used for PAHs (method 8279C), tributyltin (Krone et al), TPH (method 8015B), PCBs (method 8082), metals (method 6020) and total organic carbon (9060A). 14. Were surrogate recoveries within control limits? ✓ YES ☐ NO☐ N/A 15. Were laboratory control sample recoveries within Comments: Laboratory control sample recoveries were within acceptable control √ YES □ NO□ N/A limits for all parameters. control limits?

Tesoro Refining & Marketing LLC Los Angeles Refinery - Carson Operations Dominguez Channel Estuary Sediment Monitoring Organic/Inorganic Analytical Data Validation Form Comments: The Matrix Spike (MS)/Matrix Spike Duplicate (MSD) recoveries were outside control limits for PAH, organotins, metals; however, as explained in the Job 16. Were Matrix Spike (MS) / Matrix Spike Duplicate (MSD) YES NO Narrative for laboratory report 570-69878-1, sample matrix interference and/or recoveries within control limits? nonhomogeneity is suspected. $\sqrt{}$ Comments: Does not apply to this level of data validation. In addition, GC/MS 17. Were internal standards within method criteria for YES NO N/A internal standard data was not supplied in the analytical reports and was therefore GC/MS sample analysis? not included in this data review. 18. Were 100% of the Electronic Data Deliverable (EDD) concentrations and reporting limits compared to the] YES ☐ NO☑ N/A Comments: No EDD was used for this project. hardcopy data reports?

Los Angeles Refinery - Carson Operations

| | LOS Aligeres inc | childry - Carson Operations |
|--|-------------------------------------|--|
| Dominguez (| Channel Estuary Sediment Monif | toring Organic/Inorganic Analytical Data Validation Form |
| PRE | CISION, ACCURACY, METHOD C | OMPLIANCE AND COMPLETENESS ASSESSMENT |
| Precision Determination: | Acceptable | ☐ Not Acceptable |
| Comments: Precision is the measure of variab | ility of individual sample measur | rements. Laboratory precision was determined by examination of laboratory duplicate |
| results. To evaluate laboratory duplicates for | precision the Relative Percent dif | fference (RPD) was used. RPD is defined as the difference between two duplicate samples |
| divided by the mean and expressed as a perce | nt. RPD precision measurement | s were compared to laboratory QC limits and it was determined that RPDs were within the |
| RPD limits, except for PAHs, organotins, and n | neals. The associated laboratory | control sample / laboratory sample duplicate for this parameter, however, was within |
| acceptance limits. Therefore, data precision o | btained for all analyzed paramet | ers was determined to be acceptable. |
| | | |
| Accuracy Determination: | ✓ Acceptable | ☐ Not Acceptable |
| Comments: Accuracy is the closeness of a mea | asured result to an accepted refe | erence value usually measured as percent recoveries. Laboratory accuracy is a measure of |
| system bias measured by evaluating Lab Cont | rol Samples (LCS), Lab Control Sa | imple Duplicate (LCSD), matrix spikes (MS) and/or matrix spike duplicates (MSD), and |
| organic system monitoring compound surroga | ite percent recoveries (%Rs). Dat | ta validation assessments revealed all LCS/LCSD were within acceptable criteria. MS and |
| MSD recoveries outside the acceptable range | are reported in the Job Narrative | e of the laboratory report. Due to the LCS/LCSD meeting applicable criteria, data accuracy |
| for analyzed parameters was determined to b | e acceptable. | |
| Method Compliance Determination: | ✓ Acceptable | ☐ Not Acceptable |
| Comments: Method compliance was determine | ned by evaluating sample integrif | ty, holding time, reporting limits and laboratory blanks per method specific requirements. |
| Assessment of these factors is presented above | ve in questions 1, 2, 3 and 4. Data | a validation determined method compliance to be acceptable. |
| | | |
| Completeness Determination: | ✓ Acceptable | ☐ Not Acceptable |
| Comments: Completeness is the overall ratio | of the number of samples planne | ed versus the number of samples with valid analyses. Project completeness was performed |
| by evaluating COC records, laboratory analytic | cal methods, and detection limits | s as well as sample data results and QC summary reports. Data assessment for the |
| collected samples determined the overall data | a completeness to be acceptable | |

ATTACHMENT 6

SEDIMENT BIOASSAY DATA VALIDATION REPORT

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Sediment Bioassay Data Validation Report

Table of Contents

| 1.0 | Chronic Toxicity Test Overview | l |
|-----|--|------|
| 1.0 | | 1 |
| 2.0 | Data Review | 1 |
| | | 1 |
| 3.0 | Eohaustorius estuarius Chronic Toxicity Test | 2 |
| 3.1 | Sample Collection, Sample Preservation, Chain of Custody | |
| 3.2 | | |
| | Test Setup | ∠ |
| 3.3 | Test Implementation | |
| 3 | .3.1 Test Acceptability Criteria | |
| 3.4 | Reporting | |
| 3.5 | Overall Data Usability | 3 |
| 4.0 | Mytilus galloprovincialis Chronic Toxicity Test | 3 |
| | | |
| 4.1 | Sample Collection, Sample Preservation, Chain of Custody | 3 |
| 4.2 | Test Setup | 4 |
| 4.3 | Test Implementation | |
| 4 | .3.1 Test Acceptability Criteria | |
| 4.4 | Reporting | |
| 4.5 | Overall Data Usability | |
| | 5 - 51 min 5 min 5 m 5 m 5 m 5 m 5 m 5 m 5 m 5 m 5 m 5 | •••• |

Attachment:

Attachment I – Dominguez Channel Estuary Sediment Bioassay Data Validation Form

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Sediment Bioassay Data Validation Report Page 1 of 4

1.0 Chronic Toxicity Test Overview

On behalf of Tesoro Refining & Marketing Company LLC, Los Angeles Refinery – Carson Operations (herein facility), WGR Southwest, Inc. (WGR) collected sediment samples at monitoring locations SED-003, SED-004, SED-005, SED-006, and SED-007 as required in National Pollutant Discharge Elimination System (NPDES) No. CA0000680. Sediment samples for chronic toxicity testing were collected on September 8, 2021 and submitted to Aquatic Bioassay & Consulting Laboratories Inc. on September 13, 2020 for analysis. Aquatic Bioassay & Consulting Laboratories has Environmental Laboratory Accreditation Program (ELAP) Certification number 1907.

In accordance with NPDES No. CA0000680 Attachment E, Section V.A.4, chronic toxicity samples are required to undergo a species sensitivity screening by concurrently conducting three toxicity tests using the fish, invertebrate and alga species listed in the permit order. Based on the results of the species sensitivity screening, the single species exhibiting the highest percent effect is required to be used for routine monitoring during the permit cycle. The species listed in the permit order, however, are more commonly used to evaluate effluent chronic toxicity rather than sediment toxicity. Therefore, with laboratory staff and Regional Water Quality Control Board guidance, a species sensitivity screening was conducted for chronic toxicity samples from September 9, 2021 using *Eohaustorius estuarius* sediment species and *Mytilus galloprovincialis* sediment species. Sediment chronic toxicity samples were tested in accordance with the guidelines prescribed in Methods for Assessing the Toxicity of Sediment Associated Contaminants with Estuarine and Marine Amphipods, Methods EPA/600/R-94/025 and EPA R-95/136.

2.0 Data Review

A level 2 data verification protocol was used for bioassay validation. The level 2 data review compares bioassay testing holding conditions, test setup, test implementation, and test termination in accordance with bioassay protocols. As part of the level 2 data verification protocol the laboratory was expected to follow all internal quality control procedures as directed in the applicable analytical method. Outcome of the data review for each of the chronic toxicity tests performed is documented in the *Chronic Toxicity QA/QC Bioassay Data Validation Form* included in Attachment I of this report.

Sediment samples at Stations SED-003, SED-004, SED-005, SED-006, and SED-007 were collected on September 9, 2021 by WGR Southwest Inc. All collected samples were preserved as required and submitted to Aquatic Bioassay and Consulting Laboratories Inc. on September 13, 2021. Chronic toxicity tests for all five stations began on September 21, 2021 and concluded on October 1, 2021. A summary of data usability determinations for the chronic toxicity test performed are described in the following section.

3.0 Eohaustorius estuarius Chronic Toxicity Test

3.1 Sample Collection, Sample Preservation, Chain of Custody

Sediment samples for *E. estuarius* chronic toxicity testing were collected from Stations SED-003, SED-004, SED-005, SED-006, and SED-007 using an Eckman dredge sampler. Sampling equipment was decontaminated prior to use at each station to prevent cross contamination. Field samples were handled with care to minimize sediment disturbance and prevent the loss of sample integrity, chemical speciation and chemical equilibrium. Collected samples were maintained at 4°C and a Chain of Custody documenting the collected samples was completed and submitted to Aquatic Bioassay & Consulting Laboratories Inc. Chronic toxicity testing was initiated for all samples within the required 14-day holding time for sample collection and analysis. Document review of sample collection, sample preservation and Chain of Custody procedures was deemed acceptable and in compliance with the facility's Waste Discharge Requirements (WDRs).

3.2 Test Setup

Chronic toxicity testing with *E. estuarius* was completed in accordance with EPA method 600/R-94-025. Organisms used for testing were field collected and supplied by Northwestern Amphipod in Oregon. Amphipods ranging in 3-5 mm in size were used, with at least twenty organisms per replicate. Test setup review is provided in the bioassay data validation form attached to this document. Based on a review of laboratory test setup procedures, test set up procedure were deemed acceptable and in compliance with EPA method requirements.

3.3 Test Implementation

Test implementation for chronic toxicity testing with *E. estuarius* was completed in accordance with EPA method 600/R-94/025. Water quality measurements were recorded during the duration of the test and were found to be in the acceptable range as specified in the test protocol. Ranges for the water quality measurements are provided in the QA/QC Checklist of Attachment I. No abnormal conditions were observed throughout the duration of the test. Thus, the test implementation was determined to be acceptable and in compliance with EPA method requirements.

3.3.1 Test Acceptability Criteria

3.3.1.1 Reference Toxicant

The reference toxicant used during *E. estuarius* chronic toxicity testing was unionized ammonia. The length of the reference toxicant test was 96 hours. All reference toxicant testing was within the two standard deviation quality control limit meeting the

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Sediment Bioassay Data Validation Report Page 3 of 3

test acceptability criteria in compliance with EPA method requirements.

3.3.1.2 Negative Control Samples

Negative control samples demonstrated a 99% survival at all sample stations, which is above the 90% mean acceptability survival criteria. As a result, the negative control sample results are considered acceptable at all sampled stations and in compliance with EPA method requirements.

3.4 Reporting

Bioassay results were delivered in an acceptable laboratory report documenting a summary of water quality results, reference toxicity results, test results, statistical calculations and percent mortality. Additional information regarding test setup/test implementation procedures was provided by the laboratory to complete the QA/QC bioassay data validation form. Overall, the reporting component presenting chronic toxicity test results for *E. estuarius* was deemed acceptable.

3.5 Overall Data Usability

Review of laboratory data indicated chronic toxicity testing was performed in accordance with EPA method 600/R-94/025 as documented in Attachment I. Through the bioassay laboratory report and additional clarification from the laboratory, the bioassay test results at all sample stations was deemed acceptable and in compliance with EPA method requirements.

4.0 Mytilus galloprovincialis Chronic Toxicity Test

4.1 Sample Collection, Sample Preservation, Chain of Custody

Sediment samples for *M. galloprovincialis* chronic toxicity testing were collected from Stations SED-003, SED-004, SED-005, SED-006, and SED-007 using an Eckman dredge sampler. Sampling equipment was decontaminated prior to use at each station to prevent cross contamination. Field samples were handled with care to minimize sediment disturbance and prevent the loss of sample integrity, chemical speciation and chemical equilibrium. Collected samples were maintained at 4°C and a Chain of Custody documenting the collected samples was completed and submitted to Aquatic Bioassay & Consulting Laboratories Inc. Chronic toxicity testing was initiated for all samples within the required 14-day holding time for sample collection and analysis. Document review of sample collection, sample preservation and Chain of Custody procedures was deemed acceptable and in compliance with the facility's Waste Discharge Requirements (WDRs).

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Sediment Bioassay Data Validation Report Page 4 of 3

4.2 Test Setup

Chronic toxicity testing with *M. galloprovincialis* was completed in accordance with EPA method R-95/136. Organisms used for testing were cultured and supplied by Carlsbad Aquafarms. There was an even sex ratio of brood stock and at least twelve organisms per test. Test setup review is provided in the bioassay data validation form attached to this document. Based on a review of laboratory test setup procedures, test set up procedure were deemed acceptable and in compliance with EPA method requirements.

4.3 Test Implementation

Test implementation for chronic toxicity testing with *M. galloprovincialis* was completed in accordance with EPA method R-95/136. Water quality measurements were recorded during the duration of the test and were found to be in the acceptable range as specified in the test protocol. Ranges for the water quality measurements are provided in the QA/QC Checklist of Attachment I. No abnormal conditions were observed throughout the duration of the test. Thus, the test implementation was determined to be acceptable and in compliance with EPA method requirements.

4.3.1 Test Acceptability Criteria

4.3.1.1 Reference Toxicant

The reference toxicant used during *M. galloprovincialis* chronic toxicity testing was unionized ammonia. The length of the reference toxicant test was 48 hours. All reference toxicant testing was within the two standard deviation quality control limit meeting the test acceptability criteria in compliance with EPA method requirements.

4.3.1.2 Negative Control Samples

Negative control samples demonstrated a 99% survival at all sample stations, which is above the 90% mean acceptability survival criteria. As a result, the negative control sample results are considered acceptable at all sampled stations and in compliance with EPA method requirements.

4.4 Reporting

Bioassay results were delivered in an acceptable laboratory report documenting a summary of water quality results, reference toxicity results, test results, statistical calculations and percent mortality. Additional information regarding test setup/test implementation procedures was provided by the laboratory to complete the QA/QC bioassay data validation form. Overall, the reporting component

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Sediment Bioassay Data Validation Report Page 5 of 3

presenting chronic toxicity test results for *M. galloprovincialis* was deemed acceptable.

4.5 Overall Data Usability

Review of laboratory data indicated chronic toxicity testing was performed in accordance with EPA method R-95/136 as documented in Attachment I. Through the bioassay laboratory report and additional clarification from the laboratory, the bioassay test results at all sample stations was deemed acceptable and in compliance with EPA method requirements.

Attachment I Dominguez Channel Estuary Sediment Bioassay Data Validation Form

Los Angeles Refinery - Carson Operations

Dominguez Channel Estuary Chronic Toxicity QA/QC Bioassay Data Validation

| | | PROJECT IN | IFORMATION | | | | | |
|---------------------------------|---|--|--|--|--|--|--|--|
| Project Name: | Dominguez Channel Sedimer | nt Sampling | | | | | | |
| Analytical Laboratory: | Aquatic Bioassays & Consulti | atic Bioassays & Consulting Laboratories Inc. | | | | | | |
| Laboratory Technician: | Joe Freas | | | | | | | |
| Sample Collection Date: | September 9, 2021 | | | | | | | |
| Sample Locations/Lab Number: | Eohaustorius estuarius | SED-003 / W | VGR1021.057 | | | | | |
| | | SED-004 / WGR1021.058 | | | | | | |
| | | SED-005 / WGR1021.059 | | | | | | |
| | | SED-006 / WGR1021.060 | | | | | | |
| | NA. wiles and a constitution | SED-007 / WGR1021.061 | | | | | | |
| | Mytilus galloprovincialis | alis SED-003 / WGR0921.057 SED-004 / WGR0921.058 | | | | | | |
| | | SED-004 / WGR0921.058 SED-005 / WGR0921.059 | | | | | | |
| | | SED-006 / WGR0921.060 | | | | | | |
| | | SED-007 / WGR0921.061 | | | | | | |
| Species/Test Method Referenced: | Eohaustorius estuarius | Test | SED-003: September 21, 2021 @ 13: 00 - October 1, 2021 @13:00 (10 day) | | | | | |
| | EPA/600/R-94-025 | Duration: | SED-004: September 21, 2021 @ 13: 01 - October 1, 2021 @13:01 (10 day) | | | | | |
| | | SED-005: September 21, 2021 @ 13: 02 - October 1, 2021 @13:02 (10 day) | | | | | | |
| | | SED-006: September 21, 2021 @ 13: 03 - October 1, 2021 @13:03 (10 day) | | | | | | |
| | A A A I II A A A I I | | SED-007: September 21, 2021 @ 13: 04 - October 1, 2021 @ 13:04 (10 day) | | | | | |
| | Mytilus galloprovincialis EPA/600/R-95-136 | Test Duration: | SED-003: September 15, 2021 @ 14: 00 - September 17, 2021 @14:00 (48 hours) SED-004: September 15, 2021 @ 14: 01 - September 17, 2021 @14:01 (48 hours) | | | | | |
| | EPA/600/R-95-136 | Duration: | SED-004: September 15, 2021 @ 14: 01 - September 17, 2021 @ 14:01 (48 hours) SED-005: September 15, 2021 @ 14: 02 - September 17, 2021 @ 14:02 (48 hours) | | | | | |
| | | | SED-005: September 15, 2021 @ 14: 02 - September 17, 2021 @ 14:03 (48 hours) | | | | | |
| | | | SED-007: September 15, 2021 @ 14: 04 - September 17, 2021 @14:04 (48 hours) | | | | | |
| Sample Matrix: | Sediment | <u> </u> | | | | | | |
| Type of Species: | Estuarine | | | | | | | |
| Data Validator: | Amber Ballrot | | | | | | | |
| Validation Date: | January 6, 2021 | | | | | | | |
| Signature: | Amlu Bellest | | | | | | | |
| Problems Noted: | No problems or deficiencies | identified. Ch | ronic toxicity testing was performed in accordance with EPA method guidelines. | | | | | |

Los Angeles Refinery - Carson Operations

Dominguez Channel Estuary Chronic Toxicity QA/QC Bioassay Data Validation

EOHAUSTORIUS ESTUARIUS

Type of Samples Collected: Grab Sediment Samples

Number of Samples Analyzed: 5

Were samples maintained at 4°C and in the dark after collection? Yes

Did chronic toxicity testing begin within 14 days of sample collection? Yes

Holding conditions acceptable? Yes

If holding conditions were not acceptable, explain: N/A

Quality of Test Organism, Collection and Acclimation:

Who is the supplier of the test organisms? | Northwestern Amphipod in Newport, Oregon

Are organisms field collected or cultured?

Field Collected

If field collected:

Where was the collection location? Newport, Oregon

What was the organism collection date? Organism collection date was on 9/13/2021. Organisms were received by the laboratory on 9/15/2021.

