BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Petitioner, vs. CHIQUITA CANYON, LLC a Delaware Corporation, [Facility ID No. 119219] Respondent.	**Case No. 6177-4** **DECLARATION OF ROBERT DICK, P.E., B.C.E.E.** Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150 Hearing Date: April 16 and 17, 2025 Hearing Time: 9:30 A.M. Place: Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

I, Robert Dick, declare as follows:

1. I am of sufficient age and am competent to testify in this proceeding. I make this declaration based upon personal knowledge and am competent to testify to the facts set forth herein.

Background and Experience

2. As discussed in detail in my prior declarations in Case No. 6177-4, I serve as the Senior Vice President and Solid Waste Division Leader and Business Unit Director for SCS Engineers, Inc. ("SCS") and have worked with SCS for approximately 35 years. I am a licensed professional engineer with over 35 years' experience on civil and environmental engineering projects related to solid waste management. My work focuses largely on municipal solid waste landfills like the Chiquita Canyon Landfill (the "Landfill"). I was retained by Chiquita Canyon, LLC ("Chiquita") to provide expert consulting services related to managing the elevated temperature landfill ("ETLF") conditions currently being experienced by the Landfill and any resulting impacts, including odors and liquids.

3. I serve on the Reaction Committee as the subject matter expert for chemical reaction(s) within landfills, which can result in atypical landfill conditions, such as heat accumulation, certain changes in landfill gas and leachate composition, distinct odors, accelerated settlement, formation of significant subsurface pressures, and elevated levels of hydrogen, dimethyl sulfide, and non-methane organic compounds.

4. This declaration is made for the status and modification hearing being held on April 16 and 17, 2025 on the Stipulated Order for Abatement in Case No. 6177-4 with the South Coast Air Quality Management District ("South Coast AQMD"), most recently modified on November 13, 2024 ("Modified Stipulated Order").

The Reaction Mitigation Measures are Working

5. As explained in my prior declarations and testimony, the Landfill is experiencing the typical symptoms of an ETLF event. Chiquita continues to undertake numerous actions to assess, evaluate, measure, and investigate the ETLF event, the symptoms associated with the reaction, and its potential causes. Such actions continue to provide Chiquita with comprehensive information on the status of the ETLF event.

6. As required by the Stipulated Order, the Reaction Committee conducts a monthly analysis of specific criteria and data parameters to evaluate the intensity and location of ETLF conditions. The Committee analyzes multiple parameters, including the presence of heat, increased pressure, and gas composition. Wells exhibiting the inverted methane-to-carbon dioxide ratio and elevated hydrogen concentrations should not be characterized as exhibiting evidence of a reaction in isolation or based exclusively on this parameter. The lack of atypical heat (greater than anaerobic digestion temperatures) in conjunction with these parameters would suggest that the waste mass surrounding a particular well is likely not experiencing reaction conditions.

7. Using this assessment, the Committee estimates the approximate geographic extent of the reaction characteristics and submits reports on a monthly basis as required by **Condition 9(a) and (b)**. The reports include a narrative summary of our review and determination, and a revised map of the Reaction Area, outlined with a magenta dashed line, and the Condition 9(a)

Reaction Area boundary, outlined with a solid black line (boundary of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2).

8. Since my last declaration, I submitted these determination reports on September 6, 2024, October 7, 2024, November 7, 2024, December 10, 2024, January 10, 2025, February 10, 2025, and March 10, 2025. Each report also includes a drawing depicting the location of the landfill gas wells and collectors as well as temperature monitoring probes in relation to the Landfill cell boundaries, a map of the maximum temperatures from temperature probes along with their temperature profiles in the Landfill, an isothermal gradient range map depicting gas temperatures recorded at the wellheads, and a range map depicting the carbon monoxide concentrations measured at the wellheads. True and correct copies of these reports are attached hereto as **Exhibits A through G.**

9. These reports show that the ETLF conditions remain generally consistent with the initial delineation developed in October 2023. While the Reaction Committee has adjusted the data-driven reaction area boundary (magenta line), it has not adjusted the Condition 9(a) reaction area boundary (black line).

10. I am aware of the allegations from regulators, including the California Environmental Protection Agencies CalRecycle and the Department of Toxic Substances Control, that the Reaction Area has expanded dramatically. I am reviewing the various reports Chiquita received on April 1, 2025 to better understand the basis for these allegations. Based on my knowledge to date, I disagree with these assertions. The Reaction Committee continues to assess available data and science and will make future adjustments to the estimated boundary line as appropriate.

