



RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

October 19, 2020

Mr. Jamie Cornelius
Sowell Interests – Atasocita, L.P.
1601 Elm Street, Suite 3500
Dallas, TX 75201

RE: *Certificate of Completion with Restrictions*
64.130 Acre Tract of Land
Sowell Interests
Humble, Harris County, Texas
Voluntary Cleanup Program (VCP) No. 03-18005

Dear Mr. Cornelius:

Staff of the Railroad Commission of Texas (RRC) Voluntary Cleanup Program is pleased to provide you with the enclosed Certificate of Completion with restrictions for the approximately 64.130-acres of land located on Atascocita Road in Harris County near Humble, Texas. The site is more specifically located at latitude 29.97201 and longitude -95.23097 (WGS 84/NAD 83). This letter only applies to historical oil and gas exploration and production activities on the property that are subject to the RRC's jurisdiction. The following reports were reviewed prior to issuance of this Certificate:

- Phase I and Phase II Environmental Site Assessment, ABD 657 R. Ruhl Survey, Approx. 71-acres, Harris county, Texas, dated January 2, 2003;
- *Revised Oil and Gas Well Survey, 64± acres Atasocita Rd., Harris County, Texas, dated November 8, 2005;*
- Site Assessment Report, Sowell Atasocita Property, dated October 16, 2018;
- Proposed Work Plan, Sowell Atasocita Property, VCP No. 03-18005, dated March 12, 2019;
- Comprehensive Site Assessment Report and Remediation Report, Sowell Atasocita Property, Harris County, Texas, dated September 2019;
- Response to RRC's Comments on Comprehensive Site Assessment Report and Remediation Report, Sowell Atasocita Property, VCP No. 03-18005, dated December 5, 2019;
- Groundwater Sampling and Replacement Well Installation, Second Quarter 2020, Sowell Atasocita Property, VCP No. 03-18005, dated May 21, 2020.

Site History

Oil and gas exploration and production activities have occurred at the site since the 1930s. The site was also the location of the Humble Oil & Refining Company's field office. The site has also been used for grazing of livestock for more than sixty years. A records review of the property identified twenty-five oil and gas wells (including dry holes, and injection wells) at the site. Oil and gas production on the property ended in 2005 when the last of the twenty-five wells were plugged and abandoned prior to the sale of the property.

Environmental Investigations

A Phase I and Phase II Environmental Site Assessment was conducted by Texas Energy & Environmental, Inc. (TEEI) in 2003. The Phase I and II report noted numerous oil spills from the well heads and tank battery on site, as well as 14 pits that appeared to be filled with water with no visible sign of oil present within them. Additionally, the report noted oil field debris throughout the site including oil drums, oil tanks, pump jacks, etc. A total of five soil borings were installed at the site between 0 and 10 feet below ground surface (bgs) and two samples were collected from each for laboratory analysis. Note that the geographic locations of TEEI's samples were not illustrated in the report. All samples were analyzed for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX). One sample was analyzed for metals. Results showed elevated concentrations of TPH and metals. During TEEI's assessment, active oil production was reported to still be in progress involving the production of three barrels of oil per day from the lease, NN Lee (Lease ID 03-10998), which was operated by Pride Energy Company (P-5 No. 677050). TEEI's report recommended further soil sampling be conducted when the property is developed.

In 2003 and 2005, Phase One Technologies, LLC (PTL) conducted an oil and gas records review to evaluate historical oil and gas wells on the site. The records review identified 25 former wells (oil wells, dry holes, and injection wells) on the site. In accordance with procedures laid out in the RRC's guidance document, *RRC-VCP Well Assessment*, PTL conducted a site reconnaissance to determine the locations of the 25 former wells and ensure that they had been plugged. PTL utilized global positioning systems (GPS), magnetometers, and excavation equipment to evaluate the historical well locations. The reconnaissance located 19 of the 25 wells and documented those 19 wells as plugged. The locations of the remaining six wells could not be confirmed. PTL further collected near-surface soil samples (upper 1 foot) in the areas of the 19 wellheads that were located. The results of that testing indicated elevated TPH concentrations (>10,000 mg/kg) were present in soil at six wellhead locations.