What was the water salinity and temperature at the time of collection? Water salinity at time of collection was 28 ppt and temperature was 14.2 °C. Organisms were acclimated at 26 ppt after collection and later, 24ppt and -2 ppt/day until reaching 20ppt.

Was site sediment collected for holding an acclimation purposes? Yes, 2L of site sediment was collected and supplied to Aquatic Bioassay for negative control.

Additional Comments: Quality of test organisms and acclimation is deemed acceptable.

Field Collection Sorting Methods

Were healthy amphipods placed into 10 cm diameter finger bowls with 2 cm sieved site sediment and seawater of appropriate salinity? Yes, only healthy amphipods were used in testing. All sediment was sieved through stainless 2mm sieve. Overlying water of 20ppt was used for testing.

Were organisms held for 2-10 days? Yes, organisms were held for 6 days prior to testing.

Was test sediment sieved through 2 mm sieve or forceps for predator removal? Yes, sediment was sieved using a 2mm stainless sieve.

Was control sediment sieved twice through 0.5 mm? Yes

Did control sediment have a 4-hour settling period after each sieving? Yes, control has a >4 hour settling period after each sieving.

Test Initiation

Was salinity adjusted in all testing chambers? Yes

Was overlying ammonia detected? No ammonia was detected on overlying water. MDL 0.1mg/L.

Were there at least 5 replicates per sample? Yes

Was there at least 20 animals per replicate? Yes

Were 1 liter glass containers with 10 cm diameters used for each test chamber? Yes, 1L wide mouth glass containers (10 cm dia.) were used in testing.

Was water in each test chamber aerated overnight before start and throughout the test? Aeration occurred at 1bbl/second throughout testing.

Los Angeles Refinery - Carson Operations

Dominguez Channel Estuary Chronic Toxicity QA/QC Bioassay Data Validation

Was the organism length between 3-5 mm during test initiation? Yes, organism length was checked using dial calipers and confirmed within 3-5mm at test initiation.

Was the overlying water volume 800 mL? Yes

Were there any water quality adjustments? Yes, water quality measurements were collected during the duration of the test and are provided in the corresponding laboratory report.

Test Implementation

Photoperiod for 24 hours? Continuous light was provided.

Was daily water quality monitoring conducted? Yes

What was the overlying daily temperature range (15°C)? The overlying daily temperature was maintained at 15°C.

Was the daily salinity range 20+/-1 ppt? Yes, salinity range 20ppt.

Was water renewal conducted? No, water remained static and was not renewed over the 10-day exposure period as required in the EPA method.

Was the overlying daily pH between 7 – 8 standard units? Yes

What was the overlying ammonia detection (ND)? All overlying water was screened for ammonia and results were ND <0.1 mg/L.

Were appropriate test changes used (1-liter glass containers with 10 cm diameter)? Yes, 1L wide mouth glass containers (10 cm dia.) were used in testing.

Was water in each test chamber aerated overnight before start and throughout the test? Yes, aeration occurred at 1bbl/ second throughout testing.

Did the water maintain at least more than 90% saturation of dissolved oxygen concentration? Yes

Test Results and Analysis

Were the number of amphipods reported for each replicate? Yes

Was the percent mortality reported for each replicate? Yes

Was the sample mean for survival reported? Yes, the mean control survival was 100%

QA/QC Samples

| a, y ac sumples | , |
|--|---|
| Positive Control | Negative Control |
| Length of reference toxicity test? 96 hours | Negative control response above 90% acceptability criteria? Yes |
| What reference toxicant was used? Unionized Ammonia | Mean control survival? 100% |
| Exposure concentrations? Exposure ammonia concentrations were 0, 15.6, 32.2, 62.5, 125.0, 250 mg/L | Did EC 50 fall within lab standards? Yes |
| Did EC 50 fall within lab standards? Yes | |

Los Angeles Refinery - Carson Operations

Dominguez Channel Estuary Chronic Toxicity QA/QC Bioassay Data Validation

MYTILUS GALLOPROVINCIALIS

Completeness and Holding Conditions:

Type of Samples Collected? Grab Sediment Samples

Number of Samples Analyzed: 5

Were samples maintained at 4°C and < 2 weeks in darkness? Yes

Did chronic toxicity testing begin within 14 days of sample collection? Yes

Holding conditions acceptable? Yes

If holding conditions were not acceptable, explain: N/A

Organism Collection and Acclimation:

Who is the supplier of the test organisms? Carlsbad Aquafarms

Are organisms field collected or cultured? Cultured

Was there an even sex ratio of brood stock? Yes

Were organisms maintained at 15°C? Yes

Were organisms brushed to remove encrusting organisms? Yes, organisms were brushed upon arrival.

Test Initiation

Were at least 12 test organisms used per test? Yes, a batch of 40-60 were spawned.

Was spawning successful within the first 30 minutes of beginning spawning process? Yes, spawning was immediate.

If spawning was unsuccessful, were any stimulants (i.e.- algae) used to promote spawning?

Was temperature maintained at 20°C during spawning? Yes, spawning induction was 20 °C. Post spawning organisms are move back to a fresh dish at 15 °C.

Test Implementation

Was the photoperiod 16 hr. light/8 hr. darkness? Yes

Were appropriate 30 mL chamber used? Yes

Was initial water quality monitoring conducted? Yes

Did light intensity remain at ambient laboratory conditions? Yes

What was the temperature range of the water? Temperature remained 15±1 °C.

Did dissolved oxygen concentrations remain above 4 mg/l? Yes

Did salinity range 30 +/- 2 ppt? Salinity remained within 30±2ppt.

What reference toxicant was used? Unionized ammonia was used as the reference toxicant.

What were the concentrations used for the reference toxicant? Concentrations included 0.0, 2.0, 4.0, 6.0, 8.0 and 10.0 mg/L

Test Results and Analysis

Did mussel embryos show 50% survival in control vials? Yes

Did mussels show 90% normal shell development in surviving controls? Yes

QA/QC Samples

Was a percent MSD of <25% demonstrated? Yes

Dominguez Channel Estuary November 2021 Sediment Monitoring Report

Prepared for:

Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations 1801 East Sepulveda Boulevard Carson, CA 90745

Prepared by:

WGR Southwest, Inc. 11021 Winners Circle, Suite 101 Los Alamitos, CA 90720

Date:

January 21, 2022

TESORO REFINING & MARKETING COMPANY LLC LOS ANGELES REFINERY – CARSON OPERATIONS DOMINGUEZ CHANNEL ESTUARY SEDIMENT MONITORING REPORT 2021

TABLE OF CONTENTS

| 1.0 | Introduction | on |
|----------|--------------|---|
| 2.0 | Sediment | Monitoring |
| 3.0 | Laboratory | y Results |
| 4.0 | Executive | Summary |
| | | TABLES |
| Table 2 | 2.0. | Sediment Monitoring Field Observation and Analyses |
| 1 aute 2 | 2.0. | Sediffent Monitoring Field Observation and Analyses |
| | | <u>FIGURES</u> |
| Figure | 1: | Dominguez Channel Estuary Sediment Monitoring Locations |
| | | <u>ATTACHMENTS</u> |
| Attach | ment 1: | Sediment Monitoring Field Logs |
| Attach | ment 2: | Sediment Monitoring Laboratory Result Summary Table |
| Attach | ment 3: | Sediment Monitoring Aquatic Bioassay Analytical Laboratory Report |
| Attach | ment 4: | Sediment Bioassay Data Validation Report |

Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations Dominguez Channel Estuary November 2021 Sediment Monitoring Report Page 1 of 3

1.0 Introduction

On behalf of Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations (Tesoro LAR Carson), WGR Southwest, Inc. (WGR) conducted sediment monitoring of the Dominguez Channel Estuary in accordance with National Pollutant Discharge Elimination System Waste Discharge Requirements Permit Number CA0000680 Order Number R4-2015-0259 (WDR Permit). As required in Table E-7 of WDR Permit Attachment E, Monitoring and Reporting Program Number 5424 (MRP No. 5424), sediment monitoring is required at least once a year for all parameters and at least twice a year for Chronic Toxicity regardless of Tesoro LAR Carson discharge associated with the WDR Permit¹. Therefore, this report constitutes sediment monitoring for the second event of 2021, where the sediment samples collected were analyzed for Chronic Toxicity and required monitoring (i.e. field observations and field analyses) was completed.

2.0 Sediment Monitoring

As shown in Figure 1, the WDR Permit designates seven sediment monitoring locations: SED-001, SED-002, SED-003, SED-004, SED-005, SED-006, and SED-007. WGR field personnel utilized an Ekman dredge and a Horiba U-50 Series Multi-Parameter Meter. According to historic Tesoro LAR Carson Sediment Monitoring Reports, samplers have been unable to collect sediment samples from SED-001 since 2003 and SED-002 since 2003.

Sediment monitoring was attempted at all designated sediment monitoring locations on November 3, 2021. As detailed in the field logs (see Attachment 1), sediment samples and associated monitoring could only be feasibly completed at five of the seven sediment monitoring locations. Table 2.0 provides a summary of the field observations and analyses.

| | Table 2.0: See | diment Monitoring Fig | eld Observation and A | nalyse | S | | | | |
|-----------|----------------------|-----------------------|-----------------------|---------|----------------|-----------|------------|-----------------|------|
| | | Field Observations | | | Fi | eld A | nalys | ses | |
| Sample ID | Sediment Description | Biological Matter | Pollutants | pH (SU) | Salinity (PPT) | DO (mg/L) | SC (mS/Cm) | Turbidity (NTU) | Flow |
| SED-001 | Not Sampled | Not Sampled | Not Sampled | | 1 | I | ŀ | I | 1 |
| SED-002 | Not Sampled | Not Sampled | Not Sampled | | | | | | |

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¹ Tesoro LAR Carson did not discharge under the WDR Permit during the 2021 calendar year.

Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations Dominguez Channel Estuary November 2021 Sediment Monitoring Report Page 2 of 3

| | Table 2.0: See | diment Monitoring Fig | eld Observation and An | alyse | S | | | | |
|-----------------|--|--|---|----------------|----------------|-------------------|--------------------|-----------------|------|
| | | Field Observations | | | Fi | eld A | nalys | ses | |
| Sample ID | Sediment Description | Biological Matter | Pollutants | pH (SU) | Salinity (PPT) | DO (mg/L) | SC (mS/Cm) | Turbidity (NTU) | Flow |
| SED-003 | Dark in color with shell, vegetation and debris, biological odor | Vegetation present | Trash present | 7.70 | 17.8 | 1.61 | 28.3 | 37.5 | 1 |
| SED-004 | Dark in color with shells, vegetation and debris, biological odor | Vegetation present | Trash present | 7.37 | 10.9 | 12.59 | 18.2 | 42.4 | - |
| SED-005 | Dark in color with vegetation/debris and trash, biological odor | Vegetation present | Trash present | 77.7 | 18.4 | 10.49 | 29.2 | 25.3 | ł |
| SED-006 | Dark in color with vegetation/debris and trash, biological odor | Vegetation present | Trash present | 8.09 | 22.8 | 12.21 | 35.3 | 17.0 | ł |
| SED-007 | Dark in color with vegetation/debris and trash, biological odor | Vegetation present | Trash present | 8.09 | 22.4 | 8.63 | 35.7 | 19.1 | 1 |
| SED-004 SED-005 | Dark in color with shells, vegetation and debris, biological odor Dark in color with vegetation/debris and trash, biological odor Dark in color with vegetation/debris and trash, biological odor Dark in color with vegetation/debris and trash, biological odor | Vegetation present Vegetation present Vegetation present | Trash present Trash present Trash present | 8.09 7.77 7.37 | 22.8 18.4 10.9 | 12.21 10.49 12.59 | 5.7 35.3 29.2 18.2 | 17.0 25.3 42.4 | |

DO: Dissolved Oxygen SC: Specific Conductance

3.0 Laboratory Results

Table 2.0 summarizes the field observations and analyses for the November 2021 sediment monitoring event. Laboratory results are summarized in Attachment 2. The Aquatic Bioassay laboratory report is in Attachment 3. A data validation report for this laboratory analytical report is in Attachment 4.

4.0 Executive Summary

Receiving water sediment monitoring and analysis was conducted independent of any discharge from Tesoro LAR Carson. Pollutant concentrations demonstrated in this report are not associated with any contribution from Tesoro LAR Carson to the receiving water. There are

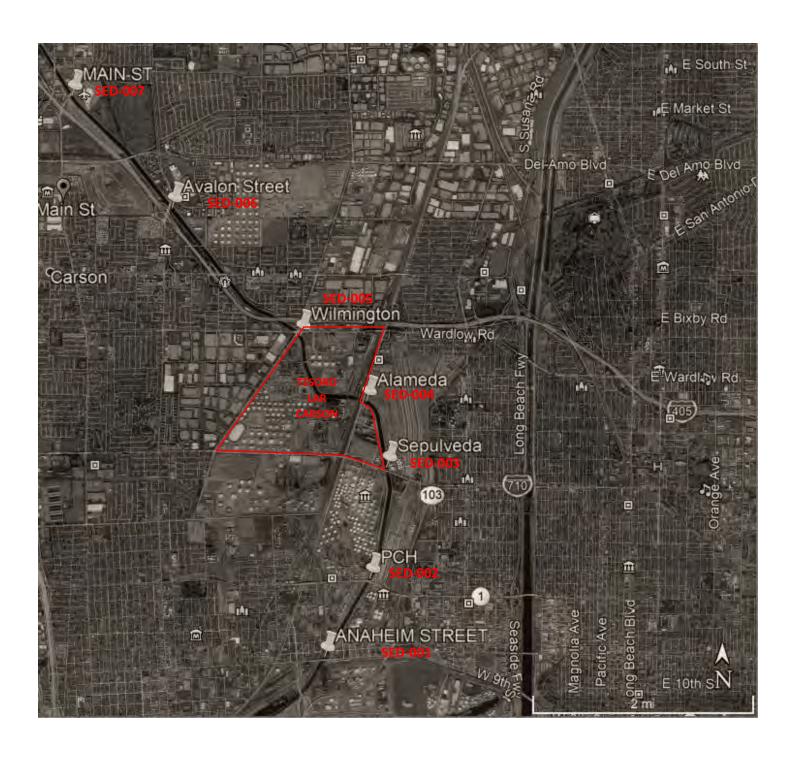
Tesoro Refining & Marketing Company LLC Los Angeles Refinery – Carson Operations Dominguez Channel Estuary November 2021 Sediment Monitoring Report Page 3 of 3

no pollutant concentration limits associated with this type of sampling as prescribed by the WDR Permit. Receiving water sediment monitoring and analysis was completed in compliance with the WDR Permit Attachment E, MRP No. 5424. As noted in the Sediment Bioassay Data Validation Report included in Attachment 4, analytical data obtained for this sampling event was deemed acceptable. No instances of non-compliance were identified.

FIGURE 1

DOMINGUEZ CHANNEL ESTUARY SEDIMENT MONITORING LOCATIONS

Figure 1: Dominguez Channel Estuary Sediment Monitoring Locations



ATTACHMENT 1

SEDIMENT MONITORING FIELD LOGS

| | WGR Southwest, In | ic. | Page 1 of 2 | | | | | |
|---------------------|--|--|---|--|--|--|--|--|
| | Field Log | | Date: 11/3/2021 | | | | | |
| Project Na | me: LARC Sediment 2021 | Field Personnel: | David Montelongo | | | | | |
| Project Nu | mber: 021.APC.01 | Field Personnel: | Karina Vega | | | | | |
| Tempera Weather: | litions/Project Discrepancies: ture: 55°F - 73°F Overcast - Partial Cloud Coverage, Sm _t ht Breeze | nog | | | | | | |
| Time | | Field Notes | | | | | | |
| 9:00 | Loaded Truck w/ Equipment, Safety | ed Truck w/ Equipment, Safety Meeting & Job Overview at Office | | | | | | |
| 9:30 | Bridge to Center: 102'. Measured distance, White Film observed on Warmurky, unable to see bottom of Channard trash/debris. Sediment smells of the second sec | pment for Sampling, Measured Distance from SE Corner of stance from Bridge Railing to Water Surface: 23'. Water in /ater Surface, Vegetation & Trash Along Embankment. Water innel. Sediment was dark in color w/ some vegetation, seashed bio-decomposition. bH, -191 ORPmV, 35.7 mS/cm, 19.1 NTU, 8.63 mg/L DO, | | | | | | |
| 10:50 | Left SED-007 for SED-006 | | | | | | | |
| 11:00 | Arrived @ SED-006, Measured Distant distance from Bridge Railing to Water Water Surface, Vegetation & Trash Ale Channel. Sediment was dark in color vesmells of bio-decomposition. Horiba Meter Readings: 69.6°F, 8.09p-21.4 g/L TDS, 22.8 ppt. | Surface: 24'. Water in C ong Embankment. Wate w/ some vegetation, sea | hannel, White Film observed on r is murky, unable to see bottom of shells, and trash/debris. Sediment | | | | | |
| 11:35 | Left SED-006 for SED-005 | | | | | | | |
| 11:50 | Arrived @ SED-005, Measured Distandistance from Bridge Railing to Water Water Surface, Vegetation & Trash Ald Channel. Sediment was dark in color was mells of bio-decomposition. Horiba Meter Readings: 70.2°F, 7.77pl | Surface: 23'. Water in Cl ong Embankment. Water v/ some vegetation, seas | nannel, White Film observed on is murky, unable to see bottom of shells, and trash/debris. Sediment | | | | | |
| | 16.8 g/L TDS, 18.4 ppt. | 11, 00 O.M. MAY 20,2 MG | , goig of forte ingre see | | | | | |
| | | | | | | | | |