11. Some fluctuation or variation of the extent of the ETLF conditions is expected. Reactions, like the one Chiquita is experiencing, typically have the potential to expand for several years depending on how aggressive of an approach the facility takes to implementing mitigation measures, particularly the removal of liquids. Because of Chiquita's aggressive approach, sanctioned by the regulators, the reaction boundaries have remained relatively stable since I began

analyzing the relevant data for the Committee's preparation of the monthly determination reports in September 2023. This is evidence that the mitigation measures imposed are accomplishing their intended purpose. I will be prepared to testify on this topic at the upcoming South Coast AQMD hearing.

Compliance with the November Modified Stipulated Order.

12. The Modified Stipulated Order contains 92 conditions, many with multiple subparts, requiring Chiquita to take a wide range of actions designed to slow and stop the Landfill reaction, and mitigate any impacts.

13. The chart attached hereto as **Attachment 1** lists conditions that I have been involved with at Chiquita, their requirements, and the current status of compliance.

14. As required by **Conditions 12, 26, and 32**, the Reaction Committee has conducted many investigations and studies into the cause of the Landfill reaction, the potential impact of air pollutant emissions from sources at the Landfill, interim measures to limit malodorous emissions, and corrective measures to mitigate and abate the Landfill reaction. Attached hereto as **Attachment 2** is a table summarizing the main reports prepared and submitted to South Coast AQMD pursuant to **Conditions 12, 26, and 32**, as well as other notable reports and updates prepared and submitted by the Reaction Committee pursuant to the Stipulated Order, their respective statuses, and the Reaction Committee member in charge of each report. Each report that has been submitted to South Coast AQMD has also been posted on Chiquita's Odor Mitigation website (https://chiquitacanyon.com/odor-mitigation/).

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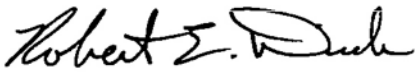
I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to my personal knowledge.

Executed on April 9, 2025 in Powhatan, Virginia.



Robert Dick
Senior Vice President
SCS Engineers

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Petitioner, vs. CHIQUITA CANYON, LLC a Delaware Corporation, [Facility ID No. 119219] Respondent.	**Case No. 6177-4** **ATTACHMENT 1 TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E.** Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150 Hearing Date: April 16 and 17, 2025 Hearing Time: 9:30 A.M. Place: Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

STIPULATED ORDER COMPLIANCE CHART

Condition No.	Summary of Requirement(s)	Status
9(a), 9(b)	The Reaction Committee must review applicable data, make a determination about whether to revise the Reaction Area map, and submit the determination, supporting evidence and assumptions and explanation for the determination, revised Reaction Area map (if applicable), isothermal gradient range map consisting of wellhead temperature measurements, wellhead carbon monoxide range map, and vertical temperature profiles for temperature probes at least once per month.	Compliance ongoing; most recently submitted on September 6, 2024, October 7, 2024, November 7, 2024, December 10, 2024, January 10, 2025, February 10, 2025, and March 10, 2025. True and correct copies of these determinations are attached hereto as **Exhibits A through G** and are posted on Chiquita's Odor Mitigation website.
12	Complete the formation of the Reaction Committee and provide the names and credentials of all persons included in the Reaction Committee.	Completed; submitted on October 5, 2023; updated on April 5, 2024.
12(f)	Host a monthly virtual meeting with all members of the Reaction Committee and South Coast AQMD technical staff.	Compliance ongoing; most recently held on August 27, 2024, September 26, 2024, October 23, 2024,