CK Associates, LLC (CK) conducted additional site assessment work in March 2018. CK collected soil samples from the upper one-foot below ground surface (bgs) at six of the former wellhead locations, which contained total petroleum hydrocarbon (TPH) concentrations exceeding Tier 1 soil to groundwater (^{GW}Soil_{Ing}) protective concentration levels (PCLs) in previous environmental site assessments performed by PTL. TPH was detected above the Tier 1 ^{GW}Soil_{Ing} PCL at one former wellhead location (SS-8). The sample was also analyzed for Texas Method 1006, and the results show TPH below the calculated site-specific mixture PCL. Lead was reported above the Texas Specific Background in SS-8 near former tank battery and wellhead and SS-19 near a former wellhead. According to CK, all lead exceedances were determined to be protective of groundwater using Synthetic Precipitation Leaching Procedure (SPLP).

CK identified 24 ponds on the Site, none of which contained waste material, but some contained standing water. Soil or sediment samples were collected from the upper one foot soil from the base of each pond. Results of the sampling showed 18 of the 24 ponds contained barium or lead at concentrations above the Tier 1 ^{GW}Soil_{Ing} PCL. All exceedances but five were determined to be protective of groundwater using SPLP. Ponds 14 and 22 contained barium exceeding the residential Tier 1 total soil combined (^{Tot}Soil_{Comb}) PCL. Approximately 950 cubic yards of barium affected soil was excavated from four ponds (Ponds 14, 22, 33, and 34) and disposed offsite. Following excavation of the ponds, confirmation soil samples were collected along the sidewalls and floor of excavations. The results were all below the applicable Tier 1 ^{Tot}Soil_{Comb} PCL for barium. The barium-affected soil was disposed offsite at Waste Management's Atascocita Landfill. Additionally, approximately 7.5 cubic yards of soil containing TPH concentrations above the calculated site-specific mixture PCL were removed from a small area within Pond 32 followed by confirmation sampling of the sidewalls and floor. Confirmation samples showed concentrations of TPH were still above the Tier 1 residential ^{Tot}Soil_{Comb} PCLs but were below the calculated site-specific TPH mixture PCL. The hydrocarbon-affected soil was disposed offsite at Waste Management's landfill facility in Conroe, Texas.

Chloride concentrations in the area of Pond 10 ranged from 2,503 to 3,620 milligrams per kilogram (mg/kg), which exceeds the RRC recommended assessment level of 3,000 mg/kg. The salt-scarred area associated with Former Pond 10 was remediated through excavation followed by transferring that soil to a central area on the site for mixing. The soil excavated from Pond 10 (approximately 1,800 cubic yards) was mixed with native soil. Confirmation soil samples were taken from Pond 10 following the excavation and from the Central Area after the mixing occurred. Following confirmation sampling, an approximate 1-foot layer of surrounding topsoil was placed over the excavated pond floor to support vegetation. After mixing, CK collected soil samples from 51 approximately equally-spaced cells to evaluate the results. The results were generally favorable although some additional mixing was performed in the northwestern area based on the initial results. Subsequently, four additional confirmation samples were collected (for a total of 55 samples). The final samples (after further mixing) exhibited chlorides values ranging from 30.3 to 1,560 mg/Kg (average chloride value of 656 mg/kg) and EC values ranging from 0.292 mmhos/cm to 2.71 mmhos/cm (average EC value of 1.47 mmhos/cm). While some of the chloride concentrations were above the very conservative target mixing range of 500 to 1,000 mg/kg, all the values were substantially below the RRC's recommended assessment level of 3,000 mg/kg.

Four former tank batteries were identified on the Site. Tank Battery Area 1 located in the central portion of the Site, Tank Battery Area 2 located in the southwest portion, Tank Battery Area 3 located in the western portion, and Tank Battery Area 4 in the northern portion. The soil samples in Tank Battery Area 1 exceeded Tier 1 residential ^{GW}Soil_{Ing} PCLs for benzene, TPH, and 1-methylnaphthalene. TPH exceedances were determined to be protective of groundwater based on a site-specific TPH mixture PCL calculated for the source area.. In Tank Battery Area 2 no COCs were detected in soil. In Tank Battery Area 3, lead was detected above the Tier 1 residential ^{GW}Soil_{Ing} PCL from 17-20 feet bgs. In Tank Battery Area 4, TPH and 1- methylnaphthalene was detected above Tier 1 residential ^{GW}Soil_{Ing} PCLs.