Last Revised 9/5/2019 P:\WGR\Forms

Page 2 of 2 WGR Southwest, Inc. Field Log Date: 11/3/2021 Project Name: LARC Sediment 2021 Field Personnel: David Montelongo Project Number: 021.APC.01 Field Personnel: Karina Vega Field Conditions/Project Discrepancies: Temperature: 55°F - 73°F Weather: Overcast - Partial Cloud Coverage, Smog Wind: Light Breeze Field Notes Time Arrived @ SED-004, Measured Distance from SE Corner of Bridge to Center: 89'. Measured 14:00 distance from Bridge Railing to Water Surface: 23'. Water in Channel, White Film observed on Water Surface, Vegetation & Trash Along Embankment. Water is murky, unable to see bottom of Channel. Sediment was dark in color w/ some vegetation, seashells, and trash/debris. Sediment smells of bio-decomposition. Horiba Meter Readings: 75.6°F, 7.37pH, 33 ORPmV, 18.2 mS/cm, 42.4 NTU, 12.59 mg/L DO, 10.1 g/L TDS, 10.9 ppt. Left SED-004 15:15 Arrived @ SED-003, Measured Distance from NE Corner of Bridge to Center: 119'. Measured 15:20 distance from Bridge Railing to Water Surface: 24'. Water in Channel, White Film observed on Water Surface, Vegetation & Trash Along Embankment. Water is murky, unable to see bottom of Channel. Sediment was dark in color w/ some vegetation, seashells, and trash/debris. Sediment smells of bio-decomposition. Horiba Meter Readings: 72.3°F, 7.70pH, 24 ORPmV, 28.3 mS/cm, 37.5 NTU, 1.61 mg/L DO, 16.2 g/L TDS, 17.8 ppt. Left SED-003 for SED-002 16:10 Drove past SED-002; Sample Point Inaccessible. Continued to SED-001 16:15 16:25 Arrived at SED-001, Measured Distance from NE Corner of Bridge to Center: 920'. Measured Distance from Bridge Railing to Water Surface: 56'. Attempted Sediment Retrieval numerous times without success. Determined unable to sample SED-001. Returned to truck. 17:00 Left SED-001. End of Day

Last Revised 9/5/2019 P:\WGR\Forms

ATTACHMENT 2

SEDIMENT MONITORING LABORATORY RESULT SUMMARY TABLE

| Sample ID | SED-001 | SED-002 | SED-003 | SED-004 | SED-005 | SED-006 | SED-007 |
|--|---------|---------|-----------|-----------|-----------|-----------|-----------|
| Date Sampled | NS | NS | 11/3/2021 | 11/3/2021 | 11/3/2021 | 11/3/2021 | 11/3/2021 |
| Time Sampled | NS | NS | 15:20 | 14:00 | 11:50 | 11:00 | 9:30 |
| Total Metals | | | | | | | |
| Cadmium (EPA 6020) (mg/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Chromium (EPA 6020) (mg/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Copper (EPA 6020) (mg/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Lead (EPA 6020) (mg/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Nickel (EPA 6020) (mg/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Zinc (EPA 6020) (mg/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Mercury (EPA 7471A) (mg/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Volatile/Semi-Volatile Organic Compounds | | | | | | | |
| Chlordane (EPA 8081A) (ug/Kg) | NS | NS | NR | NR | NR | NR | NR |
| DDT (EPA 8081A) (ug/Kg, sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'- | NS | NS | NR | NR | NR | NR | NR |
| DDE, 4,4'-DDD, and 2,4'-DDD) | INS | INS | INIT | INK | INK | INK | INK |
| PCBs (EPA 8082) (ug/Kg, sum of Arochlor 1016, Arochlor 1221, | | | | | | | |
| Arochlor 1232, Arochlor 1242, Arochlor 1248, Arochlor 1254, and | NS | NS | NR | NR | NR | NR | NR |
| Arochlor 1260) | | | | | | | |
| PAHs (EPA 8270C) (mg/Kg, sum of acenaphthene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, and pyrene) | NS | NS | NR | NR | NR | NR | NR |
| Total Petroleum Hydrocarbons (EPA 8015B) (mg/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Sediment Grain Size (ASTM D4464) | | | | NR | | | |
| Total Organic Carbon (EPA 9060A) (mg/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Tributyltin (Krone et al.) (ug/Kg) | NS | NS | NR | NR | NR | NR | NR |
| Chronic Toxicity | | | | | | | _ |
| Eohaustorius estuarius (NOEC in %) | NS | NS | 100% | 100% | 100% | 100% | 100% |

NS = Not Sampled

NR = Not Required

ND = Non-Detect

NOEC = No Observed Effect Concentration

ATTACHMENT 3

SEDIMENT MONITORING AQUATIC BIOASSAY ANALYTICAL LABORATORY REPORT



December 3, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs. Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-003

DATE RECEIVED: 11/4/2021

ABC LAB. NO.: WGR1121.046

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Your very truly,

w Scott Johnson

Laboratory Director

CETIS Summary Report

03 Dec-21 15:44 (p 1 of 1) 12-3586

| choir pare. | 05 Dec-21 15.44 (p |
|--------------|---------------------|
| est Code/ID: | WGR1121.046 / 08-99 |

| | | | | | | | Test | Code/ID: | WGR | 121.0467 | 08-9912-3586 | |
|-------------------------|------------------|----------------|------------|-----------------|----------------|----------------|---------------------------|------------|---------------------------------|-----------|---------------|--|
| Eohaustorius | 10-d Survival an | d Rebur | ial Sedime | ent Test | | | | Aquatic | Bioassay & | Consultir | ıg Labs, Inc. | |
| Batch ID: | 07-6098-5068 | T | est Type: | Survival-Reburi | ai | | Anal | yst: Joe | Freas | | | |
| Start Date: | 09 Nov-21 13:00 | P | rotocol: | EPA/600/R-94/ | 025 (1994) | | Dilu | ent: Lal | oratory Seav | vater | | |
| Ending Date: | 19 Nov-21 13:00 | S | pecies: | Echaustorius es | stuarius | | Brin | e: No | Applicable | | | |
| Test Length: | 10d 0h | T | axon: | Malacostraca | | | Sou | rce: No | orthwestern Aquatic Scienc Age: | | | |
| Sample ID: | 12-6755-9635 | С | ode: | WGR1120.046 | gir II | | Proj | ect: 02 | 021.APC.01 | | | |
| Sample Date: | 03 Nov-21 15:20 | N | laterial: | Sediment | | | Sou | rce: Bio | assay Report | | | |
| Receipt Date: | 04 Nov-21 16:00 | C | AS (PC): | | | | Stati | on: SE | D-003 | | | |
| Sample Age: | 5d 22h | C | lient: | WGR Southwes | st Inc. | | | | | | | |
| Single Compa | arison Summary | | | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value Comparison Result | | | | S | |
| 02-8811-6571 | Survival Rate | | Wilco | kon Rank Sum T | wo-Sample | Test | 1.0000 | 100% pa | 00% passed survival rate | | | |
| Test Acceptat | oility | | | | | TAC | Limits | 711 | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | | |
| 02-8811-6571 | Survival Rate | | Contro | ol Resp | 1 | 0.9 | >> | Yes | Passes Criteria | | | |
| Survival Rate | Summary | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect | |
| 0 | N | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0,0000 | 222 | 0.00% | |
| 100 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | - | 0.00% | |
| Survival Rate | Detail | | | | | | MD | 5: 41B4118 | 32B59AAABF | B2FDAA2 | 3D11B52E4 | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | | |
| 100 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | | |
| | Binomials | | | | | | | | | | | |
| Survivai Rate | Dillominais | | | | | | | | | | | |
| Survival Rate Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | | |
| | 20.05.00.20 | Rep 1 20/20 | Rep 2 | Rep 3 20/20 | Rep 4 20/20 | Rep 5 20/20 | | _ | | | | |

Report Date: Test Code/ID:

03 Dec-21 15:44 (p 1 of 2) WGR1121.046 / 08-9912-3586

| Eohaustorius | ohaustorius 10-d Survival and Reburial Sediment Test nalysis ID: 02-8811-6571 Endpoint: Survival Rate | | | | | | | | | | | Aquatic Bioassay & Consulting Labs, Inc. | | | | | |
|--|---|-----------------------|-----------------------------------|-------------------|---|----------|-----------------|-------------------|--|-----------------|---|--|-----------------------|------------------|--|--|--|
| Analysis ID: Analyzed: Edit Date: | 02-8811-6571 03 Dec-21 15:06 03 Dec-21 15:05 | | 3 Dec-21 15:06 | | Survival Rate Nonparametric-Two Sample 41B41182B59AAABFB2FDAA23D11B52E4 | | | | | Stat | CETIS Version: CETISv1.9.7 Status Level: 1 Editor ID: 007-979-628-1 | | | | | | |
| | | | Protocol: Species: | | Survival-Reburial EPA/600/R-94/025 (1994) Eohaustorius estuarius Malacostraca | | | Dilu Brin | Analyst: Joe Freas Diluent: Laboratory Seawater Brine: Not Applicable Source: Northwestern Aquatic Scienc Age | | | nc Age: | | | | | |
| Sample ID: Sample Date: Receipt Date: | 12-6755-9635 : 03 Nov-21 15:20 : 04 Nov-21 16:00 5d 22h | | 35. Code 5:20 Mate 6:00 CAS | | WGR1120_04 | | | | Ī | Project: 021.AF | | .APC.01 assay Repor | APC.01 ssay Report | | | | |
| Data Transfor | | 2211 | - | Client: | WGR Soul | nwest ii | iiC. | Compa | rison R | oculf | | | | | | | |
| Data Transform Alt Hyp Angular (Corrected) C > T | | | | /P | | | | | _ | | rate endpoin | it | | | | | |
| Wilcoxon Ran | ık Su | m Two-Sam | ple Tes | t | | | | | | | | | | | | | |
| Control | vs | Conc-% | | Test S 27.5 | | al T | | F P-Type Exact | | alue | Decision(| (α:5%) ficant Effect | | | | | |
| Negative Contr Test Acceptal Attribute | - | Criteria Test Stat | Lower | C Limits Upper | | ар С | Decision | (| 1.0 | 000 | Non-Signi | ilcant Effec | | | | | |
| Control Resp | | 1 | 0.9 | >> | Yes | F | Passes C | riteria | | | | | | | | | |
| ANOVA Table | | C C | | ****** | | | | F Ptat | n v | aleea | Davistan | E0/ \ | | | | | |
| Source Between | Sum Square | | o Wear | | Square | | F | F Stat | P-V | alue | ndeterminate | | | | | | |
| Error Total | | 0 | | 0 | | | | - | | | 110000 | | | | | | |
| ANOVA Assur | mptio | ns Tests | | | | | | 7 | | | | | | | | | |
| Attribute Variance | | | | Test | | | est Stat | Critical | P-V | alue | Decision(α:1%) Indeterminate | | | | | | |
| Distribution | | Shapiro-W | ilk W No | V Normality Test | | | | | | | Indetermir | nate | | | | | |
| Survival Rate | Sum | mary | | | | | | | | | | | | | | | |
| Conc-% | | Code N | Count 5 | 1.0000 | |) 1 | 5% UCL | Median | 1.0 | 000 | Max 1.0000 | Std Err 0.0000 | CV% 0.00% | %Effect 0.00% | | | |
| 100 | | 5 A A . W | 5 | 1.0000 | 1,0000 |) 1 | .0000 | | 1.0 | 000 | 1.0000 | 0.0000 | 0.00% | 0.00% | | | |
| Angular (Corr | ected | | | | 050/1 | | | | | | 200 | 044 5 | 01/0/ | NEG | | | |
| Conc-% | _ | Code N | Count 5 | Mean 1,4590 | 95% L | _ | 5% UCL .4590 | Median | Mir 1.4 | _ | Max 1.4590 | 0.0000 | CV% 0.00% | %Effect 0.00% | | | |
| 100 | | N | 5 | 1.4590 | | | 4590 | | | 590 | 1.4590 | 0.0000 | 0.00% | 0.00% | | | |
| Survival Rate | Deta | il | | | | | | | | | | | | | | | |
| Conc-% | | Code | Rep 1 | Rep 2 | Rep 3 | R | Rep 4 | Rep 5 | | | | | | | | | |
| 0 100 | | N | 1.0000 | | | | .0000 | 1.0000 | | | | | | | | | |
| Angular (Corr | ected |) Transform | ned Det | ail | | | | | | | | | | | | | |
| Conc-% | | Code | Rep 1 | Rep 2 | Rep 3 | R | lep 4 | Rep 5 | | | | | | | | | |
| 0 | | N | 1.4590 | | | | .4590 | 1.4590 | | | | | | | | | |
| 100 | | | 1.4590 | 1.4590 | 1.4590 | 1 | 4590 | 1,4590 | | | | | | | | | |

CETIS Analytical Report

Report Date: Test Code/ID:

03 Dec-21 15:44 (p 2 of 2) WGR1121.046 / 08-9912-3586

Echaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 02-8811-6571 Analyzed:

03 Dec-21 15:06

Endpoint: Survival Rate

Analysis: Nonparametric-Two Sample

CETIS Version:

Status Level:

1

Edit Date:

03 Dec-21 15:05

MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4

Editor ID:

007-979-628-1

CETISv1.9.7

CETIS Measurement Report

pH-Units

Report Date:

03 Dec-21 15:44 (p 1 of 1)

Test Code/ID: WGR1121.046 / 08-9912-3586

Eohaustorius 10-d Survival and Reburial Sediment Test Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 07-6098-5068 Test Type: Survival-Reburial Analyst: Joe Freas

Start Date: Protocol: EPA/600/R-94/025 (1994) Diluent: 09 Nov-21 13:00 Laboratory Seawater Ending Date: 19 Nov-21 13:00 Species: Eohaustorius estuarius Brine: Not Applicable Test Length: 10d 0h Taxon: Malacostraca Source: Northwestern Aquatic Scienc Age:

 Sample ID:
 12-6755-9635
 Code:
 WGR1120.046
 Project:
 021 APC.01

 Sample Date:
 03 Nov-21 15:20
 Material:
 Sediment
 Source:
 Bioassay Report

Receipt Date: 04 Nov-21 16:00 CAS (PC): Station: SED-003

Sample Age: 5d 22h Client: WGR Southwest Inc.

| Dissolved Oxygen-mg/L | | | | | | | | | | | | | |
|-----------------------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|--|--|
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count | | |
| 0 | N | 2 | 10.05 | 9.415 | 10.69 | 10 | 10.1 | 0.03536 | 0.07073 | 0.70% | 0 | | |
| 100 | | 2 | 10.15 | 9.515 | 10.79 | 10.1 | 10.2 | 0.03535 | 0.0707 | 0.70% | 0 | | |
| Overall | | 4 | 10.1 | 9.97 | 10.23 | 10 | 10.2 | 0.04082 | 0.08165 | 0.81% | 0 (0%) | | |

| F1.1.2.1.1.0 | | | | | | | | | | | |
|--------------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.7 | 7.698 | 7.702 | 7.7 | 7.7 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 7.8 | 7.616 | 7.984 | 7.7 | 7.9 | 0.05774 | 0.1155 | 1.48% | 0 (0%) |

| Salinity-ppt | | | | | | | | | | | |
|--------------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |

| Temperature-°C | | | | | | | | | | | |
|----------------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 14.75 | 14.11 | 15,39 | 14.7 | 14.8 | 0.03537 | 0.07075 | 0.48% | 0 |
| 100 | | 2 | 14.75 | 14.11 | 15.39 | 14.7 | 14.8 | 0.03537 | 0.07075 | 0.48% | 0 |
| Overall | | 4 | 14.75 | 14,66 | 14.84 | 14.7 | 14.8 | 0.02887 | 0.05774 | 0.39% | 0 (0%) |

Analyst: A QA:Z

007-979-628-1 CETIS™ v1.9.7.7



December 3, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs. Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*, Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-004

DATE RECEIVED: 11/4/2021

ABC LAB. NO.: WGR1121.047

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Yours yery truly,

Scott Johnson

Laboratory Director

| CETIS S | ummary | Report |
|----------------|--------|--------|
|----------------|--------|--------|

Report Date: Test Code/ID: 03 Dec-21 15:44 (p 1 of 1) WGR1121.047 / 13-8882-2314

| | | | | | | | Test | Code/ID: | WGR | 1121.047 / | 13-8882-2314 |
|---------------------|------------------|----------|-----------|------------------------|------------|--------|-------------|-----------|---------------|-------------|---------------|
| Eohaustorius | 10-d Survival an | d Reburi | al Sedime | ent Test | | | | Aquatio | Bioassay & | Consultin | ng Labs, Inc. |
| Batch ID: | 19-2970-8862 | Te | st Type: | Survival-Reburi | al | | Anal | lyst: Jo | e Freas | | |
| Start Date: | 09 Nov-21 13:01 | Pr | otocol: | EPA/600/R-94/ | 025 (1994) | | Diluent: La | | boratory Seav | vater | |
| Ending Date: | 19 Nov-21 13:01 | Sp | ecies: | Eohaustorius estuarius | | | Brin | e: No | t Applicable | | |
| Test Length: | 10d Oh | Ta | xon: | Malacostraca | | | Sou | rce: No | rthwestern A | quatic Scie | nc Age: |
| Sample ID: | 18-3474-6730 | Co | ode: | WGR1121.047 | | | Proj | ect: 02 | 1.APC.01 | | |
| Sample Date: | 03 Nov-21 14:00 | Ma | aterial: | Sediment | | | Sou | rce: Bio | assay Repor | t | |
| Receipt Date: | 04 Nov-21 16:00 | C | AS (PC): | | | | Stati | ion: SE | D-004 | | |
| Sample Age: | 5d 23h | CI | ient: | WGR Southwe | st Inc. | | | | | | |
| Single Compa | rison Summary | | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compar | son Result | | S |
| 00-4150-1788 | Survival Rate | | Wilco | xon Rank Sum T | wo-Sample | Test | 1.0000 | 100% pa | ssed survival | rate | - 1 |
| Test Acceptat | oility | | | | | TAC | Limits | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | |
| 00-4150-1788 | Survival Rate | | Contro | ol Resp | 1 | 0.9 | >> | Yes | Passes C | riteria | |
| Survival Rate | Summary | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | N | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | - | 0.00% |
| 100 | | 5 | 1.0000 | 0 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | - | 0.00% |
| Survival Rate | Detail | | | | | | MD | 5: 41B411 | B2B59AAABI | B2FDAA2 | 3D11B52E4 |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | 1.0 |
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | |
| 100 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | |
| Survival Rate | Binomials | | | | | | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| 0 | N | 20/20 | 20/20 | 20/20 | 20/20 | 20/20 | | | | | |