Condition No.	Summary of Requirement(s)	Status
		November 20, 2024, December 18, 2024, January 15, 2025, February 19, 2025, and March 19, 2025. South Coast AQMD has agreed not to hold a meeting in April because the timing overlapped with the scheduled Hearing Board hearing. The next meeting will be held in May 2025.
12(f)(i)	Provide proposed agendas 10 calendar days prior to the meeting.	Compliance ongoing; most recently submitted on November 8, 2024, December 7, 2024, January 3, 2024, February 7, 2025, and March 7, 2025.
12(f)(i)	Provide any tables, graphs, or documents 2 calendar days prior to the meeting.	Compliance ongoing; most recently submitted on November 20, 2024, December 18, 2024, January 15, 2025, February 14, and March 17, 2025.
12(f)(iv)	Post on Chiquita's Odor Mitigation website a summary of each meeting.	Compliance ongoing; most recently posted on September 16, 2024, October 16, 2024, November 12, 2024, December 10, 2024, January 7, 2025, February 4, 2025, March 11, 2025, and April 8, 2025. True and correct copies of these summaries are attached hereto as **Exhibits H through O** and posted on Chiquita's Odor Mitigation website.
12(g)(ii)	Submit a report on the cause of the alleged chemical reaction(s) resulting in the elevated well temperatures, elevated levels of DMS formation in the landfill gas, and formation of elevated levels of non-methane organic compounds in the landfill gas, in addition to solutions to slow and stop the reaction(s) in the landfill.	Completed; submitted on December 8, 2023.
12(h)	Post on Chiquita's Odor Mitigation website all expert reports submitted pursuant to Condition 12.	Compliance ongoing; see Chiquita's Odor Mitigation website.
39	Maintain and update regularly Chiquita's Odor Mitigation webpage.	Compliance ongoing; see Chiquita's Odor Mitigation website.
40	Host a public one-hour community meeting to provide updates with regards to	Compliance ongoing; most recently held on August 8, 2024, September

Condition No.	Summary of Requirement(s)	Status
	implementation of the Stipulated Order and post materials to the website each calendar month following a month in which Chiquita receives three or more Rule 402 notices of violation from South Coast AQMD.	12, 2024, October 10, 2024, November 7, 2024, December 12, 2024, January 9, 2025, February 6, 2025, and March 6, 2025. Meeting information is posted on Chiquita's Odor Mitigation website.
50	Follow the direction of the Environmental Protection Agency ("EPA") to implement the Master Work Plan submitted to EPA under the Unilateral Administrative Order ("UAO"). Submit any monthly progress reports submitted to EPA in accordance with the UAO to South Coast AQMD.	Compliance ongoing.
66	Install and operate a remote monitoring system in 20 wellheads, measuring the gas temperatures at each of the wells. Increase the monitoring frequency for temperature and pressure at landfill gas collection wells within the Reaction Area to twice monthly.	Installation completed; compliance ongoing.
66(a)(i), 66(a)(ii)	Submit finalized contracts to install and operate the remote wellhead temperature monitoring system and relevant known information of the remote monitoring system.	Completed; submitted on September 17, 2024 and posted on Chiquita's Odor Mitigation website.
66(a)(iii)	Contact at least three reputable vendors for each remote monitoring system device and components that have identified issues/concerns and obtain proposed solutions and recommendations for each such concern. Submit the documented correspondence of the results of the communication.	Completed; submitted on October 11, 2024 and posted on Chiquita's Odor Mitigation website.
66(a)(iv)	Submit findings and solutions to issues documented in Condition 66(a)(ii) and (iii), including any inventory of vertical wells and temperature monitoring probe network infrastructure.	Completed; submitted on October 30, 2024 and posted on Chiquita's Odor Mitigation website.
66(a)(v)	Reaction Committee to submit its determination of the location for installation of the remote monitoring system equipment.	Completed; submitted on October 15, 2024 and posted on Chiquita's Odor Mitigation website.

Condition No.	Summary of Requirement(s)	Status
66(a)(v)	Notify South Coast AQMD that the remote monitoring system for temperature in at least 20 wellheads was installed and operational in the initial Reaction Area as defined by Condition 9(a).	Completed; submitted on December 24, 2024. A true and correct copy of the notification is attached hereto as **Exhibit P** and is posted on Chiquita's Odor Mitigation website.
66(a)(vi)	Reaction Committee to submit a proposal to assess the viability and functionality of a remote monitoring system which measures temperature and pressure within a well with a pump located in the Reaction Area.	Completed; submitted on January 31, 2025. A true and correct copy of the proposal is attached hereto as **Exhibit Q** and posted on Chiquita's Odor Mitigation website.
67	Designate an Inspection Liaison responsible for coordinating an exchange of information between Chiquita and South Coast AQMD.	Completed.
92	Submit any file(s) with a cumulative size larger than 35 MB via a shared link by email.	Compliance ongoing.

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

ATTACHMENT 2 TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E.