A total of 10 permanent groundwater monitor wells were installed at the site by CK. Initial groundwater analytical results showed chloride concentrations exceeding the RRC recommended protective concentration limit of 300 mg/L in all the tank battery areas with chloride concentrations ranging from 353 mg/L in Tank Battery Area 2 to 13,100 mg/L in Tank Battery Area 1. TPH, arsenic, and barium were detected above Tier 1 ^{GW}GW_{ing} PCLs in Tank Battery Area 1. Downgradient monitor wells MW-7 through MW-10 were installed to delineate groundwater impacts. TPH and metal concentrations were below applicable PCLs in all downgradient monitor wells. Chlorides were reported below the Texas Secondary Standard in all downgradient monitor wells except MW-8 with a concentration of 305 mg/L. A total of four groundwater sampling events occurred at the site since the installation of the 10 permanent monitor wells. Results of the four sampling events indicate that groundwater conditions at the site are stable and/or declining and that groundwater contamination at the site is delineated.

Environmental Restrictive Covenant

Based on the findings of the soil and groundwater assessments performed at the Site, an institutional control restricting the use of groundwater from 4 to 200 feet bgs was determined to be an acceptable remedy for contamination remaining in groundwater at the Site. A restrictive covenant (Document No. RP-2020-434275) was filed and recorded with the Harris County Clerk's office on September 15, 2020. The Affected Property is described as a 62.902-acre tract and more fully described in Exhibit "A" of the enclosed restrictive covenant. The following restrictions apply to the entire 62.902-acre tract:

1. The investigation and assessment reports identified impacted soil at depths ranging from the upper 1 foot to 23 feet below ground surface (bgs) and impacted groundwater ranging from 4 feet to 36 feet bgs. Penetration of the impacted soil and/or groundwater beneath the Affected Property for any purpose shall only be conducted in such a manner as to prevent the migration or release of contaminants to any other zone or environmental media and to prevent uncontrolled exposure to human and ecological receptors.
2. Use or consumption of groundwater beneath the Affected Property ranging from 4 feet to 200 feet bgs shall be prohibited except for monitoring and remediation purposes.
3. Any water wells completed on the Affected Property must be installed by a Texas Department of Licensing and Regulation (IDLR)-licensed water well driller in accordance with applicable rules. Installed wells shall not be screened/perforated from the surface to 200 feet bgs unless for authorized monitoring purposes and the collection of samples for analysis.
4. These restrictions shall be a covenant running with the land.

Monitor Well Plugging and Abandonment

Plugging and abandonment activities of the four remaining monitor wells on site should be performed in accordance with requirements outlined in 16 TAC Chapter 76. A copy of all plugging reports should be provided to the RRC.

Mr. Jamie Cornelius
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On behalf of the RRC, staff of the Site Remediation Section thank you for your participation in the VCP. If you have any questions regarding the content of this letter, I can be reached at 512-463-3384 or leslie.bruce@rrc.texas.gov.

Sincerely,



Leslie Bruce
VCP/Brownfields Program Coordinator

CC: Mr. Peter Pope, Manager, Site Remediation (via email)
Ms. Kathy Fox Powell, Sowell Interests – Atascocita, L.P. (via email)
Ms. Alysse Gray, Sowell Interests – Atascocita, L.P. (via email)
Mr. Hollis Millard, CK Associates (via email)
Ms. Cynthia Bishop, C Bishop Law, PC (via email)

Enclosed: Voluntary Cleanup Program Final Certificate of Completion
EXHIBIT "A": Voluntary Cleanup Program Legal Description
EXHIBIT "B": Voluntary Cleanup Program Affidavit of Completion
ATTACHMENT 1: Voluntary Cleanup Program Institutional Control Document