100

20/20

20/20

20/20

20/20

20/20

Report Date: Test Code/ID: 03 Dec-21 15:44 (p 1 of 2) WGR1121 047 / 13-8882-2314

| Eohaustorius | 10-d | Survival an | nd Rebu | ırial Sedime | ent Test | | | | Aquatio | : Bioassay 8 | Consultin | ng Labs, Inc |
|---|--------|--|------------------|-------------------------------------|---|-----------------|------------|------------|---|---------------------------------------|-------------|--------------|
| Analysis ID: Analyzed: Edit Date: | 03 D | 150-1788 lec-21 15:13 lec-21 15:12 | 3 ,70 (2) | Endpoint: Analysis: MD5 Hash: | Survival Rate Nonparametric 41B41182B59 | | | S | ETIS Version tatus Level: ditor ID: | : CETISv ⁴ 1 007-979 | | |
| Batch ID: | 19-2 | 970-8862 | | Test Type: | Survival-Rebur | ial | | А | nalyst: Jo | e Freas | | |
| Start Date: | 09 N | lov-21 13:01 | | Protocol: | EPA/600/R-94 | | 4 | | | boratory Sea | water | |
| Ending Date: | 19 N | lov-21 13:01 | | Species: | Echaustorius e | 4 | | | Brine: Not Applicable | | | |
| Test Length: | 10d | Oh | | Taxon: | Malacostraca | | | S | | rthwestern A | quatic Scie | nc Age: |
| Sample ID: | 18-3 | 474-6730 | 11 | Code: | WGR1121.047 | 7 | | P | roject: 02 | 1.APC.01 | | |
| Sample Date: | 03 N | ov-21 14:00 | | Material: | Sediment | | | S | ource: Bio | assay Repor | t | |
| Receipt Date: | 04 N | ov-21 16:00 | | CAS (PC): | | | | S | tation: SE | D-004 | | |
| Sample Age: | 5d 2 | 23h | | Client: | WGR Southwe | est Inc. | | | | | | |
| Data Transfor | m | | Alt H | ур | | | Compari | ison Resu | lt | | | |
| Angular (Corre | cted) | | C>T | | | | 100% pa | ssed survi | val rate endpoi | int | | |
| Wilcoxon Ran | k Sur | n Two-Sam | ple Tes | it | | | | | | | | |
| Control | vs | Conc-% | , CA . C. C. | Test S | Stat Critical | Ties I | F P-Type | P-Valu | e Decision | n(a:5%) | | |
| Negative Contr | ol | 100 | | 27.5 | | 1 8 | | 1.0000 | | ificant Effect | | |
| Test Acceptat | oility | Criteria | ~ | C Limits | | | | | | | | |
| Attribute | | Test Stat | | the marriage after | Overlap | Decision | 6 | | | | | |
| Control Resp | | 1 | 0.9 | >> | Yes | Passes | | | | | | |
| ANOVA Table | | | | | 118 | 1(0710) | | _ | | | - | |
| Source | | Sum Squa | ires | Mean | Square | DF | F Stat | P-Valu | e Decision | (a:5%) | | |
| Between | _ | 0 | 1.60/ | 0 | | 1 | 1.440 | 3.3. | Indetermi | | | |
| Error | | 0 | | 0 | | 8 | | | | | | |
| Total | | 0 | | | | 9 | | | | | | |
| ANOVA Assur | nptio | ns Tests | | | | 100 | 7.75 | | | | | |
| Attribute | | Test | | | | Test Sta | t Critical | P-Valu | e Decision | (a:1%) | | |
| Variance | | Variance R | atio F T | est | | | | | Indetermi | inate | | |
| Distribution | | Shapiro-W | ilk W No | ormality Test | | | | | Indetermi | inate | | |
| Survival Rate | Sumi | mary | | | | | | | | | | |
| Conc-% | | Code | Count | Mean | 95% LCL | 95% UCI | Median | Min | Max | Std Err | CV% | %Effect |
| 0 | - | N | 5 | 1.0000 | 1.0000 | 1.0000 | | 1.0000 | 1.0000 | 0.0000 | 0.00% | 0.00% |
| 100 | | | 5 | 1.0000 | 1.0000 | 1.0000 | | 1.0000 | 1.0000 | 0.0000 | 0.00% | 0.00% |
| Angular (Corre | ected |) Transform | ned Sur | nmary | | | | | | | | |
| Conc-% | | Code | Count | Mean | 95% LCL | 95% UCI | Median | Min | Max | Std Err | CV% | %Effect |
| 0 | | N | 5 | 1.4590 | 1.4580 | 1.4590 | | 1.4590 | 1.4590 | 0.0000 | 0.00% | 0.00% |
| 100 | | <u> </u> | 5 | 1.4590 | 1.4580 | 1.4590 | -1 | 1.4590 | 1.4590 | 0 0000 | 0.00% | 0.00% |
| Survival Rate | Detai | ı | | | | | | | | | | |
| Conc-% | | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
|) | - | N | 1.0000 | | | 1.0000 | 1.0000 | | | | | |
| 100 | | | 1.0000 | | | 1.0000 | 1.0000 | | | | | |
| | | | | | | | | | | | | |
| Angular (Corre | ected |) Transform | ned Det | ail | | | | | | | | |
| | ected |) Transform Code | ned Det Rep 1 | ail Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| Angular (Corre | ected | | | Rep 2 | | Rep 4 1.4590 | Rep 5 | | | | | |

Analyst: A QAI

007-979-628-1

CETIS™ v1.9.7.7

Report Date: Test Code/ID:

03 Dec-21 15:44 (p 2 of 2) WGR1121.047 / 13-8882-2314

Echaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 00-4150-1788

03 Dec-21 15:13

Endpoint: Survival Rate

CETIS Version:

Status Level:

CETISv1.9.7

Analyzed: Edit Date:

03 Dec-21 15:12

Analysis: Nonparametric-Two Sample

MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4 Editor ID:

007-979-628-1

CETIS Measurement Report

Report Date:

03 Dec-21 15:44 (p 1 of 1)

| | TO SUNTENE WAY A SHEET |
|---------------|-------------------------|
| Test Code/ID: | WGR1121.047 / 13-8882-2 |
| | |

| | | | | | | | | lest code/it | , vvoi | 1121.047 | 13-0002-2314 |
|---------------------|-----------------|--------|--------------|----------------|-------------|------|------|--------------|------------------------------|-------------|---------------|
| Eohaustorius | 10-d Survival a | nd Reb | urial Sedime | ent Test | | | | Aqua | tic Bioassay 8 | & Consulti | ng Labs, Inc. |
| Batch ID: | 19-2970-8862 | | Test Type: | Survival-Rebui | rial | | | Analyst: | Joe Freas | | |
| Start Date: | 09 Nov-21 13:01 | | Protocol: | EPA/600/R-94 | /025 (1994) | | | Diluent: | Diluent: Laboratory Seawater | | |
| Ending Date: | 19 Nov-21 13:01 | | Species: | Echaustorius e | estuarius | | | Brine: | Not Applicable | | |
| Test Length: | 10d 0h | | Taxon: | Malacostraca | | | | Source: | Northwestern A | quatic Scie | enc Age: |
| Sample ID: | 18-3474-6730 | | Code: | WGR1121,047 | | | | Project: | 021.APC.01 | | |
| Sample Date: | 03 Nov-21 14:00 |). | Material: | Sediment | | | | Source: | Bioassay Repo | rt | |
| Receipt Date: | 04 Nov-21 16:00 |) | CAS (PC): | | | | | Station: | SED-004 | | |
| Sample Age: | 5d 23h | | Client: | WGR Southwe | est Inc. | | | | | | |
| Dissolved Oxy | /gen-mg/L | | | | | | | | | | - A |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 10.05 | 9.415 | 10.69 | 10 | 10.1 | 0.03536 | 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.15 | 9.515 | 10.79 | 10.1 | 10.2 | 0.03535 | 0.0707 | 0.70% | 0 |
| Overall | | 4 | 10.1 | 9.97 | 10.23 | 10 | 10.2 | 0.04082 | 0.08165 | 0.81% | 0 (0%) |
| pH-Units | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7,9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.65 | 7.015 | 8.285 | 7.6 | 7.7 | 0,03535 | 0.07071 | 0.92% | 0 |
| Overall | | 4 | 7.775 | 7.536 | 8.014 | 7.6 | 7.9 | 0.075 | 0.15 | 1.93% | 0 (0%) |
| Salinity-ppt | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |
| Temperature- | c | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 14.8 | 13.53 | 16.07 | 14.7 | 14.9 | 0.07072 | 0.1414 | 0.96% | 0 |
| 100 | | 2 | 14.75 | 14.11 | 15.39 | 14.7 | 14.8 | 0.03537 | 0.07075 | 0.48% | 0 |
| Overall | | 4 | 14.77 | 14.62 | 14.93 | 147 | 14.9 | 0.04787 | 0.09574 | 0.65% | 0 (0%) |



December 3, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs.Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-005 DATE RECEIVED: 11/4/2021

ABC LAB. NO.: WGR1121.048

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Yours Hery truly,

Scott Johnson

Laboratory Director

| CETIS | Summary | Report |
|-------|---------|--------|
|-------|---------|--------|

Report Date:

03 Dec-21 15:44 (p 1 of 1) WGR1121.048 / 19-4607-4273

Test Code/ID: WGR1121.048 / 19-460

| | | | | | | | 1620 | Code/ID: | WGK | 1121.0407 | 19-4007-427 |
|---------------------|------------------|----------------|----------------|------------------------|------------------|----------------|---------|------------|---------------|-------------|---------------|
| Eohaustorius | 10-d Survival an | d Reburi | al Sedime | ent Test | | | | Aquatic | Bioassay & | Consultin | ng Labs, Inc. |
| Batch ID: | 18-0330-0744 | Te | st Type: | Survival-Reburi | al | | Anal | lyst: Joe | Freas | | |
| Start Date: | 09 Nov-21 13:02 | Pr | otocol: | EPA/600/R-94/ | 025 (1994) | | Dilu | ent: Lat | oratory Seav | vater | |
| Ending Date: | 19 Nov-21 13:02 | Sp | ecies: | Eohaustorius estuarius | | | Brin | e: No | Applicable | | |
| Test Length: | 10d 0h | Ta | ixon: | Malacostraca | | | Sou | rce: No | rthwestern Ad | quatic Scie | nc Age: |
| Sample ID: | 07-2778-1040 | Co | ode: | WGR1121.048 | | Project: 0 | | | .APC.01 | | |
| Sample Date: | 03 Nov-21 11:50 | M | aterial: | Sediment | | | Sou | rce: Bio | assay Repor | t | |
| Receipt Date: | 04 Nov-21 16:00 | C | AS (PC): | | | | Stati | ion: SE | D-005 | | |
| Sample Age: | 6d 1h | CI | ient: | WGR Southwes | | | | | | | |
| Single Compa | rison Summary | | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compari | son Result | | |
| 02-8745-8391 | Survival Rate | | Wilco | on Rank Sum T | wo-Sample | Test | 1.0000 | 100% pas | ssed survival | rate | |
| Test Acceptat | oility | | | | | TAC | Limits | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | |
| 02-8745-8391 | Survival Rate | | Contro | ol Resp | 1 | 0.9 | >> | Yes | Passes C | riteria | |
| Survival Rate | Summary | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | N | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | | 0.00% |
| 100 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | | 0.00% |
| Survival Rate | Detail | | - | | | | MD | 5: 41B4118 | 32B59AAABF | B2FDAA2 | 3D11B52E4 |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | |
| 100 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | |
| Survival Rate | Binomials | | | | | | | | | | |
| A Table & A series | | | | | | | | | | | |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| Carrey Long v Mario | Code N | Rep 1 20/20 | Rep 2 20/20 | Rep 3 20/20 | Rep 4 20/20 | Rep 5 20/20 | | | | | |

Analyst: Analyst: QA:

Conc-%

007-979-628-1

0

100

Code

N

Rep 1

1.4590

1.4590

Rep 2

1.4590

1.4590

Report Date: Test Code/ID: 03 Dec-21 15:44 (p 1 of 2) WGR1121.048 / 19-4607-4273

| | | | | | | | Tes | st Code/ID: | WGR | 1121.048 / | 19-4607-42 |
|--|---|------------------------------|---|---|--|------------|--|---|--|--------------------------------|------------------------------------|
| Eohaustorius | 10-d Survival a | ınd Reburia | l Sedimen | it Test | | | | Aquatic | Bioassay & | & Consultir | g Labs, Inc |
| Analysis ID: | 02-8745-8391 | En | dpoint: | Survival Rate | | | CE | TIS Version | CETISV | 1.9.7 | |
| Analyzed: | 03 Dec-21 15:3 | 5 An | alysis: | Nonparametric- | Two Sam | ole | Sta | tus Level: | 1 | | |
| Edit Date: | 03 Dec-21 15:3 | 4 ME | 5 Hash: 4 | 41B41182B59A | AABFB2F | DAA23D11E | 352E4 Edi | itor ID: | 007-979 | -628-1 | |
| Batch ID: | 18-0330-0744 | Te | st Type: \$ | Survival-Reburial | | | | alyst: Joe | e Freas | | |
| Start Date: | 09 Nov-21 13:0 | 2 Pro | tocol: | EPA/600/R-94/ | 025 (1994 |) | Dil | uent: Lai | poratory Sea | water | |
| Ending Date: | 19 Nov-21 13:0 | 2 Sp | ecies: E | Eohaustorius es | stuarius | | Bri | ne: No | t Applicable | | |
| Test Length: | 10d 0h | Ta | con: N | Malacostraca | Malacostraca | | | urce: No | rthwestern A | quatic Scie | nc Age: |
| Sample ID: | 07-2778-1040 | Co | de: \ | WGR1121.048 | | | Pro | ject: 02 | 1.APC.01 | | |
| Sample Date: | 03 Nov-21 11:5 | | | Sediment | | | So | urce: Bio | assay Repor | rt | |
| Receipt Date: | 04 Nov-21 16:0 | O CA | S (PC): | | | | Sta | tion: SE | D-005 | | |
| Sample Age: | 6d 1h | Cli | ent: \ | WGR Southwes | st Inc. | | | | | | |
| Data Transfor | m | Alt Hyp | | | | Compari | ison Result | | | | |
| Angular (Corre | cted) | C > T | | | | 100% pa | ssed surviva | al rate endpoi | nt | | |
| Wilcoxon Ran | k Sum Two-Sai | nple Test | 7 | | | | | | | | |
| Control | vs Conc-% | | Test St | at Critical | Ties | DF P-Type | P-Value | Decision | (a:5%) | | |
| Negative Contro | ol 100 | | 27.5 | | 1 3 | B Exact | 1.0000 | Non-Sign | ificant Effec | t | |
| Test Acceptab | ility Criteria | TAC | Limits | | | | | | | | |
| Attribute | Test Stat | | Upper | Overlap | Decisio | n | | | | | |
| Control Resp | 1 | 0.9 | >> | Yes | Passes | Criteria | | | | | |
| ANOVA Table | | | | | | | | | | | |
| Source | Sum Squ | ares | Mean S | ouare | DF | F Stat | P-Value | Decision | (a:5%) | | |
| Between | 0 | 100 | 0 | 40.00 | 1 | 1 1001 | 101000 | Indetermi | | | |
| Error | 0 | | 0 | | 8 | | | | | | |
| Total | 0 | | _ | | 9 | | | | | | |
| ANOVA Assun | ontione Teete | | | | | | | | | | |
| MINO AN MOORI | iptions rests | | | | | | | | | | |
| Attribute | Test | | | | Test Sta | t Critical | P-Value | Decision | (a:1%) | | |
| | Test | Ratio F Test | | | Test Sta | t Critical | P-Value | Decision | | | |
| Attribute | Test Variance | Ratio F Test Vilk W Norm | | | Test Sta | t Critical | P-Value | | nate | | |
| Attribute Variance Distribution | Test Variance Shapiro-V | | | | Test Sta | t Critical | P-Value | Indetermi | nate | | |
| Attribute Variance | Test Variance Shapiro-V | | | 95% LCL | | | P-Value Min | Indetermi | nate | CV% | %Effect |
| Attribute Variance Distribution Survival Rate Conc-% | Test Variance Shapiro-V Summary Code | Vilk W Norm | Mean | | 95% UC | | Min | Indetermi Indetermi Max | nate nate Std Err | | 3494.97.77 |
| Attribute Variance Distribution Survival Rate | Test Variance Shapiro-V Summary | Vilk W Norm | ality Test | 95% LCL 1.0000 1.0000 | | | | Indetermi | nate nate | CV% 0.00% 0.00% | %Effect 0.00% 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% | Test Variance Shapiro-V Summary Code | Count 5 | Mean 1.0000 1.0000 | 1.0000 | 95% UC 1.0000 | | Min 1.0000 | Indetermi Indetermi Max 1.0000 | Std Err | 0.00% | 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre | Test Variance Shapiro-V Summary Code N | Count 5 | Mean 1.0000 1.0000 | 1.0000 | 95% UC 1.0000 | L Median | Min 1.0000 | Indetermi Indetermi Max 1.0000 | Std Err | 0.00% | 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre | Test Variance Shapiro-V Summary Code N ected) Transfor | Count 5 5 med Summ | Mean 1.0000 1.0000 | 1.0000 1.0000 | 95% UC 1.0000 1.0000 | L Median | Min 1.0000 1.0000 | Max 1.0000 1.0000 | Std Err 0.0000 0.0000 | 0.00% 0.00% | 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre | Test Variance Shapiro-V Summary Code N ected) Transfor | Count 5 5 med Summ | Mean 1.0000 1.0000 ary Mean | 1.0000 1.0000 95% LCL | 95% UC 1.0000 1.0000 | L Median | Min 1.0000 1.0000 Min | Max 1.0000 1.0000 | Std Err 0.0000 0.0000 Std Err | 0.00% 0.00% | 0.00% 0.00% %Effect |
| Attribute Variance Distribution Survival Rate Conc-% 0 1000 Angular (Corre | Test Variance Shapiro-V Summary Code N ected) Transfor Code N | Count 5 5 med Summ Count 5 | Mean 1.0000 1.0000 ary Mean 1.4590 | 1.0000 1.0000 95% LCL 1_4580 | 95% UC 1.0000 1.0000 95% UC 1.4590 | L Median | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% | 0.00% 0.00% %Effect 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 | Test Variance Shapiro-V Summary Code N ected) Transfor Code N | Count 5 5 med Summ Count 5 | Mean 1.0000 1.0000 ary Mean 1.4590 | 1.0000 1.0000 95% LCL 1_4580 | 95% UC 1.0000 1.0000 95% UC 1.4590 | L Median | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |
| Attribute Variance Distribution Survival Rate Conc-% 0 100 Angular (Corre Conc-% 0 100 Survival Rate | Test Variance Shapiro-V Summary Code N ected) Transfor Code N | Count 5 5 med Summ Count 5 5 | Mean 1.0000 1.0000 ary Mean 1.4590 1.4590 | 1.0000 1.0000 95% LCL 1.4580 1.4580 | 95% UC 1.0000 1.0000 95% UC 1.4590 1.4590 | L Median | Min 1.0000 1.0000 Min 1.4590 | Max 1.0000 1.0000 Max 1.4590 | Std Err 0.0000 0.0000 Std Err 0.0000 | 0.00% 0.00% CV% 0.00% | 0.00% 0.00% %Effect 0.00% |

Analyst: A QA:

CETIS™ v1,9,7.7

Rep 3

1.4590

1.4590

Rep 4

1.4590

1.4590

Rep 5

1.4590

1.4590

Report Date:

03 Dec-21 15:44 (p 2 of 2)

Test Code/ID:

WGR1121.048 / 19-4607-4273

Echaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 02-8745-8391

Endpoint: Survival Rate

CETIS Version: Status Level:

CETISV1.9.7

007-979-628-1

Analyzed: **Edit Date:**

03 Dec-21 15:35 03 Dec-21 15:34

Analysis: Nonparametric-Two Sample

MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4 Editor ID:

CETIS Measurement Report

Report Date:

03 Dec-21 15:44 (p 1 of 1) 4607-4273

| est Code/ID: | WGR1121.048 / 19-4 |
|--------------|--------------------|
| | |

| | | | | | | | | lest Code/ii | U: VVGR | 1121.048 | 19-460/-42/3 |
|---------------|----------------|---------|--------------|----------------|-------------|------|------|--------------|-----------------|-------------|---------------|
| Eohaustorius | 10-d Survival | and Reb | urial Sedime | ent Test | | | | Aqua | atic Bioassay 8 | Consulti | ng Labs, Inc. |
| Batch ID: | 18-0330-0744 | | Test Type: | Survival-Rebui | rial | | | Analyst: | Joe Freas | | |
| Start Date: | 09 Nov-21 13:0 |)2 | Protocol: | EPA/600/R-94 | /025 (1994) | | | Diluent: | Laboratory Sea | water | |
| Ending Date: | 19 Nov-21 13:0 |)2 | Species: | Echaustorius e | estuarius | | | Brine: | Not Applicable | | |
| Test Length: | 10d Oh | | Taxon: | Malacostraca | | | | Source: | Northwestern A | quatic Scie | enc Age: |
| Sample ID: | 07-2778-1040 | | Code: | WGR1121.04 | 8 | | | Project: | 021.APC.01 | - | |
| Sample Date: | 03 Nov-21 11:5 | 50 | Material: | Sediment | | | | Source: | Bioassay Repo | t | |
| Receipt Date: | 04 Nov-21 16:0 | 00 | CAS (PC): | | | | | Station: | SED-005 | | |
| Sample Age: | 6d 1h | | Client: | WGR Southwe | est Inc. | | | | | | |
| Dissolved Ox | ygen-mg/L | | | | | | | | | | |
| Сопс-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 10,05 | 9,415 | 10.69 | 10 | 10.1 | 0.0353 | 6 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.15 | 9.515 | 10.79 | 10.1 | 10.2 | 0.0353 | 5 0.0707 | 0.70% | 0 |
| Overall | | 4 | 10.1 | 9.97 | 10.23 | 10 | 10.2 | 0.0408 | 2 0.08165 | 0.81% | 0 (0%) |
| pH-Units | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.75 | 7.115 | 8.385 | 7.7 | 7.8 | 0.0353 | 6 0.07072 | 0.91% | 0 |
| Overall | | 4 | 7,825 | 7.673 | 7.977 | 7,7 | 7.9 | 0.0478 | 7 0.09574 | 1.22% | 0 (0%) |
| Salinity-ppt | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |
| Temperature- | °C | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Er | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 14.8 | 14.78 | 14.82 | 14.8 | 14.8 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 14.75 | 14.11 | 15.39 | 14.7 | 14.8 | 0.0353 | 7 0.07075 | 0.48% | 0 |
| Overall | | 4 | 14.78 | 14.7 | 14.85 | 14.7 | 14.8 | 0.025 | 0.05 | 0.34% | 0 (0%) |

Analyst: 1 QA:

CETIS™ v1.9.7.7



December 3, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs. Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025. Results were as follows:

CLIENT: WGR Southwest, Inc.

SED-006 SAMPLE I.D.: DATE RECEIVED: 11/4/2021

ABC LAB. NO.: WGR1121.049

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00% TUc = 1.00

EC25 =>100.00 % EC50 =>100.00 %

Yours very truly,

Scott Johnson

Report Date:

03 Dec-21 15:45 (p 1 of 1) /GR1121.049 / 13-7975-4628

| Test Code/ID: | WGR1121.049 / 1 |
|---------------|-----------------|
| | |

| | | | | | | | Test | Code/ID: | WGR | 1121.0497 | 3-79/5-4628 |
|-------------------------|-------------------|-----------|----------------|------------------------|----------------|----------------|---------------------|-----------|---------------|--------------|--------------|
| Eohaustorius | 10-d Survival an | d Reburia | al Sedime | ent Test | | | | Aquatic | Bioassay & | Consultin | g Labs, Inc. |
| Batch ID: | 08-2960-3990 | Te | st Type: | Survival-Reburi | al | | Anal | yst: Joe | Freas | | |
| Start Date: | 09 Nov-21 13:03 | Pr | otocol: | EPA/600/R-94/ | 025 (1994) | | Dilue | ent: Lat | oratory Seav | vater | |
| Ending Date: | 19 Nov-21 13:03 | Sp | ecies: | Eohaustorius estuarius | | | Brin | e: No | Applicable | | |
| Test Length: | 10d 0h | Ta | xon: | Malacostraca | | | Soul | rce: No | rthwestern A | quatic Scien | nc Age: |
| Sample ID: | 15-2924-7125 | Co | de: | WGR1121.049 | | | Project: 021.APC.01 | | | | |
| Sample Date: | 03 Nov-21 11:00 | Ma | aterial: | Sediment | | | Sour | rce: Bio | assay Repor | t | |
| Receipt Date: | 04 Nov-21 16:00 | CA | S (PC): | | | | Stati | on: SE | D-006 | | |
| Sample Age: | 6d 2h | Cli | ient: | WGR Southwes | st Inc. | | | | | | |
| Single Compa | arison Summary | | | | | | | | 222 | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compari | son Result | | |
| 00-3242-7330 | Survival Rate | | Wilcox | on Rank Sum T | wo-Sample | Гest | 0.5000 | 100% pa: | ssed survival | rate | |
| Test Acceptal | oility | | | | | TAC | Limits | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | |
| 00-3242-7330 | Survival Rate | | Contro | ol Resp | 1 | 0.9 | >> | Yes | Passes C | riteria | |
| Survival Rate | Summary | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | N | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | | 0.00% |
| 100 | | 5 | 0.9900 | 0.9622 | 1.0180 | 0.9500 | 1.0000 | 0.0100 | 0.0224 | 2.26% | 1.00% |
| Survival Rate | Detail | | | | | | MD | 5: 15A6E9 | 300CFE050E | 39B6D7C5 | 6B2CBB62 |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| 0 | N | 1,0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | |
| 100 | | 0,9500 | 1.0000 | 1,0000 | 1.0000 | 1.0000 | | | | | |
| | | | | | | | | | | | |
| Survival Rate | Binomials | | | | | | | | | | |
| and the arctime | Binomials Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| Survival Rate Conc-% | Children Co. | Rep 1 | Rep 2 20/20 | Rep 3 20/20 | Rep 4 20/20 | Rep 5 20/20 | | | | | |

Report Date: Test Code/ID: 03 Dec-21 15:45 (p 1 of 2) WGR1121.049 / 13-7975-4628

| | | 77.2 | | | | | | | т | est Cod | e/ID: | WGR | 1121.049 / | 13-7975-46 |
|-----------------|----------|-----------------------|---------|-----------------|----------------|-----------|------|----------|-----------|------------|-----------|---------------|-------------|--------------|
| Eohaustorius | 10-d St | ırvival ar | nd Reb | urial Sedime | ent Test | | | | | A | quatic I | Bioassay & | k Consultir | ig Labs, Inc |
| Analysis ID: | 00-324 | 2-7330 | | Endpoint: | Survival Rate | | | | С | ETIS Ve | rsion: | CETISV | 1.9.7 | |
| Analyzed: | 03 Dec | -21 15:40 |) | Analysis: | Nonparametric | -Two San | nple | | S | tatus Le | vel: | 1 | | |
| Edit Date: | 03 Dec | -21 15:39 |) | MD5 Hash: | 15A6E9300CF | E050D39 | B61 | D7C56B2C | BB62 E | ditor ID | | 007-979 | -628-1 | |
| Batch ID: | 08-296 | 0-3990 | | Test Type: | Survival-Rebu | rial | | | Δ | nalyst: | Joe | Freas | | |
| Start Date: | | -21 13:03 | Y | Protocol: | EPA/600/R-94 | | 4) | | | iluent: | | oratory Sea | water | |
| Ending Date: | | The Street | | Species: | Echaustorius e | | -1/ | | | rine: | | Applicable | Mater | |
| Test Length: | | | | Taxon: | Malacostraca | satudilua | | | | ource: | | | quatic Scie | oc Ana: |
| rest Length, | TOG DI | | | Taxon | Ivialacostraca | | _ | | | ource. | IVOIT | ilwestern A | quanc Scie | no Age. |
| Sample ID: | 15-292 | 4-7125 | | Code: | WGR1121.04 | 9 | | | P | roject: | 021. | APC.01 | | |
| Sample Date: | | 200 500000 | | Material: | Sediment | | | | S | ource: | Bioa | ssay Repor | t | |
| Receipt Date: | 04 Nov | -21 16:00 | | CAS (PC): | | | | | S | tation: | SED |)-006 | | |
| Sample Age: | 6d 2h | | | Client: | WGR Southwe | est Inc. | | | | | | | | |
| Data Transform | m | | Alt H | lyp | | | | Compari | son Resu | ilt | | | | PMSD |
| Angular (Correc | cted) | | C > T | | | | | 100% pas | sed survi | val rate e | endpoin | t | | 2.36% |
| Wilcoxon Ran | k Sum | Two-Sam | ple Te | st | | | | | | | | | | |
| Control | vs | Conc-% | | Test S | Stat Critical | Ties | DF | P-Type | P-Valu | e De | cision(| a:5%) | | |
| Negative Contro | ol | 100 | | 25 | | 1 | 8 | Exact | 0.5000 | No | n-Signif | icant Effec | | |
| Test Acceptab | ility Cr | teria | T | AC Limits | | | | | | | | | | |
| Attribute | T | est Stat | Lowe | er Upper | | Decisi | on | P | | | | | | |
| Control Resp | 1 | | 0,9 | >> | Yes | Passe | s Cr | riteria | | | | | | |
| ANOVA Table | | | | | | | | | | | | | | |
| | | um Squa | rac | Moon | Square | DF | | F Stat | P-Valu | o Do | oloion/ | m: 60/ \ | | |
| Source | | .0012877 | _ | | | | - | r Stat | | | cision(| | | |
| Between | 10 | .0103014 | | 0.0012 | | 1 | | -1 | 0.3466 | INO | n-Signif | icant Effect | | |
| Error Total | | .0103014 | | 0.0012 | 2011 | 9 | _ | - | | | | | | |
| NO. S. O. T. C. | - 1 | 221012001 | _ | | | 5 | _ | | | _ | - | | | |
| ANOVA Assum | 7. 19 | | | | | | | | | | | | | |
| Attribute | _ | est | | | | Test S | tat | Critical | P-Valu | | cision(| a:1%) | | |
| Variance | | and the second second | | f Variance Te | | 7.111 | | 11.26 | 0.0285 | - | ual Varia | | | |
| | | | 6.76 | lity of Variand | e Test | 1 | | 13.75 | 0.3559 | | ual Varia | | | |
| A.Z.A | | ariance R | | | | | | | | | etermin | | | |
| Distribution | | nderson-l | | | | 1.796 | | 3.878 | <1.0E- | | | al Distributi | | |
| | | 'Agostino | | | | 3.335 | | 2.576 | 0.0009 | | | al Distributi | | |
| | | | | nov D Test | | 0.4 | | 0.3025 | 6.1E-0 | | | al Distributi | | |
| | S | hapiro-W | ilk W N | lormality Test | | 0.6247 | 7 | 0.7411 | 0.0001 | No | n-Norm | al Distributi | on | |
| Survival Rate | Summa | гу | | | | | | | | | | | | |
| Conc-% | C | ode | Coun | t Mean | 95% LCL | 95% U | CL | Median | Min | Ma | X | Std Err | CV% | %Effect |
| D | N | | 5 | 1.0000 | | 1.0000 | | | 1.0000 | | 000 | 0.0000 | 0.00% | 0.00% |
| 100 | | | 5 | 0.9900 | 0.9622 | 1.0000 | | | 0.9500 | 1.0 | 000 | 0.0100 | 2.26% | 1.00% |
| Angular (Corre | ected) T | ransform | ned Su | ımmary | | | | | | | | | | |
| Conc-% | C | ode | Coun | t Mean | 95% LCL | 95% U | CL | Median | Min | Ma | x | Std Err | CV% | %Effect |
| 0 | Ņ | 1 | 5 | 1.4590 | 1.4580 | 1.4590 | 4 | | 1.4590 | 1.4 | 590 | 0.0000 | 0.00% | 0.00% |
| 100 | | | 5 | 1.4360 | 1.3730 | 1.4990 | 0 | | 1.3450 | 1.4 | 590 | 0.0227 | 3.53% | 1.56% |
| Survíval Rate I | Detail | | | | | | | | | | | | | |
| Conc-% | C | ode | Rep 1 | Rep 2 | Rep 3 | Rep 4 | | Rep 5 | | | | | | |
| 0 | N | | 1.000 | | | 1.0000 | | 1.0000 | | | | | | |
| 100 | | | 0.950 | | | 1,0000 | | 1.0000 | | | | | | |
| Angular (Corre | ected) T | ransform | ned De | tail | | | | | | | | | | |
| | _ | ode | Rep 1 | Rep 2 | Rep 3 | Rep 4 | | Rep 5 | | | | | | |
| Conc-% | G | uue | LACID I | 11602 | | | | | | | | | | |
| Conc-% | N | | 1.459 | | | 1.4590 | | 1.4590 | | | | | | |

Analyst: A QA:

Report Date: Test Code/ID:

03 Dec-21 15:45 (p 2 of 2) WGR1121.049 / 13-7975-4628

Echaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 00-3242-7330 Analyzed:

Endpoint: Survival Rate

Analysis: Nonparametric-Two Sample

CETIS Version: Status Level:

Edit Date:

03 Dec-21 15:40 03 Dec-21 15:39

MD5 Hash: 15A6E9300CFE050D39B6D7C56B2CBB62 Editor ID:

007-979-628-1

CETISv1.9.7

N

2

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4

7.9

7.9

7.9

Report Date:

03 Dec-21 15:45 (p 1 of 1)

Test Code/ID:

WGR1121.049 / 13-7975-4628

0.00%

0.00%

0.00%

0

0

0 (0%)

| Eohaustorius | 10-d Survival a | nd Reb | urial Sedime | ent Test | | | | Aqı | uatic Bioassay & | & Consulti | ng Labs, Inc. |
|---------------------|-----------------|--------|--------------|----------------|-------------|-----|------|----------|------------------|-------------|---------------|
| Batch ID: | 08-2960-3990 | | Test Type: | Survival-Rebur | rial | | | Analyst: | Joe Freas | | |
| Start Date: | 09 Nov-21 13:0 | 3 | Protocol: | EPA/600/R-94 | /025 (1994) | | | Diluent: | Laboratory Sea | water | |
| Ending Date: | 19 Nov-21 13:0 | 3 | Species: | Eohaustorius e | stuarius | | | Brine: | Not Applicable | | |
| Test Length: | 10d 0h | | Taxon: | Malacostraca | | | | Source: | Northwestern A | quatic Scie | enc Age: |
| Sample ID: | 15-2924-7125 | | Code: | WGR1121.049 | 9 | | | Project: | 021.APC.01 | | |
| Sample Date: | 03 Nov-21 11:0 | 0 | Material: | Sediment | | | | Source: | Bioassay Repo | rt | |
| Receipt Date: | 04 Nov-21 16:0 | 0 | CAS (PC): | | | | | Station: | SED-006 | | |
| Sample Age: | 6d 2h | | Client: | WGR Southwe | est Inc. | | | | | | |
| Dissolved Oxy | ygen-mg/L | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count |
| 0 | N | 2 | 10.05 | 9,415 | 10.69 | 10 | 10.1 | 0.035 | 36 0,07073 | 0.70% | 0 |
| 100 | | 2 | 9.95 | 9.315 | 10.59 | 9.9 | 10 | 0.035 | 36 0.07073 | 0.71% | 0 |
| Overall | | 4 | 10 | 9.87 | 10.13 | 9.9 | 10.1 | 0.040 | 82 0.08165 | 0.82% | 0 (0%) |
| pH-Units | | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | QA Count |

| Salinity-ppt | | | | | | | | | | | |
|--------------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |

7.916

7.916

7.9

7.9

7.9

7.9

7.9

7.9

7.9

0

0

0

0

0

0

7.884

7.884

7.9

| remperature- | C | | | | | | | | | | |
|--------------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
| 0 | N | 2 | 14.75 | 14.11 | 15.39 | 14.7 | 14.8 | 0.03537 | 0.07075 | 0.48% | 0 |
| 100 | | 2 | 14.75 | 14.11 | 15.39 | 14.7 | 14.8 | 0.03537 | 0.07075 | 0.48% | 0 |
| Overall | | 4 | 14.75 | 14.66 | 14.84 | 14.7 | 14.8 | 0.02887 | 0.05774 | 0.39% | 0 (0%) |

Analyst ____ QATC___

007-979-628-1

0

100

Overall

CETIS™ v1.9.7.7



December 3, 2021

Amber Ballrot WGR Southwest, Inc. 1801 E. Sepulveda Blvd. Carson, CA 90749

Dear Mrs.Ballrot:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.* Results were as follows:

CLIENT: WGR Southwest, Inc.