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

CHART OF KEY REPORTS, INVESTIGATIONS, AND STUDIES

Condition No.	Title	Status	Reaction Committee Member
12(g)(i)	A report on known and possible methods for effective treatment of dimethyl sulfide ("DMS") and preventative mechanisms for DMS formation in landfill gas.	Completed; submitted on April 30, 2024, as required.	Patrick Sullivan
12(g)(ii)	A report on the cause of the alleged chemical reaction(s) resulting in the elevated well temperatures, elevated levels of DMS formation in the landfill gas, and formation of elevated levels of non-methane organic compounds in the landfill gas, in addition to solutions to slow and stop the reaction(s) in the landfill.	Completed; submitted on December 8, 2023, as required.	Robert Dick
12(g)(iii)	A report on the feasibility and availability of continuous community emission monitoring system to conduct continuous monitoring and provide estimates of DMS concentrations at the facility fence line and within the affected community.	Completed; submitted on December 1, 2023, as required.	Patrick Sullivan

Condition No.	Title	Status	Reaction Committee Member
12(g)(iii)	A workplan for the installation of and operation of the continuous community emission monitoring system for DMS concentrations if monitoring is feasible.	The DMS Committee determined that continuous monitoring is not feasible. Notified SCAQMD on December, 31, 2023, as required.	Patrick Sullivan
12(g)(iv)	A report on landfill best management practices and alternative methods to minimize the release of fugitive surface gas and minimize odors from fugitive surface gas, including cover practices at the Reaction Area and working face, and how best to address related odorous emissions	Completed; submitted on November 6, 2023, as required.	Neal Bolton
12(g)(v)	A report on the known health risks from acute and long–term exposure to DMS, including any action levels from other public health or government entities, and including a summary of recommended actions for persons exposed to DMS for acute and long–term durations.	Completed; submitted on January 15, 2024, as required.	Dr. Pablo Sanchez-Soria
12(g)(vi)	A report on the health impacts from ongoing and long-term exposure to hydrogen sulfide, or other speciated sulfur compounds, and any other hazardous air pollutants.	Completed; submitted on August 1, 2024, as required.	Dr. Pablo Sanchez-Soria & Dr. Richard Pleus
12(g)(vii)	A report on the development of a model to estimate the rate of liquid generation and the total quantity of liquid existing within the landfill waste mass at any given time.	Completed; submitted on June 25 2024, as required.	Neal Bolton
12(g)(viii)	An investigation into the existing landfill gas collection and conveyance piping materials, alternative landfill gas collection and conveyance piping materials, and current landfill conditions to determine appropriate piping for the current and expected future temperature conditions.	Completed; submitted on June 21, 2024, as required.	Srividhya Viswanathan
12(i)	Submit a report documenting the findings of the initial flux chamber study conducted pursuant to the direction of the	Completed; submitted by October 31, 2023, as required.	Patrick Sullivan

Condition No.	Title	Status	Reaction Committee Member
	Los Angeles County Department of Health.		
12(i)	Second flux chamber study to document results of the site-wide emission rates for compounds tested in Chiquita's flux chamber study events.	Completed; submitted by June 3, 2024, as required.	Patrick Sullivan
12(i)	Prepare a proposed protocol(s) for the flux chamber studies or use a previous flux study protocol, reviewed and approved by South Coast AQMD, if the proposed testing will follow all aspects of the prior approved protocol, with the exception of the testing/sampling locations onsite.	Compliance ongoing; submitted on December 29, 2023, as required.	Patrick Sullivan
12(i)	Conduct landfill gas flux study for, at a minimum, methane, non-methane organic compounds ("NMOC"), speciated hydrocarbons (C2-C12), toxic air contaminants ("TAC") analyzed by EPA Method TO-15 (including acrolein and additionally at least the ten highest concentration tentatively identified compounds), total reduced sulfur ("TRS"), and speciated sulfur compounds to determine the surface flux throughout the landfill starting with Quarter Four 2024 and once every four months thereafter. Submit reports detailing the operational conditions, methodology, quantity of tests and locations, sampling location determination, sampling results, data analysis, emission results, discussion of the results, and comparison of previous flux chamber test results to the current results.	Compliance ongoing; submitted on January 15, 2025, as required.	Patrick Sullivan
26	A report on the feasibility of temporary containment measures for the purposes of controlling leachate and possible discharges of pressurized leachate when drilling additional holes for wells, liquid pumps, temperature devices, or other purposes.	Completed; submitted on March 12, 2024, as required.	Neal Bolton
32, 32(a)	An air modeling report on odor and emission transport of odors from the landfill, including the identification of	Completed; submitted on December 1, 2023, as required.	Neal Bolton

