

Appendix M

Summary of Work Performed and Materials Relied Upon

The following tasks have been completed during the investigation of the subject property:

1. ERM conducted oversight of ICON's soil, sediment, and groundwater investigation conducted in the vicinity of the former Chevron operational area and select locations in Area 2 between May and September 2020 which included the following:
 - a. Installation of soil/sediment borings and monitoring wells and collection of soil and groundwater samples. ERM collected a split of each ICON soil, sediment, and groundwater sample where adequate sample volume was provided, and analyzed the split samples for the same list of analytes. ERM also analyzed the soil, sediment, and groundwater samples for additional analytes including Total Petroleum Hydrocarbon (TPH) fractions, dissolved metals (groundwater only), etc.;
 - b. The soil, sediment, and groundwater samples were analyzed by Element Materials Technology (Element) in Lafayette, Louisiana, Pace Analytical (Pace) in Baton Rouge, Louisiana, and Eberline Services (Eberline) in Oak Ridge, Tennessee. All three laboratories are Louisiana Environmental Laboratory Accreditation Program (LELAP) accredited laboratories;
 - c. Logging of soils by an ERM scientist and preparation of soil boring logs, which are included in Appendix D; and
 - d. Low-flow steady state pumping tests at JLS-11 and JLS-14. Results of the analysis of the test performed at JLS-11 are provided in Appendix F.
 - e. Laboratory reports are provided in Appendix K.
 - f. Field notes recorded by ERM personnel during the field activities are provided in Appendix I. Ground level photographs taken by ERM personnel during the field activities, along with logs of the photos, are provided in Appendix J.
 - g. ERM obtained and reviewed testing data from Hydro-Environmental Technology, Inc. (HET), who conducted oversight of ICON's investigation activities, and subsequently conducted their own investigation activities.
2. ERM conducted soil, sediment, and groundwater investigation activities in February 2021 which included the following:
 - a. Installation of soil/sediment borings and monitoring wells and collection of soil, sediment, and groundwater samples;
 - b. Collection of surface water samples;
 - c. The soil/sediment, groundwater, and surface water samples were analyzed by Element, Pace, Eberline, and Ardaman and Associates. All four laboratories are Louisiana Environmental Laboratory Accreditation Program (LELAP) accredited laboratories;
 - d. Logging of soils/sediment by an ERM scientist and preparation of soil boring logs, which are included in Appendix D;
 - e. T. Baker Smith surveyed water depths in Bayou Pigeon and canals, monitoring well locations and elevations, and transects of canals and spoil banks. Survey data are included in Appendix C.