SAMPLE I.D.: SED-007

DATE RECEIVED: 11/4/2021

ABC LAB. NO.: WGR1121.050

ACUTE EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC = 100.00 %

TUc = 1.00

EC25 = >100.00 % EC50 = >100.00 %

Yours very truly,

Scott Johnson

Laboratory Director

CETIS Summary Report

Report Date:

03 Dec-21 15:45 (p 1 of 1)

Test Code/ID:

WGR1121.050 / 19-2953-9426

| | | | | | | | rest | Code/ID: | WGK | 1121.050 / | 19-2953-9426 |
|--|------------------|-----------|-----------|-----------------|------------|--------|---------|-----------|---------------|-------------|---------------|
| Eohaustorius | 10-d Survival an | d Reburi | al Sedime | ent Test | | | | Aquati | c Bioassay & | Consultin | ng Labs, Inc. |
| Batch ID: | 11-9884-2703 | Te | st Type: | Survival-Reburi | al | | Anal | yst: Jo | e Freas | | |
| Start Date: | 09 Nov-21 13:04 | Pr | otocol: | EPA/600/R-94/ | 025 (1994) | | Dilue | ent: La | boratory Seav | vater | |
| Ending Date: | 19 Nov-21 13:04 | S | ecies: | Eohaustorius es | stuarius | | Brin | e: No | ot Applicable | | |
| Test Length: | 10d 0h | Ta | xon: | Malacostraca | | | Sour | rce: No | orthwestern A | quatic Scie | nc Age: |
| Sample ID: | 03-8581-9407 | Co | ode: | WGR1121.050 | | | Proje | ect: 02 | 1.APC.01 | | |
| Sample Date: | 03 Nov-21 09:30 | M | aterial: | Sediment | | | Sour | rce: Bi | oassay Repor | ř. | |
| Receipt Date: | 04 Nov-21 16:00 | C | AS (PC): | | | | Stati | on: SE | ED-007 | | |
| Sample Age: | 6d 4h | CI | ient: | WGR Southwes | st Inc. | | | | | | |
| Single Compa | arison Summary | | | | | | | | | | |
| Analysis ID | Endpoint | | Comp | arison Method | | | P-Value | Compar | ison Result | | s |
| 19-9744-5931 | Survival Rate | | Wilco | on Rank Sum T | wo-Sample | Test | 1,0000 | 100% pa | ssed survival | rate | 1 |
| Test Acceptat | bility | | | | | TAC | Limits | | | | |
| Analysis ID | Endpoint | | Attrib | ute | Test Stat | Lower | Upper | Overlap | Decision | | |
| 19-9744-5931 | Survival Rate | | Contro | ol Resp | 1 | 0.9 | >> | Yes | Passes C | riteria | |
| Survival Rate | Summary | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | N | 5 | 1.0000 | 1,0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | - | 0.00% |
| 100 | | 5 | 1.0000 | 1,0000 | 1,0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | - | 0.00% |
| Survival Rate | Detail | | | | | | MD | 5: 41B411 | 82B59AAABF | B2FDAA2 | 3D11B52E4 |
| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | | | | | |
| | | | 4 0000 | 1 0000 | 1.0000 | 1.0000 | | | | | |
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | | | | |
| 7.5 | N | 1.0000 | 1.0000 | | 1.0000 | 1.0000 | | | | | |
| 100 | | M 15 12 7 | | | | | | | | | |
| 100 Survival Rate | | M 15 12 7 | | 1.0000 | | | | | | | |
| 0 100 Survival Rate Conc-% 0 | Binomials | 1,0000 | 1.0000 | 1.0000 | 1.0000 | 1,0000 | | | | | |

Analyst: A QA

007-979-628-1 CETIS™ v1.9.7.7

Report Date: Test Code/ID: 03 Dec-21 15:45 (p 1 of 2) WGR1121.050 / 19-2953-9426

| Eohaustorius 10-d Survival and Reburial Sediment Test Analysis ID: 19-9744-5931 Endpoint: Survival Rate Analyzed: 03 Dec-21 15:43 Analysis: Nonparametric-Two Sample Edit Date: 03 Dec-21 15:42 MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4 Batch ID: 11-9884-2703 Test Type: Survival-Reburial Start Date: 09 Nov-21 13:04 Protocol: EPA/600/R-94/025 (1994) Ending Date: 19 Nov-21 13:04 Species: Eohaustorius estuarius Test Length: 10d 0h Taxon: Malacostraca Sample ID: 03-8581-9407 Code: WGR1121.050 Sample Date: 04 Nov-21 09:30 Material: Sediment Receipt Date: 04 Nov-21 16:00 CAS (PC); | Statu 4 Edito Anal Dilue Brine Sour Proje Sour Stati | IS Version: us Level: or ID: yst: Joe ent: Lat e: Not ce: No ect: 021 | 7 | 1.9.7 -628-1 water quatic Scie | ng Labs, Ind |
|---|--|---|---|---|----------------|
| Analyzed: 03 Dec-21 15:43 Analysis: Nonparametric-Two Sample Edit Date: 03 Dec-21 15:42 MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4 Batch ID: 11-9884-2703 Test Type: Survival-Reburial Start Date: 09 Nov-21 13:04 Protocol: EPA/600/R-94/025 (1994) Ending Date: 19 Nov-21 13:04 Species: Eohaustorius estuarius Test Length: 10d 0h Taxon: Malacostraca Sample ID: 03-8581-9407 Code: WGR1121.050 Sample Date: 03 Nov-21 09:30 Material: Sediment | Statu 4 Edito Anal Dilue Brine Sour Proje Sour Stati | us Level: or ID: yst: Joe ent: Lat e: Not rce: Nor ect: 021 | 1 007-979 Freas poratory Sea t Applicable rthwestern A 1.APC 01 assay Repo | -628-1 water quatic Scie | nc Age: |
| Start Date: 09 Nov-21 13:04 Protocol: EPA/600/R-94/025 (1994) Ending Date: 19 Nov-21 13:04 Species: Eohaustorius estuarius Test Length: 10d 0h Taxon: Malacostraca Sample ID: 03-8581-9407 Code: WGR1121.050 Sample Date: 03 Nov-21 09:30 Material: Sediment | Dilue Brine Sour Proje Sour Stati | ent: Lab e: Not ce: Nor ect: 021 ce: Bio | ooratory Sea t Applicable rthwestern A I.APC 01 assay Repo | quatic Scie | nc Age: |
| Sample Date: 03 Nov-21 09:30 Material: Sediment | Sour | ce: Bio | assay Repo | | |
| Sample Age: 6d 4h Client: WGR Southwest Inc. | Danult | | | rt | |
| Data Transform Alt Hyp Comparison | Result | | | | |
| Angular (Corrected) C > T 100% passed | | rate endpoir | nt | | |
| | -Value | Decision | | | |
| Negative Control 100 27.5 1 8 Exact 1. | 0000 | Non-Sign | ificant Effec | t | |
| Test Acceptability Criteria TAC Limits Attribute Test Stat Lower Upper Overlap Decision | | | | | |
| Control Resp 1 0.9 >> Yes Passes Criteria | | | | | |
| ANOVA Table | | | | | |
| Source Sum Squares Mean Square DF F Stat P- | Value | Decision | (a:5%) | | |
| Between 0 0 1 | | Indetermi | 1 | | |
| Error 0 0 8 | | | | | |
| Total 0 9 | | | | | |
| ANOVA Assumptions Tests | | | | | |
| Attribute Test Test Stat Critical P- | Value | Decision | (a:1%) | | |
| Variance Variance Ratio F Test Distribution Shapiro-Wilk W Normality Test | | Indetermin | | | |
| Survival Rate Summary | | | | | |
| Conc-% Code Count Mean 95% LCL 95% UCL Median M | in | Max | Std Err | CV% | %Effect |
| | 0000 | 1.0000 | 0.0000 | 0.00% | 0.00% |
| | 0000 | 1.0000 | 0.0000 | 0.00% | 0.00% |
| Angular (Corrected) Transformed Summary | | | | | |
| Conc-% Code Count Mean 95% LCL 95% UCL Median M | in | Max | Std Err | CV% | %Effect |
| | 4590 | 1.4590 | 0.0000 | 0.00% | 0.00% |
| 100 5 1.4590 1.4580 1.4590 1. | 4590 | 1.4590 | 0.0000 | 0.00% | 0.00% |
| Survival Rate Detail | | | | | |
| Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 | | | | | |
| N 1.0000 1.0000 1.0000 1.0000 1.0000 | | | | | |
| 100 1,0000 1,0000 1,0000 1,0000 1,0000 | | | | | |
| Angular (Corrected) Transformed Detail | | | | | |
| Conc-% Code Rep 1 Rep 2 Rep 3 Rep 4 Rep 5 | | | | | |
| 0 N 1,4590 1.4590 1.4590 1.4590 1.4590 | | | | | |
| 100 1.4590 1.4590 1.4590 1.4590 1.4590 | | | | | |

Analyst: A QA:

007-979-628-1

CETIS™ v1.9.7.7

Report Date: Test Code/ID:

03 Dec-21 15:45 (p 2 of 2) WGR1121.050 / 19-2953-9426

Echaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 19-9744-5931 Endpoint: Survival Rate **CETIS Version:** CETISV1.9.7

Analyzed: 03 Dec-21 15:43 Analysis: Nonparametric-Two Sample Status Level:

MD5 Hash: 41B41182B59AAABFB2FDAA23D11B52E4 Editor ID: Edit Date: 03 Dec-21 15:42 007-979-628-1

Analyst QA:

Te

3-9426

| eport Date: | 03 Dec-21 15:45 (p 1 |
|--------------|-----------------------|
| est Code/ID: | WGR1121.050 / 19-2953 |

| | | | | | | | | rest Code/ | D. WGR | 1121.0307 | 13-2933-9420 |
|---------------------|------------------|--------|--------------|----------------|-------------|------|------|------------|-----------------|-------------|---------------|
| Eohaustorius | 10-d Survival at | nd Reb | urial Sedime | ent Test | | | | Aqu | atic Bioassay & | Consulti | ng Labs, Inc. |
| Batch ID: | 11-9884-2703 | | Test Type: | Survival-Rebur | rial | | | Analyst: | Joe Freas | | |
| Start Date: | 09 Nov-21 13:04 | k. | Protocol: | EPA/600/R-94 | /025 (1994) | | | Diluent: | Laboratory Sea | water | |
| Ending Date: | 19 Nov-21 13:04 | | Species: | Eohaustorius e | estuarius | | | Brine: | Not Applicable | | |
| Test Length: | 10d 0h | | Taxon: | Malacostraca | | | | Source: | Northwestern A | quatic Scie | enc Age: |
| Sample ID: | 03-8581-9407 | | Code: | WGR1121.05 | 0 | | | Project: | 021.APC.01 | | |
| Sample Date: | 03 Nov-21 09:30 | h. | Material: | Sediment | | | | Source: | Bioassay Repo | rt | |
| Receipt Date: | 04 Nov-21 16:00 | P | CAS (PC): | | | | | Station: | SED-007 | | |
| Sample Age: | 6d 4h | | Client: | WGR Southwe | est Inc. | | | | | | |
| Dissolved Oxy | ygen-mg/L | | | 104.5 | | | | | 77. | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 10.05 | 9 415 | 10.69 | 10 | 10.1 | 0.0353 | 36 0.07073 | 0.70% | 0 |
| 100 | | 2 | 10.15 | 9.515 | 10.79 | 10.1 | 10.2 | 0.0353 | 35 0.0707 | 0.70% | 0 |
| Overall | | 4 | 10.1 | 9.97 | 10.23 | 10 | 10.2 | 0.0408 | 32 0.08165 | 0.81% | 0 (0%) |
| pH-Units | | | | | 7 . 10. | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7,9 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 7.65 | 7.015 | 8,285 | 7.6 | 7.7 | 0.0353 | 0.07071 | 0.92% | 0 |
| Overall | | 4 | 7.775 | 7,536 | 8,014 | 7.6 | 7.9 | 0.075 | 0.15 | 1.93% | 0 (0%) |
| Salinity-ppt | | | | | - | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 100 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 4 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |
| Temperature- | °C | | | | | | | | | | |
| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | r Std Dev | CV% | QA Count |
| 0 | N | 2 | 14.75 | 14,11 | 15.39 | 14.7 | 14.8 | 0,0353 | 0,07075 | 0.48% | 0 |
| 100 | | 2 | 14.75 | 14.11 | 15.39 | 14.7 | 14.8 | 0.0353 | 0.07075 | 0.48% | 0 |
| Overall | | 4 | 14.75 | 14.66 | 14.84 | 14.7 | 14.8 | 0.0288 | 37 0.05774 | 0.39% | 0 (0%) |

| Facility Name LA Refinery - Carson Operations | | 180 | 1 E. | | oulve | eda I | Blvd. | , Ca | rson CA 90 | 749 | | elsea | Drey | yer | | 1 160 | 02 | . (Consu | .01 | | | Laboratory Name Aquatic Bioassay |
|---|----------------|-------------------|------|-------|-------|-------|-------|-------|--|---------------|--|-------|---------|----------|----------|-------------------|----------------|---|----------------------------|-----------------------|----------------------|---|
| Facility Contact | | Fac | | elep | | | | | | | | | | onsultan | | Fa | | consultan | | | | 29 N Olive Street Ventura 93001 |
| Nate Busch Consultant Company | | - | (31 | 0) 84 | 1-38 | 20 | Con | sulta | nt Address | | (50 | 2) 19 | 9-8511 | 0 ex. 1 | 003 | | (50 | 32) 799- | 0010 | | | (805) 643-5621 |
| WGR Southwest, Inc. | | | | | | | 110 | 21 W | inners Circle | #101 Los | Alamitos | , Cal | ifornia | 90720 |) | | | | | | | 10212 1020 |
| | | | ┕ | M | atri | X | Pr | sv. | | | | | | | | | FIE | LD A | VALY | SES | | Constal Detection |
| | | | | | | | | | | | arius) | | | | | | | ng/L) | (m/S) ec | | | Special Detection Limit/Reporting Please report MDL and RL for all analytes |
| Sample I.D. | Lab Sample No. | No. of Containers | Soil | Water | Air | Other | Yes | No | Sampling Date | Sampling Time | Eohaustorius estuarius (EPA 600/R-94/025) | | | | | pH (SU) [6.5-8.5] | Salinity (PSU) | Dissolved Oxygen (mg/L) [mean>7; single>5] | Specific Conductance (S/m) | Turbidity (NTU) [<50] | Temperature (Deg. F) | Duplicate samples must be analyzed at a frequency of 5% |
| SED-001 | | | | | | | | | | | | 1 | | | | | | | | | | Special QA/QC |
| SED-002 | | | | | | | | | | | | | | | | | | | | | | |
| SED-003 | | 1 | X | | | | Х | | 11/3/2021 | 15:20 | Х | | | | | 7.7 | 17.8 | 1.61 | 2.83 | 37.5 | 72.3 | Sub'd COC Attch'd: |
| SED-004 | | 1 | X | | | 0 | X | ΙŪ | 11/3/2021 | 14:00 | X | | | | | 7.37 | 10.9 | 12.59 | 1.82 | 42.4 | 75.6 | |
| SED-005 | | 1 | x | | | | x | | 11/3/2021 | 11:50 | X | | | | 1 | 7.77 | 18.4 | 10.49 | 2.92 | 25.3 | 70.2 | |
| SED-006 | | 1 | x | | | | х | | 11/3/2021 | 11:00 | х | | | | | 8.09 | 22.8 | 12.21 | 3.53 | 17 | 69.6 | |
| SED-007 | | 1 | x | | | | х | 7 | 11/3/2021 | 9:30 | X | - | | | | 8.09 | 22.4 | 8.63 | 3.57 | 19.1 | 67 | 1 8 |
| | | | | | | | | T | | | | | 1 | | | | | | | | | 9.5 |
| Sample bottles required for e | ach sample poi | nt: | | | | | | | | | | | | | | u ja ji je | | | | | 1000 | × ne |
| (1) x 1-gallon plastic bag | | | | | | | | | | | | 1 | | 1 | \vdash | | | | | | | A R |
| .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | - | - | | | | - | | | | Н | + | Н | + | | ++ | ++- | \vdash | + | + | M Son |
| | | + | - | - | - | | | - | | | + | Н | + | H | + | ++ | ++ | \vdash | + | \vdash | ++ | ath: |
| | | - | - | | | | | | | | | Н | + | H | + | | ++ | + | H | + | + | wgr vgr |
| | | + | - | + | | | - | | | | H | Н | + | H | ++ | ++ | H | + | + | + | + | \$ 9 9 9 |
| Sample Received Intact: Yes No | | | + | _ | _ | _ | _ | | Temperature | received: | | lce | _ | Н- | No id | | | | | | 1 | ail F |
| Relinquished by SAMPLER (Print & Sign Nam David Montclerago | | | | Dat | 1 | 21 | Tim | е | And Street, St | Received | | t & S | = 1 | - | | 11/4 | 121 | 16 | 00 | | | R E M A R K Email Results to: nbusch@marathonpetroleum.com cdreyer@wgr-sw.com aballrot@wgr-sw.com |
| Relinquished by (Print & Sign Name) | New York | _ | _ | Dat | | 1-1 | Tim | A | | Received | by LAF | ORA | TORY | Print | & Sign | Name) | _ | _ | | _ | | Lab Work No. |