Condition No.	Title	Status	Reaction Committee Member
	effective techniques to remedy potential odor impacts on the nearby community, an evaluation of the efficacy of odor control measures, and a recommendation on whether additional modeling is recommended to fully address the current odor circumstances at the landfill and potential odor impacts on the nearby community.		
32(b)	A proposal for an additional air modeling study.	Completed; submitted on January 15, 2024, as required.	Neal Bolton
32(b)(ii), 32(c)	A revised air modeling study proposal according to the comments received from South Coast AQMD.	Completed; submitted on May 8, 2024, with a further revision submitted on May 16, 2024 as required.	Neal Bolton
32(c)	A final written report on the additional air modeling.	Completed; submitted on September 2, 2024, as required.	Neal Bolton
56	A report detailing the parameters with respect to the sampling and analysis of vapors in the headspace of leachate tanks located in the Top Deck Tank Farm and complete laboratory analysis results.	Completed; submitted on April 18, 2024; revised on April 24, 2024, as required.	Dr. Pablo Sanchez-Soria & Patrick Sullivan
70	A report on the landfill's current landfill gas generation and projected landfill gas generation for the next five calendar years.	Completed; submitted on June 28, 2024, as required.	Patrick Sullivan
72(b)	A source report detailing final results within 30 days of analyzing samples of vapor flow in the piping used to vent the leachate storage tanks and landfill gas condensate tanks and route the vapors to the landfill gas control system.	Completed; submitted on November 15, 2024, as required.	Patrick Sullivan
72(c)	Within 30 days of submission of the 72(b) report, submit a recommendation from the Reaction Committee on additional vapor flow testing to South Coast AQMD.	Completed; submitted on December 13, 2024, as required.	Patrick Sullivan
83	Conduct a study and analysis and submit a report by March 31, 2025 of specific landfill operational events from June 1, 2024 through December 31, 2024 and their potential emission impacts to the surrounding community, as determined	Completed; submitted by March 31, 2025, as required.	Patrick Sullivan

Condition No.	Title	Status	Reaction Committee Member
	from an analysis of the air quality data recorded at monitoring stations MS-01 through MS-12. The report must also include a proposed scope for a continuation of the study for up to an additional 6 months, subject to review and approval by SCAQMD. The continuation of the study must proceed upon written approval by the South Coast AQMD.		
84	Evaluate the installation of windbreaks and/or wind flow disrupters along the western and northern borders of the facility, and/or ridgeline, such that there are not any distinguishable gaps in the border and/or ridgeline which may result in an odor channeling affect into the Val Verde community, to enhance the dispersion of odors from the facility and submit a report detailing the findings of the evaluation.	Completed; submitted by November 15, 2024, as required.	Neal Bolton

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT A TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

September 6, 2024
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Modified Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of August 2024, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 9/5/24. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2, as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line.

The Reaction Committee reviewed the temperature measurements recorded during August 2024 by the in-situ temperature monitoring probes. Three (3) of the twenty (20) probes (TP-2, 3, and 9) are located within the estimated extent of ETLF conditions (dashed magenta line), and thirteen (13) probes are positioned adjacent to (within 200 feet) of this boundary. There was some uncharacteristic variability in temperatures at the 30-foot depth thermocouple in TP-13. This did not constitute a definitive trend since the temperature increased over an initial period of time, then proceeded to decrease. The temperatures measured at other intervals within TP-13 remained unchanged. The landfill gas well that is co-located with TP-13 (CV-2473) did not exhibit elevated temperatures during this period. The Committee does not believe this temperature fluctuation in a relatively shallow depth signals an expansion of the reaction in this area. In researching potential causation for the variability at TP-13, the Committee noted that Well CV-2473 is not equipped with a pump, so it is unlikely that dewatering activities contributed to the changes in temperature heat. However, the extensive dewatering efforts that occurred during August may be contributing to subtle temperature fluctuations observed at shallow depth intervals in other temperature probes. In conclusion, similar to data recorded during the previous months, the temperatures recorded by the 13 probes outside of the boundary during August 2024 are not indicative of a subsurface reaction, and it is the Committee's opinion that they do not substantiate a decision to expand the boundary of the reaction area at this time.