- f. Slug testing the MW-1, MW-2, and MW-3 wells; and,
 - g. Measurement of water levels in monitoring wells on February 9, 2021.
 - h. Laboratory reports are provided in Appendix I.
 - i. Field notes recorded by ERM personnel during the field activities are provided in Appendix I. Ground level photographs taken by ERM personnel during the field activities, along with logs of the photos, are provided in Appendix J.
 - j. ICON collected splits of samples during ERM's investigation; however, ICON did not submit their splits of surface water samples for laboratory analysis.
3. ERM conducted additional site visits for visual assessment, photography, drone footage, root zone study and/or ecological assessment on November 19, 2020, November 24, 2020, December 9-11, 2020, March 4, 2021, and March 15, 2021.
 4. ERM analyzed the electronic data from the slug tests and JLS-11 pumping test by importing the water level data into AQTESOLV Version 4.5, a commercially available and widely used software program. The water level displacement data collected during the test were plotted electronically on a logarithmic scale vs. elapsed time on a linear scale. As specified in RECAP Appendix F, the Hvorslev (1951) curve-matching method for confined aquifers was used to calculate the hydraulic conductivity. The well yield was calculated based upon LDEQ's RECAP Appendix F equations.
 5. Reviewed and evaluated reports and other data and documents generated and produced by Plaintiffs' and Defendants, including the following:
 - a. Plaintiff Expert Reports;
 - b. ICON data production (Bates No. JLSCPC_Miller_SDT_000001 through JLSCPC_Miller_SDT_002867);
 - c. Charles Norman data production (Bates No. JLSCPC_Norman_SDT_000001 through JLSCPC_Norman_SDT_005014); and
 - d. Chevron data production (Bates No. CHEV_JLSCPC-00000001 through CHEV_JLSCPC-00001106).
 6. Obtained and reviewed the United States Geological Survey (USGS) topographic maps for the Lake Chicot and Centerville NW Quadrangles that cover the property and surrounding area.
 7. Obtained, mapped, and reviewed soil data from the United States Department of Agriculture (USDA) Natural Resources Conservation System database (<https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>).
 8. Obtained, mapped, and reviewed underground pipelines utilizing the Rextag Oil & Gas Transportation & Processing Data Set (<https://rextag.com/gis>).
 9. Obtained, mapped, and reviewed water well information from the LDNR SONRIS GIS database and LDNR water well files.
 10. Obtained, mapped, and reviewed oil and gas well and pit information from the LDNR SONRIS GIS database and LDNR historic well files and other available documents.
 11. Obtained, mapped, and reviewed surface water data for the Louisiana Department of Environmental Quality (LDEQ) Drainage Basin Subsegments #LA010501 (Lower Atchafalaya Basin Floodway-From Whickey Bay Pilot Channel at mile 54 to US-90 bridge in Morgan City; includes Grand Lake and Six Mile Lake) and #LA010502 (Intracoastal Waterway (ICSS) – Morgan City-Port Allen Route from Bayou Sorrel Lock to Morgan City) [<http://www.deq.louisiana.gov>].

12. Obtained, mapped and reviewed water quality data from the USGS database: (<http://nwis.waterdata.usgs.gov>).
13. Obtained, mapped, and reviewed United States Fish and Wildlife Service (USFWS) wetlands inventory data (<https://www.fws.gov/wetlands/>).
14. Obtained, mapped, and reviewed Federal Emergency Management Agency (FEMA) flood maps (<https://www.fema.gov/flood-maps>).
15. Obtained, mapped, and reviewed USGS hydrography data (<https://apps.nationalmap.gov/viewer/>).
16. Obtained, mapped, and reviewed Louisiana Geological Survey Baton Rouge and Morgan City 100K surface geology maps (<https://www.lsu.edu/lgs/maps/100k-Geology.php>)
17. Obtained, geo-referenced, and reviewed numerous historical aerial photographs of the property area. Sources include USGS, Louisiana State University, ArcGIS Online, and documents produced by ICON.
18. Obtained, mapped, and reviewed Light Detection and Ranging (LIDAR) ground surface elevation data from Louisiana State University (<http://atlas.lsu.edu/lidar/>).
19. Obtained and reviewed literature on soils and geology/hydrogeology from the United States Department of Agriculture (USDA), Louisiana Geological Survey (LGS), USGS, and other published references.
20. Obtained, mapped, and reviewed LDEQ aquifer recharge data from Louisiana State University (<http://atlas.lsu.edu/>).
21. Reviewed documents for LDEQ Agency Interest locations on and near the Property in the LDEQ Electronic Document Management System (EDMS) (<https://edms.deq.louisiana.gov/app/doc/querydef.aspx>).
22. Reviewed and consulted the following:
 - a. LDNR Statewide Order 29-B regulations;
 - b. LDEQ RECAP regulations and guidance;
 - c. LDEQ Title 56 Public Works Part I. Water Wells;
 - d. Louisiana Surface Water Quality regulations; and,
 - e. EPA MCLs and SMCLs and Radionuclides Rule.
23. Reviewed expert reports and other documents produced by the plaintiffs' experts.

Data and information gathered and evaluated as part of the above tasks were relied upon for the development of this report. ERM may supplement the opinions presented herein based on the receipt and review of additional information.