96 Hour Eohaustorius estuarius Survival Bioassay - Standard Toxicant

DATE: 11/11/2021

STANDARD TOXICANT: Ammonium Chloride

ENDPOINT: SURVIVAL

UNIONIZED AMMONIA

NOEC = 0.4520 mg/L

EC25 = 0.7175 mg/LEC50 = 1.4800 mg/L

Yours very truly,

Scott Johnson

Laboratory Director

CETIS Summary Report

03 Dec-21 15:43 (p 1 of 1)

| Test Code/ID: | EOH111121 / 12-0123-27 |
|----------------|-------------------------|
| ricport butter | 00 Dec-21 10.40 (p 1 b) |

| Reference To | xicant 96-h Acut | e Survival Test | | | | | | Aqu | atic | Bioassay & | Consulting | Labs, Inc. |
|--|---|-----------------|--|----------|--------|---|--|---|----------------------|---|--|------------|
| Batch ID: Start Date: Ending Date: Test Length: | 07-4821-6659 11 Nov-21 12:00 15 Nov-21 12:00 96h | | EPA/600/R-94 Ephaustorius e Malacostraca | | | | Dilu Brir | lyst: ent: ne: erce: | Lab Not | Freas oratory Seaw Applicable thwestern Ac | | : Age: |
| and the second of the second o | 13-9303-1400 11 Nov-21 12:00 11 Nov-21 12:00 | | EOH111121 Ammonia (Unio | onized) | | | Sou | ect: rce: ion: | Ref | F TOX erence Toxic F TOX | ant | |
| Multiple Comp | parison Summar | у | | | | | | | | | | |
| Analysis ID | Endpoint | Com | parison Method | 1 | | 1 | NOEL | LOE | L | TOEL | PMSD | S |
| 01-7753-4190 | Survival Rate | Stee | Many-One Rank | Sum Test | | | 0.452 | 0.806 | 5 | 0.6036 | 7.82% | |
| Point Estimate | Summary | | | | | | | | | | | |
| Analysis ID | Endpoint | Poin | t Estimate Meth | od | | 1 | Level | mg/L | | 95% LCL | 95% UCL | |
| 16-4974-2450 | Survival Rate | Line | ar Interpolation (IC | CPIN) | | | EC10 EC15 EC20 EC25 EC40 EC50 | 0.540 0.599 0.658 0.717 1.095 1.48 |)5 95 85 75 | 0.4504 0.5051 0.5613 0.5926 0.5699 1.194 | 0.6255 0.7175 0.8237 0.9657 1.403 1.787 | |
| and the second | 200 | | | | | | 1.000 | 1.40 | - | 1.104 | COR | |
| Survival Rate | A | all | | | | | | | | | | |
| Conc-mg/L | Code | Count Mea | 2 8 22 22 2 | | Min | _ | Max | Std E | | Std Dev | CV% | %Effect |
| 0.227 | N | 4 1.00 | | 1.0000 | 1,0000 | | 1.0000 | 0.000 | | 0.0000 | **** | 0.00% |
| 0.452 | | 4 0.97 | | 1.0550 | 0.9000 | | 1.0000 | 0.000 | | 0.0500 | 5.13% | 2.50% |
| 0.806 | | 4 0.67 | | 0.8752 | 0.5000 | | 0.8000 | 0.062 | | 0.1258 | 18.64% | 32.50% |
| 1.672 | | 4 0.45 | | 0.5419 | 0.4000 | | 0.5000 | 0.028 | | 0.0577 | 12.83% | 55.00% |
| 3.524 | | 4 0.000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.000 | 00 | 0.0000 | _ | 100.00% |
| Survival Rate | Detail | | | | | | MD | 5: 7798 | 3244 | 16C478260E | D4B668521 | 7B985C |
| Conc-mg/L | Code | Rep 1 Rep | 2 Rep 3 | Rep 4 | | | | | | | | |
| 0 | N | 1.0000 1.000 | | 1.0000 | | | | | | | | |
| 0.227 | | 1,0000 1.000 | | 1.0000 | | | | | | | | |
| 0.452 | | 1 0000 0.900 | | 1.0000 | | | | | | | | |
| 0.806 | | 0.8000 0.700 | 0.7000 | 0.5000 | | | | | | | | |
| 1.672 | | 0.5000 0.500 | 0.4000 | 0.4000 | | | | | | | | |
| 3.524 | | 0.0000 0.000 | 0.0000 | 0.0000 | | | | | | | | |
| Survival Rate | Binomials | | | | | | | | | | | |
| Conc-mg/L | Code | Rep 1 Rep | 2 Rep 3 | Rep 4 | | | | | | | | |
| 0 | N | 10/10 10/10 | | 10/10 | | | | | | | | |
| 0.227 | | 10/10 10/10 | 10/10 | 10/10 | | | | | | | | |
| 0.452 | | 10/10 9/10 | 10/10 | 10/10 | | | | | | | | |
| 0.806 | | 8/10 7/10 | 7/10 | 5/10 | | | | | | | | |
| 1.672 | | 5/10 5/10 | 4/10 | 4/10 | | | | | | | | |
| 3.524 | | 0/10 0/10 | 0/10 | 0/10 | | | | | | | | |

007-979-628-1

CETIS™ v1.9.7.7

Report Date:

03 Dec-21 15:43 (p 1 of 2)

| | nytical rep | | | | | | | Test | Code/ID: | EC | H111121/1 | 2-0123-278 |
|-----------------|-----------------|--------------|-----------------------|---------------|-----------|------|------------------|-------------------|---------------|----------------------------------|--------------|---|
| Reference To | xicant 96-h Acu | te Surviva | al Test | | | | | | Aquatic | Bioassay & | & Consulting | g Labs, Inc. |
| Analysis ID: | 01-7753-4190 | E | ndpoint: | Survival Rate | 1. | | | CET | IS Version: | CETISV | 1.9.7 | |
| Analyzed: | 03 Dec-21 14:5 | | nalysis: | Nonparametric | | | | | us Level: | 1 | | |
| Edit Date: | 03 Dec-21 14:5 | 1 N | ID5 Hash: | 779B24416C4 | 78260DI | D4B6 | 685217B98 | 35C Edit | or ID: | 007-979 | -628-1 | |
| Batch ID: | 07-4821-6659 | T | est Type: | Survival | | | | Ana | lyst: Joe | Freas | | |
| Start Date: | 11 Nov-21 12:00 | 0 P | rotocol: | EPA/600/R-94 | 1/025 (19 | 94) | | Dilu | ent: Lab | oratory Sea | water | |
| Ending Date: | 15 Nov-21 12:00 | 0 S | pecies: | Echaustorius | estuarius | | | Brin | e: Not | Applicable | | |
| Test Length: | 96h | Ţ | axon: | Malacostraca | | | | Sou | rce: Nor | thwestern A | quatic Scien | c Age: |
| Sample ID: | 13-9303-1400 | C | ode: | EOH111121 | | | | Proj | ect: REF | TOX | | |
| Sample Date: | 11 Nov-21 12:00 | 0 M | laterial: | Ammonia (Uni | onized) | | | Sou | rce: Ref | erence Toxi | cant | |
| Receipt Date: | 11 Nov-21 12:00 | o c | AS (PC): | | | | | Stat | ion: REF | TOX | | |
| Sample Age: | | C | lient: | Internal Lab | | | | | | | | |
| Data Transfor | m | Alt Hyp | 0 | | | | NOEL | LOEL | TOEL | TU | MSDu | PMSD |
| Angular (Corre | cted) | C > T | | | | | 0.452 | 0.806 | 0.6036 | | 0.07815 | 7.82% |
| Steel Many-O | ne Rank Sum To | est | | | | | | | | | | |
| Control | vs Conc-m | g/L | Test S | Stat Critical | Ties | DF | P-Type | P-Value | Decision(| (a:5%) | | |
| Negative Contro | ol 0.227 | | 18 | 10 | 1 | 6 | CDF | 0.8000 | Non-Signi | ficant Effec | t | |
| | 0.452 | | 16 | 10 | 1 | 6 | CDF | 0.5661 | Non-Signi | ficant Effect | t | |
| | 0.806* | | 10 | 10 | 0 | 6 | CDF | 0.0350 | Significant | Effect | | |
| | 1.672* | | 10 | 10 | 0 | 6 | CDF | 0.0350 | Significant | t Effect | | |
| ANOVA Table | | | | | | | | | | | | |
| Source | Sum Squ | ares | Mean | Square | DF | | F Stat | P-Value | Decision(| a:5%) | | |
| Between | 1.54745 | | 0,3868 | 362 | 4 | | 69.22 | <1.0E-05 | Significant | Effect | | |
| Error | 0.083832 | | 0.0058 | 5888 | 15 | | | | | | | |
| Total | 1.63128 | | | | 19 | | -7 | | | | | |
| ANOVA Assur | nptions Tests | | | | | | | | | | | |
| Attribute | Test | | | | Test S | Stat | Critical | P-Value | Decision(| a:1%) | | |
| Variance | Bartlett Ed | quality of V | ariance Te | st | | | | | Indetermin | nate | | |
| | Levene Ed | quality of V | ariance Te | st | 3.828 | | 4.893 | 0.0245 | Equal Vari | iances | | |
| | Mod Leve | ne Equality | of Variand | ce Test | 1.439 | | 4.893 | 0.2695 | Equal Vari | iances | | |
| Distribution | Anderson | -Darling A | 2 Test | | 1.472 | | 3.878 | 0 0003 | Non-Norm | al Distributi | on | |
| | D'Agostin | o Kurtosis | Test | | 2,167 | | 2.576 | 0.0302 | Normal Di | stribution | | |
| | | o Skewnes | | S. A. A. | 1.961 | | 2.576 | 0.0498 | Normal Di | | | |
| | | | K2 Omnib | us Test | 8,544 | | 9.21 | 0.0140 | Normal Di | | | |
| | L'.A. 33 | ov-Smirno | D Test mality Test | | 0.3 | 4 | 0.2235 | 5.0E-05 0.0083 | | ial Distributi ial Distributi | | |
| an an an and | | VIIK VV IVOI | mailty resi | | 0.001 | 4 | 0.000 | 0.0063 | Non-Non | al Distributi | on | |
| Survival Rate | and the | | - 44-15 | | | | | | | 4,044 | | New . |
| Conc-mg/L | Code N | Count 4 | 1.0000 | | 95% L | _ | Median 1.0000 | Min 1,0000 | Max 1.0000 | 0.0000 | CV% 0.00% | %Effect 0.00% |
| | 14 | 4 | | | 1,000 | | 1.0000 | 1,0000 | 1.0000 | 0.0000 | 0.00% | 0.00% |
| 0.227 0.452 | | 4 | 0.9750 | | 1.000 | | 1.0000 | 0.9000 | 1.0000 | 0.0250 | 5.13% | 2.50% |
| 0,806 | | 4 | 0.6750 | | 0.875 | | 0.7000 | 0.5000 | 0.8000 | 0.0230 | 18.64% | 32.50% |
| 1.672 | | 4 | 0.4500 | 1,450,4,30,4 | 0.541 | | 0.4500 | 0.4000 | 0.5000 | 0.0029 | 12.83% | 55.00% |
| 3.524 | | 4 | 0.0000 | | 0.000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 100.00% |
| | ected) Transfor | | | ANGEORGE. | 567-3 | | 3453397 | JA: (3E) | 0.000 | 201-07.300 | | 100000000000000000000000000000000000000 |
| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% L | ICI | Median | Min | Max | Std Err | CV% | %Effect |
| Concarig/L | Code | Count | Weall | 33% LCL | . 35% L | | Median | TALLET | WAX | JIU EII | C V /0 | /OLITECT |

Analyst: QA.

0.00%

0.00%

5.94%

13.82%

7.91%

0.00%

0.00%

0.00%

2.89%

31.39%

47.94%

88.76%

0.0000

0.0000

0.0407

0.0669

0.0291

0.0000

007-979-628-1 CETIS™ v1.9.7.7

1.4120

1.4120

1.3710

0.9687

0.7351

0.1588

1.4120

1,4120

1.2420

0.7557

0.6426

0.1588

1.4120

1.4120

1.5010

1.1820

0.8276

0.1588

1.4120

1.4120

1.4120

0.9912

0.7351

0.1588

1,4120

1.4120

1,2490

0.7854

0.6847

0.1588

1.4120

1.4120

1.4120

1.1070

0.7854

0.1588

4

4

4

4

4

4

0

0,227

0.452

0.806

1.672

3.524

N

Report Date: Test Code/ID: 03 Dec-21 15:43 (p 2 of 2) EOH111121 / 12-0123-2783

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 01-7753-4190

03 Dec-21 14:53 03 Dec-21 14:51

Reference Toxicant 96-h Acute Survival Test

Endpoint: Survival Rate

Analysis: Nonparametric-Control vs Treatments
MD5 Hash: 779B24416C478260DD4B6685217B985C

CETIS Version: Status Level:

Status Level: Editor ID:

007-979-628-1

CETISV1.9.7

Survival Rate Detail

Analyzed:

Edit Date:

| Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | | |
|------|--------|--|---|--|---|---|
| N | 1.0000 | 1.0000 | 1,0000 | 1,0000 | | |
| | 1.0000 | 1.0000 | 1.0000 | 1.0000 | | |
| | 1.0000 | 0.9000 | 1.0000 | 1.0000 | | |
| | 0.8000 | 0.7000 | 0.7000 | 0.5000 | | |
| | 0.5000 | 0.5000 | 0.4000 | 0.4000 | | |
| | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | |
| | | N 1.0000 1.0000 1.0000 0.8000 0.5000 | N 1.0000 1.0000 1.0000 1.0000 1.0000 0.9000 0.8000 0.7000 0.5000 0.5000 | N 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9000 1.0000 0.8000 0.7000 0.7000 0.5000 0.5000 0.4000 | N 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9000 1.0000 1.0000 0.8000 0.7000 0.7000 0.5000 0.5000 0.5000 0.4000 0.4000 | N 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9000 1.0000 1.0000 0.8000 0.7000 0.7000 0.5000 0.5000 0.5000 0.4000 0.4000 |

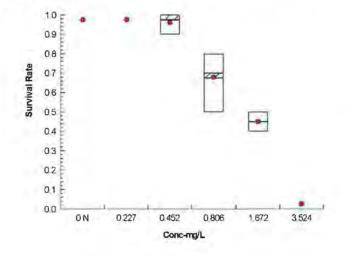
Angular (Corrected) Transformed Detail

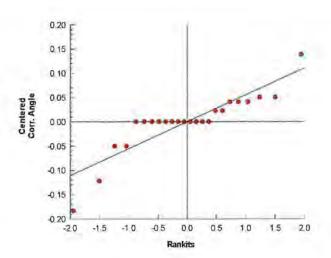
| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | |
|-----------|------|--------|--------|--------|--------|--|
| 0 | N | 1.4120 | 1.4120 | 1.4120 | 1.4120 | |
| 0.227 | | 1.4120 | 1.4120 | 1.4120 | 1.4120 | |
| 0.452 | | 1.4120 | 1.2490 | 1.4120 | 1.4120 | |
| 0.806 | | 1.1070 | 0.9912 | 0.9912 | 0.7854 | |
| 1.672 | | 0.7854 | 0.7854 | 0.6847 | 0.6847 | |
| 3.524 | | 0.1588 | 0.1588 | 0.1588 | 0.1588 | |
| | | | | | | |

Survival Rate Binomials

| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | |
|-----------|------|-------|-------|-------|-------|---|
| 0 | N | 10/10 | 10/10 | 10/10 | 10/10 | _ |
| 0.227 | | 10/10 | 10/10 | 10/10 | 10/10 | |
| 0.452 | | 10/10 | 9/10 | 10/10 | 10/10 | |
| 0.806 | | 8/10 | 7/10 | 7/10 | 5/10 | |
| 1.672 | | 5/10 | 5/10 | 4/10 | 4/10 | |
| 3.524 | | 0/10 | 0/10 | 0/10 | 0/10 | |
| | | | | | | |

Graphics





Analyst: A QA:

CETIS™ v1.9.7.7

Report Date: Test Code/ID: 03 Dec-21 15:43 (p 1 of 2) EOH111121 / 12-0123-2783

| Reference Toxicant 96-h Acute Survival Test | Aquatic Bioassay & Consulting Labs, In- |
|---|---|
| | |

Analysis ID: 16-4974-2450 Endpoint: Survival Rate CETIS Version: CETIS V1.9.7

Analyzed: 03 Dec-21 14:53 Analysis: Linear Interpolation (ICPIN) Status Level: 1

Edit Date: 03 Dec-21 14:51 MD5 Hash: 779B24416C478260DD4B6685217B985C Editor ID: 007-979-628-1

Batch ID: 07-4821-6659 Test Type: Survival Analyst: Joe Freas

Start Date: 11 Nov-21 12:00 Protocol: EPA/600/R-94/025 (1994) Diluent: Laboratory Seawater

Ending Date: 15 Nov 21 12:00 Species: Endaugterius estudius

Ending Date: 15 Nov-21 12:00 Species: Eohaustorius estuarius Brine: Not Applicable

Test Length: 96h Taxon: Malacostraca Source: Northwestern Aquatic Scienc Age:

Sample ID: 13-9303-1400 Code: EOH111121 Project: REF TOX

Sample Date: 11 Nov-21 12:00 Material: Ammonia (Unionized) Source: Reference Toxicant

Receipt Date: 11 Nov-21 12:00 CAS (PC): Station: REF TOX

Sample Age: --- Client: Internal Lab

Linear Interpolation Options

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method | |
|-------------|-------------|------|-----------|------------|-------------------------|--|
| Linear | Linear | 0 | 280 | Yes | Two-Point Interpolation | |

Point Estimates

| of the references | E 541 (16.2 - 5.2) | | | |
|-------------------|--------------------|---------|---------|--|
| Level | mg/L | 95% LCL | 95% UCL | |
| EC10 | 0.5405 | 0.4504 | 0.6255 | |
| EC15 | 0.5995 | 0.5051 | 0.7175 | |
| EC20 | 0.6585 | 0.5613 | 0.8237 | |
| EC25 | 0.7175 | 0.5926 | 0.9657 | |
| EC40 | 1.095 | 0.5699 | 1.403 | |
| EC50 | 1.48 | 1.194 | 1.787 | |
| LOGO | 1.40 | 1.154 | 1.707 | |

| Survival Rate Summary | | | Calculated Variate(A/B) | | | | | | | | Isotonic Variate | |
|-----------------------|------|-------|-------------------------|--------|--------|--------|--------|---------|-------|--------|------------------|--|
| Conc-mg/L | Code | Count | Mean | Median | Min | Max | CV% | %Effect | A/B | Mean | %Effect | |
| 0 | N | 4 | 1.0000 | 1.0000 | 1.0000 | 1,0000 | 0.00% | 0.00% | 40/40 | 1,0000 | 0.00% | |
| 0.227 | | 4 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.00% | 0.00% | 40/40 | 1.0000 | 0.00% | |
| 0.452 | | 4 | 0.9750 | 1.0000 | 0.9000 | 1.0000 | 5.13% | 2.50% | 39/40 | 0.9750 | 2.50% | |
| 0.806 | | 4 | 0.6750 | 0.7000 | 0.5000 | 0.8000 | 18.64% | 32.50% | 27/40 | 0.6750 | 32.50% | |
| 1.672 | | 4 | 0.4500 | 0.4500 | 0.4000 | 0.5000 | 12.83% | 55.00% | 18/40 | 0.4500 | 55.00% | |
| 3.524 | | 4 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 100.00% | 0/40 | 0.0000 | 100.00% | |

Survival Rate Detail

| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 |
|-----------|------|--------|--------|--------|--------|
| 0 | N | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.227 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.452 | | 1.0000 | 0.9000 | 1.0000 | 1.0000 |
| 0.806 | | 0.8000 | 0.7000 | 0.7000 | 0.5000 |
| 1.672 | | 0.5000 | 0.5000 | 0.4000 | 0.4000 |
| 3.524 | | 0.0000 | 0.0000 | 0.0000 | 0,0000 |

Survival Rate Binomials

| Conc-mg/L | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | |
|-----------|------|-------|-------|-------|-------|--|
| 0 | N | 10/10 | 10/10 | 10/10 | 10/10 | |
| 0.227 | | 10/10 | 10/10 | 10/10 | 10/10 | |
| 0.452 | | 10/10 | 9/10 | 10/10 | 10/10 | |
| 0.806 | | 8/10 | 7/10 | 7/10 | 5/10 | |
| 1.672 | | 5/10 | 5/10 | 4/10 | 4/10 | |
| 3.524 | | 0/10 | 0/10 | 0/10 | 0/10 | |

Analyst: A QA: Z

007-979-628-1 CETIS™ v1.9.7.7

Report Date:

03 Dec-21 15:43 (p 2 of 2)

Test Code/ID:

EOH111121 / 12-0123-2783

Aquatic Bioassay & Consulting Labs, Inc.

| Reference | loxicant | 96-n Acute | Survival | lest |
|-----------|----------|------------|----------|------|
| | | | | |