The Reaction Committee also evaluated the concentration of hydrogen in landfill gas (LFG) during August 2024. Recall that certain wells positioned to the south and east of the reaction area boundary (where dewatering pumping was reactivated) had demonstrated some increased hydrogen

content in the LFG during the Reaction Committee's review of the May and July 2024 data; however, some of these wells have not sustained these hydrogen concentrations. The Reaction Committee had noted in its review of the May and July 2024 data that these wells did not exhibit elevated temperatures, such that there was no evidence of the increased heat that is typical with ETLF conditions present at these wells. The August 2024 data indicates the same situation where select vertical wells positioned to the south and east outside the reaction area boundary exhibit hydrogen concentrations over 2%; however, similar to the May and July data, none of the wells that exhibited some increased hydrogen content in the LFG during August are demonstrating atypical heat present. We suspect this may be attributed to wells being located adjacent to an existing horizontal well and they are believed to be intercepting gas collected from within the reaction area by horizontal wells in close proximity. Also, the extensive dewatering efforts that occurred during August may be contributing to movement of poor quality LFG into adjacent areas. Accordingly, the Reaction Committee does not believe an adjustment to the boundary of the reaction area is merited at this time. The Reaction Committee will continue to monitor LFG hydrogen concentrations closely during future months.

Note that the dashed magenta line has been slightly modified since the DMS Committee's prior monthly review to incorporate one additional landfill gas well (CV-2469). However, as presented on the Drawing included as **Attachment A,** the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Because the ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell, the Reaction Committee finds no basis to modify the Reaction Area boundary at this time. Please note the following:

- The rationale that would serve as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include:

    - LFG wellhead temperatures in excess of approximately 160 degrees Fahrenheit.

    - Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.

    - The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.

    - Accelerated settlement of the landfill surface, defined as approximately 18 inches or greater within a 60-day period, and cracks in landfill cover. This corresponds to a strain value (i.e., settlement rate) rate of 3 percent per year for areas with a 300-foot waste column depth, which we believe is a reasonable average depth in the subject area of interest.

    - First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint

(often described as “chemical-like” and distinctly different from typical LFG or landfill working face odors).

- Observations of subsurface waste conditions and characteristics as noted on borehole drilling logs for recently installed new wells and/or probes.

- Subsurface temperatures recorded at the in-situ waste temperature probes during August 2024.

There was no dissenting opinion among the Reaction Committee members regarding this monthly determination. Supporting data is presented on the Drawing included as **Attachment A.** The maximum temperature measurements recorded at the 20 in-situ waste temperature monitoring probes during August are presented in **Attachment B** in graphical format. The electronic database and recordkeeping platform enables these measurements to be downloaded into a tabular spreadsheet format, which can be submitted to the South Coast Air Quality Management District under separate cover, if requested.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

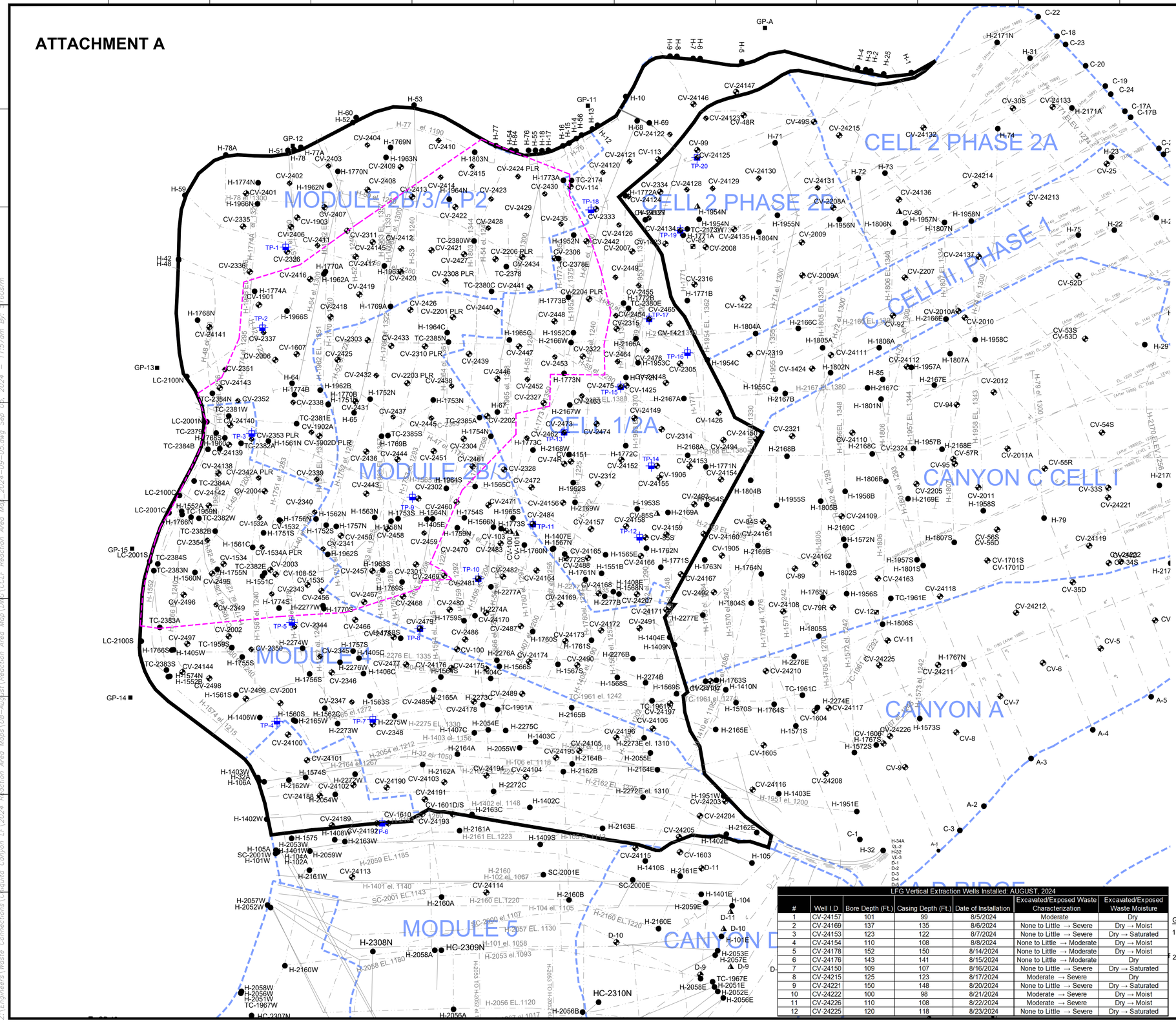
RED/PSS

cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Richard Pleus, PhD, Intertox
Srividhya Viswanathan, PE, SCS Engineers

Enclosure:

Attachment A – Reaction Area Map
Attachment B – In-Situ Waste Temperature Monitoring Probe Data

ATTACHMENT A



LEGEND

- EXISTING CELL LIMITS (APPROXIMATE)
- CV-XX EXISTING VERTICAL WELLS
- CV-XX PLR EXISTING VERTICAL WELL - PRESSURIZED LEACHATE RELEASE
- CV-XX EXISTING VERTICAL WELLS BELOW-GRADE
- H-XX EXISTING HORIZONTAL WELLS
- CV-XX EXISTING REMOTE VERTICAL WELLHEAD
- GP-XX EXISTING PERIMETER MIGRATION PROBE
- TP-XX EXISTING TEMPERATURE PROBE
- EXISTING HORIZONTAL COLLECTOR - SOLID
- EXISTING HORIZONTAL COLLECTOR - PERFORATED
- EXISTING HISTORIC HORIZONTAL COLLECTOR
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
- REACTION AREA BOUNDARY - CONDITION 9A

LFG Vertical Extraction Wells Installed: AUGUST, 2024

#	Well I.D.	Bore Depth (Ft.)	Casing Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Characterization	Excavated/Exposed Waste Moisture
1	CV-24157	101	99	8/5/2024	Moderate	Dry
2	CV-24169	137	135	8/6/2024	None to Little → Severe	Dry → Moist
3	CV-24153	123	122	8/7/2024	None to Little → Severe	Dry → Saturated
4	CV-24154	110	108	8/8/2024	None to Little → Moderate	Dry → Moist
5	CV-24178	152	150	8/14/2024	None to Little → Moderate	Dry → Moist
6	CV-24176	143	141	8/15/2024	None to Little → Moderate	Dry
7	CV-24150	109	107	8/16/2024	None to Little → Severe	Dry → Saturated
8	CV-24215	125	123	8/17/2024	Moderate → Severe	Dry
9	CV-24221	150	148	8/20/2024	None to Little → Severe	Dry → Saturated
10	CV-24222	100	98	8/21/2024	Moderate → Severe	Dry → Moist
11	CV-24226	110	108	8/22/2024	Moderate → Severe	Dry → Moist
12	CV-24225	120	118	8/23/2024	None to Little → Severe	Dry → Saturated

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE / REVISION / NO.

SHEET TITLE: REACTION AREA MAP AUGUST, 2024

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX: (562) 427-0805

ACAD FILE: -
DWN. BY: SRM/JH
CHK. BY: JH/WCH
APP. BY: WCH
PROJ. NO. 01204123.35
DSN. BY: -

DATE: 09/05/2024

SCALE: AS SHOWN

SHEET: 1

ATTACHMENT B

Solid Waste Borehole Maximum Temperature Profiles Over 6 Weeks

for July 12, 2024 to August 22, 2024

From August 16, 2024, through August 22, 2024, all temperatures recorded and presented herein have stayed stable with previous week temperatures with no sensors showing major increases or decreases in temperature within the landfill and no sensors having any anomalies, outliers, data gaps, or malfunctions. There were no recorded temperature increases in the TMP field of 20°F or greater within 48 hours or 10°F increased in a week.