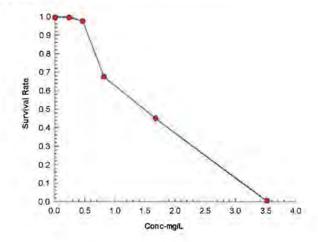
Analysis ID: 16-4974-2450 Endpoint: Survival Rate CETIS Version: CETISv1.9.7

Analyzed: 03 Dec-21 14:53 Analysis: Linear Interpolation (ICPIN)

Edit Date: 03 Dec-21 14:51 MD5 Hash: 779B24416C478260DD4B6685217B985C

Status Level: 1 Editor ID: 007-979-628-1

Graphics



CETIS Measurement Report

Reference Toxicant 96-h Acute Survival Test

Report Date: Test Code/ID:

03 Dec-21 15:43 (p 1 of 1) EOH111121 / 12-0123-2783

| FQ | THE PROPERTY. | - | 2000 | 0 | 1- |
|---------|---------------|---|------------|-------|-----|
| Aquatic | Bioassay | & | Consulting | Labs, | Inc |
| | | | | | |

| Batch ID: | 07-4821-6659 | Test Type: | Survival | Analyst: | Joe Freas |
|---------------------|-----------------|------------|-------------------------|----------|----------------------------------|
| Start Date: | 11 Nov-21 12:00 | Protocol: | EPA/600/R-94/025 (1994) | Diluent: | Laboratory Seawater |
| Ending Date: | 15 Nov-21 12:00 | Species: | Eohaustorius estuarius | Brine: | Not Applicable |
| Test Length: | 96h | Taxon: | Malacostraca | Source: | Northwestern Aquatic Scienc Age: |
| Sample ID: | 13-9303-1400 | Code: | EOH111121 | Project: | REFTOX |
| | | | | | |

Sample Date: 11 Nov-21 12:00 Material: Ammonia (Unionized) Source: Reference Toxicant

Receipt Date: 11 Nov-21 12:00 CAS (PC): Station: **REF TOX**

Sample Age: -Client: Internal Lab

Dissolved Oxygen-mg/L

| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|-----------|------|-------|-------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 6.55 | 5.915 | 7.185 | 6.5 | 6.6 | 0.03535 | 0.0707 | 1.08% | 0 |
| 0.227 | | 2 | 6.7 | 4.159 | 9.241 | 6.5 | 6.9 | 0.1414 | 0.2828 | 4.22% | 0 |
| 0.452 | | 2 | 7 | 7 | 7 | 7 | 7 | 0 | 0 | 0.00% | 0 |
| 0.806 | | 2 | 6.55 | 5.915 | 7.185 | 6.5 | 6.6 | 0.03535 | 0.0707 | 1.08% | 0 |
| 1.672 | | 2 | 6.5 | 2.688 | 10.31 | 6.2 | 6.8 | 0.2121 | 0.4243 | 6,53% | 0 |
| 3.524 | | 2 | 6.35 | 4.444 | 8.256 | 6.2 | 6.5 | 0.1061 | 0.2121 | 3.34% | 0 |
| Overall | | 12 | 6.608 | 6,436 | 6.781 | 6.2 | 7 | 0.07829 | 0.2712 | 4.10% | 0 (0%) |

pH-Units

| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|-----------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 0.227 | | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 0.452 | | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 0.806 | | 2 | 7.9 | 7.884 | 7.916 | 7,9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 1.672 | | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| 3.524 | | 2 | 7.9 | 7.884 | 7.916 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 |
| Overall | | 12 | 7.9 | 7.9 | 7.9 | 7.9 | 7.9 | 0 | 0 | 0.00% | 0 (0%) |

Salinity-ppt

| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|-----------|------|-------|------|---------|---------|-----|-----|---------|---------|-------|----------|
| 0 | N | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 0.227 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 0.452 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 0.806 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 1.672 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| 3.524 | | 2 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 |
| Overall | | 12 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0.00% | 0 (0%) |

Temperature-°C

| Conc-mg/L | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | QA Count |
|-----------|------|-------|-------|---------|---------|------|------|---------|---------|-------|----------|
| 0 | N | 2 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 0.00% | 0 |
| 0.227 | | 2 | 14.95 | 14.31 | 15,59 | 14.9 | 15 | 0.03538 | 0.07075 | 0.47% | 0 |
| 0.452 | | 2 | 14.9 | 14.87 | 14.93 | 14.9 | 14.9 | 0 | 0 | 0.00% | 0 |
| 0.806 | | 2 | 14.9 | 14.87 | 14.93 | 14.9 | 14.9 | 0 | 0 | 0.00% | 0 |
| 1.672 | | 2 | 14.9 | 14.87 | 14.93 | 14.9 | 14.9 | 0 | 0 | 0.00% | 0 |
| 3.524 | | 2 | 14.9 | 14.87 | 14.93 | 14.9 | 14.9 | 0 | 0 | 0.00% | 0 |
| Overall | | 12 | 14.92 | 14.9 | 14.95 | 14.9 | 15 | 0.01306 | 0.04523 | 0.30% | 0 (0%) |

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ATTACHMENT 4

SEDIMENT BIOASSAY DATA VALIDATION REPORT

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Sediment Bioassay Data Validation Report

Table of Contents

| 1.0 | Chronic Toxicity Test Overview | 1 |
|-----|--|---|
| | | |
| 2.0 | Data Review | 1 |
| 3.0 | Eohaustorius estuarius Chronic Toxicity Test | 2 |
| 3.1 | Sample Collection, Sample Preservation, Chain of Custody | 2 |
| 3.2 | Test Setup. | |
| 3.3 | Test Implementation | 2 |
| 3 | 3.3.1 Test Acceptability Criteria | 3 |
| 3.4 | Reporting | 3 |
| | Overall Data Usability | |

Attachment:

Attachment I – Dominguez Channel Estuary Sediment Bioassay Data Validation Form

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Sediment Bioassay Data Validation Report Page 1 of 4

1.0 Chronic Toxicity Test Overview

On behalf of Tesoro Refining & Marketing Company LLC, Los Angeles Refinery – Carson Operations (herein facility), WGR Southwest, Inc. (WGR) collected sediment samples at monitoring locations SED-003, SED-004, SED-005, SED-006, and SED-007 as required in National Pollutant Discharge Elimination System (NPDES) No. CA0000680. Sediment samples for chronic toxicity testing were collected on November 3, 2021 and submitted to Aquatic Bioassay & Consulting Laboratories Inc. on November 4, 2021 for analysis. Aquatic Bioassay & Consulting Laboratories has Environmental Laboratory Accreditation Program (ELAP) Certification number 1907.

In accordance with NPDES No. CA0000680 Attachment E, Section V.A.4, chronic toxicity samples are required to undergo a species sensitivity screening by concurrently conducting three toxicity tests using the fish, invertebrate and alga species listed in the permit order. Based on the results of the species sensitivity screening, the single species exhibiting the highest percent effect is required to be used for routine monitoring during the permit cycle. The species listed in the permit order, however, are more commonly used to evaluate effluent chronic toxicity rather than sediment toxicity. Therefore, with laboratory staff and Regional Water Quality Control Board guidance, a species sensitivity screening was conducted for chronic toxicity samples on September 25, 2019 using two different sediment species: Eohaustorius estuarius and Mytilus galloprovincialis. As explained in the September 25th sediment report, both sediment species exhibited no observed effect concentration to the sediment samples collected from Stations SED-005, SED-006 and SED-007. Given that both species exhibited no toxicity effect, the facility opted to utilize Eohaustorius estuarius in this chronic toxicity testing. Therefore, sediment chronic toxicity samples collected on November 3, 2021 were tested using Echaustorius estuarius in accordance with the guidelines prescribed in Methods for Assessing the Toxicity of Sediment Associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025.

2.0 Data Review

A level 2 data verification protocol was used for bioassay validation. The level 2 data review compares bioassay testing holding conditions, test setup, test implementation, and test termination in accordance with bioassay protocols. As part of the level 2 data verification protocol the laboratory was expected to follow all internal quality control procedures as directed in the applicable analytical method. Outcome of the data review for each of the chronic toxicity tests performed is documented in the *Chronic Toxicity QA/QC Bioassay Data Validation Form* included in Attachment I of this report.

Sediment samples at Stations SED-003, SED-004, SED-005, SED-006, and SED-007 were collected on November 3, 2021 by WGR Southwest Inc. All collected samples were preserved as required and submitted to Aquatic Bioassay and Consulting Laboratories Inc. on November 4, 2021. Chronic toxicity tests for all five stations began on November

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Sediment Bioassay Data Validation Report Page 2 of 3

9, 2021 and concluded on November 19, 2021. A summary of data usability determinations for the chronic toxicity test performed are described in the following section.

3.0 Eohaustorius estuarius Chronic Toxicity Test

3.1 Sample Collection, Sample Preservation, Chain of Custody

Sediment samples for *E. estuarius* chronic toxicity testing were collected from Stations SED-003, SED-004, SED-005, SED-006, and SED-007 using an Eckman dredge sampler. Sampling equipment was decontaminated prior to use at each station to prevent cross contamination. Field samples were handled with care to minimize sediment disturbance and prevent the loss of sample integrity, chemical speciation and chemical equilibrium. Collected samples were maintained at 4°C and a Chain of Custody documenting the collected samples was completed and submitted to Aquatic Bioassay & Consulting Laboratories Inc. Chronic toxicity testing was initiated for all samples within the required 14-day holding time for sample collection and analysis. Document review of sample collection, sample preservation and Chain of Custody procedures was deemed acceptable and in compliance with the facility's Waste Discharge Requirements (WDRs).

3.2 Test Setup

Chronic toxicity testing with *E. estuarius* was completed in accordance with EPA method 600/R-94-025. Organisms used for testing were field collected and supplied by Northwestern Amphipod in Oregon. Amphipods ranging in 3-5 mm in size were used, with at least twenty organisms per replicate. Test setup review is provided in the bioassay data validation form attached to this document. Based on a review of laboratory test setup procedures, test set up procedure were deemed acceptable and in compliance with EPA method requirements.

3.3 Test Implementation

Test implementation for chronic toxicity testing with *E. estuarius* was completed in accordance with EPA method 600/R-94/025. Water quality measurements were recorded during the duration of the test and were found to be in the acceptable range as specified in the test protocol. Ranges for the water quality measurements are provided in the QA/QC Checklist of Attachment I. No abnormal conditions were observed throughout the duration of the test. Thus, the test implementation was determined to be acceptable and in compliance with EPA method requirements.

Tesoro Refining & Marketing LLC Los Angeles Refinery – Carson Operations Sediment Bioassay Data Validation Report Page 3 of 3

3.3.1 Test Acceptability Criteria

3.3.1.1 Reference Toxicant

The reference toxicant used during *E. estuarius* chronic toxicity testing was unionized ammonia. The length of the reference toxicant test was 96 hours. All reference toxicant testing was within the two standard deviation quality control limit meeting the test acceptability criteria in compliance with EPA method requirements.

3.3.1.2 Negative Control Samples

Negative control samples demonstrated a 99% survival at all sample stations, which is above the 90% mean acceptability survival criteria. As a result, the negative control sample results are considered acceptable at all sampled stations and in compliance with EPA method requirements.

3.4 Reporting

Bioassay results were delivered in an acceptable laboratory report documenting a summary of water quality results, reference toxicity results, test results, statistical calculations and percent mortality. Additional information regarding test setup/test implementation procedures was provided by the laboratory to complete the QA/QC bioassay data validation form. Overall, the reporting component presenting chronic toxicity test results for *E. estuarius* was deemed acceptable.

3.5 Overall Data Usability

Review of laboratory data indicated chronic toxicity testing was performed in accordance with EPA method 600/R-94/025 as documented in Attachment I. Through the bioassay laboratory report and additional clarification from the laboratory, the bioassay test results at all sample stations was deemed acceptable and in compliance with EPA method requirements.

Attachment I Dominguez Channel Estuary Sediment Bioassay Data Validation Form

Tesoro Refining & Marketing LLC

Los Angeles Refinery - Carson Operations

Dominguez Channel Estuary Chronic Toxicity QA/QC Bioassay Data Validation

| PROJECT INFORMATION | | | | | | | | |
|---------------------------------|---|-----------------------|---|--|--|--|--|--|
| Project Name: | Dominguez Channel Sediment Sampling | | | | | | | |
| Analytical Laboratory: | Aquatic Bioassays & Consulting Laboratories Inc. | | | | | | | |
| Laboratory Technician: | Joe Freas | | | | | | | |
| Sample Collection Date: | November 3, 2021 | | | | | | | |
| Sample Locations/Lab Number: | SED-003 / WGR1121.046 | SED-003 / WGR1121.046 | | | | | | |
| | SED-004 / WGR1121.047 | | | | | | | |
| | SED-005 / WGR1121.048 | | | | | | | |
| | SED-006 / WGR1121.049 | | | | | | | |
| | SED-007 / WGR1121.050 | | | | | | | |
| Species/Test Method Referenced: | Eohaustorius estuarius | Test | SED-003: November 9, 2021 @ 13: 00 - November 19, 2021 @13:00 (10 day) | | | | | |
| | EPA/600/R-94-025 Duration: SED-004: November 9, 2021 @ 13: 01 - November 19, 2021 @13:01 | | | | | | | |
| | | | SED-005: November 9, 2021 @ 13: 02 - November 19, 2021 @13:02 (10 day) | | | | | |
| | | | SED-006: November 9, 2021 @ 13: 03 - November 19, 2021 @13:03 (10 day) | | | | | |
| | | | SED-007: November 9, 2021 @ 13: 04 - November 19, 2021 @13:04 (10 day) | | | | | |
| Sample Matrix: | Sediment | | | | | | | |
| Type of Species: | Estuarine | | | | | | | |
| Data Validator: | Amber Ballrot | | | | | | | |
| Validation Date: | December 9, 2021 | | | | | | | |
| Signature: | Amlu Bellist | | | | | | | |
| Problems Noted: | No problems or deficiencies | identified. Chr | onic toxicity testing was performed in accordance with EPA method guidelines. | | | | | |

EOHAUSTORIUS ESTUARIUS

| Completeness and Holding Conditions: | | | | | | |
|---|-------------------------------|--|--|--|--|--|
| Type of Samples Collected: Grab Sediment Samples | Number of Samples Analyzed: 5 | | | | | |
| Were samples maintained at 4°C and in the dark after collection? Yes | | | | | | |
| Did chronic toxicity testing begin within 14 days of sample collection? Yes | | | | | | |
| Holding conditions acceptable? Yes | | | | | | |
| If holding conditions were not acceptable, explain: N/A | | | | | | |

Tesoro Refining & Marketing LLC

Los Angeles Refinery - Carson Operations

Dominguez Channel Estuary Chronic Toxicity QA/QC Bioassay Data Validation

Quality of Test Organism, Collection and Acclimation:

Who is the supplier of the test organisms? Northwestern Amphipod in Oregon

Are organisms field collected or cultured? | Field Collected

If field collected:

Where was the collection location? Oregon

What was the organism collection date? Organism were collected on November 1, 2021 and received by the laboratory on November 3, 2021.

What was the water salinity and temperature at the time of collection? Water salinity at the time of collection was 27 ppt. Temperature at the time of collection was 17.5 Degrees Celsius. Acclimation after collection began at 25 ppt. Final acclimation in laboratory was from 23 ppt to 20 ppt at -1 ppt/day.

Was site sediment collected for holding and acclimation purposes? Yes, 2L of site sediment was collected and used for acclimation.

Additional Comments: Quality of test organisms, collection, and acclimation is deemed acceptable.

Field Collection Sorting Methods

Were healthy amphipods placed into 10 cm diameter finger bowls with 2 cm sieved site sediment and seawater of appropriate salinity? Yes, only healthy organisms were used for bioassay testing. All sediment was sieved through stainless 2mm sieve. Overlying water of 20ppt was used for testing.

Were organisms held for 2-10 days? Yes, organisms were held for 6 days prior to testing.

Was test sediment sieved through 2 mm sieve or forceps for predator removal? Yes, all sediment was sieved using a stainless steel 2mm sieve.

Was control sediment sieved twice through 0.5 mm? Yes, control sediment was sieved using a 0.5mm stainless sieve two times.

Did control sediment have a 4-hour settling period after each sieving? Yes, control has a >4 hour settling period after each sieving.

Test Initiation

Was salinity adjusted in all testing chambers? Yes

Was overlying ammonia detected? No ammonia was detected on overlying water. MDL 0.1mg/L.

Were there at least 5 replicates per sample? Yes

Was there at least 20 animals per replicate? Yes

Was the organism length between 3-5 mm during test initiation? Yes, organism length was checked using dial calipers and confirmed within 3-5mm at test initiation.

Was the overlying water volume 800 mL? Yes

Were there any water quality adjustments? Yes, water quality measurements were collected during the duration of the test and are provided in the corresponding laboratory report.

Test Implementation

Photoperiod for 24 hours? Yes, 24 hour light cycle was employed for testing.

Was daily water quality monitoring conducted? Yes

What was the overlying daily temperature range (15°C)? The overlying daily temperature was maintained at 15°C.

Tesoro Refining & Marketing LLC

Los Angeles Refinery - Carson Operations

Dominguez Channel Estuary Chronic Toxicity QA/QC Bioassay Data Validation

Was the daily salinity range 20+/-1 ppt? Yes, salinity range was 20ppt.

Was water renewal conducted? No, water remained static and was not renewed over the 10-day exposure period as required in the EPA method.

Was the overlying daily pH between 7 – 8 standard units? Yes

What was the overlying ammonia detection (ND)? No ammonia was detected during testing.

Were appropriate test chambers used (1-liter glass containers with 10 cm diameter)? Yes

Was water in each test chamber aerated overnight before start and throughout the test? Yes, aeration occurred at 1 bbl/second throughout testing.

Did the water maintain at least more than 90% saturation of dissolved oxygen concentration? Yes

Test Results and Analysis

Were the number of amphipods reported for each replicate? Yes

Was the percent mortality reported for each replicate? Yes

Was the sample mean for survival reported? Yes, the mean control survival was 99-100%

QA/QC Samples

| | QA/QC Samples | |
|--|---|---|
| | Positive Control | Negative Control |
| | Length of reference toxicity test? 96 hours | Negative control response above 90% acceptability criteria? Yes |
| | What reference toxicant was used? Unionized Ammonia | Mean control survival? 99% |
| Exposure concentrations? Exposure ammonia concentrations were 0, 15.6, | | Did EC 50 fall within lab standards? Yes |
| | 32.2, 62.5, 125.0, 250 mg/L | Did EC 30 fall Within lab Standards: 165 |
| | Did EC 50 fall within lab standards? Yes | |