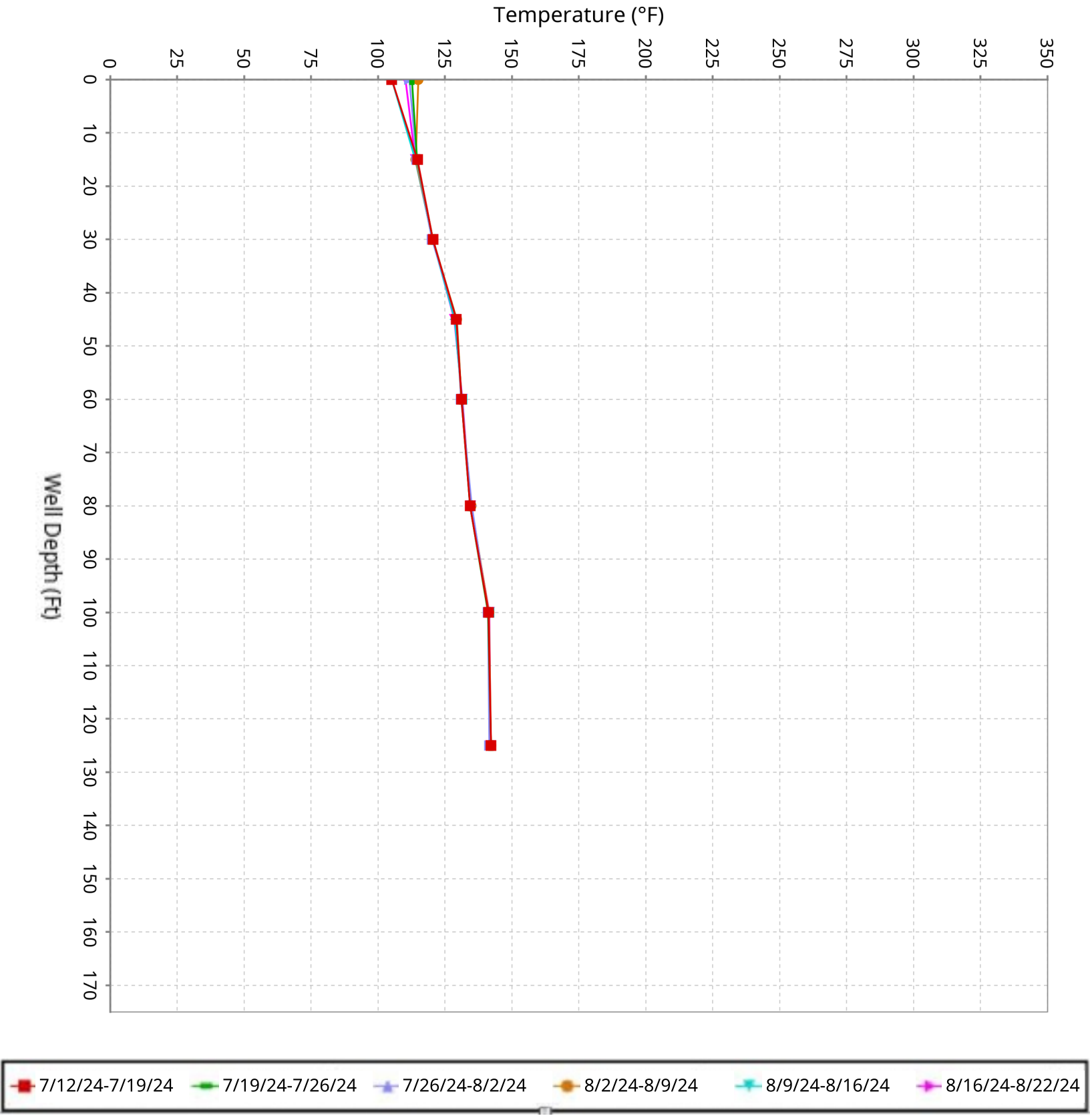
SCS ENGINEERS

07224053.00 | August 22, 2024

274 Granite Run Drive
Lancaster, PA 17601
717-550-6330

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-1

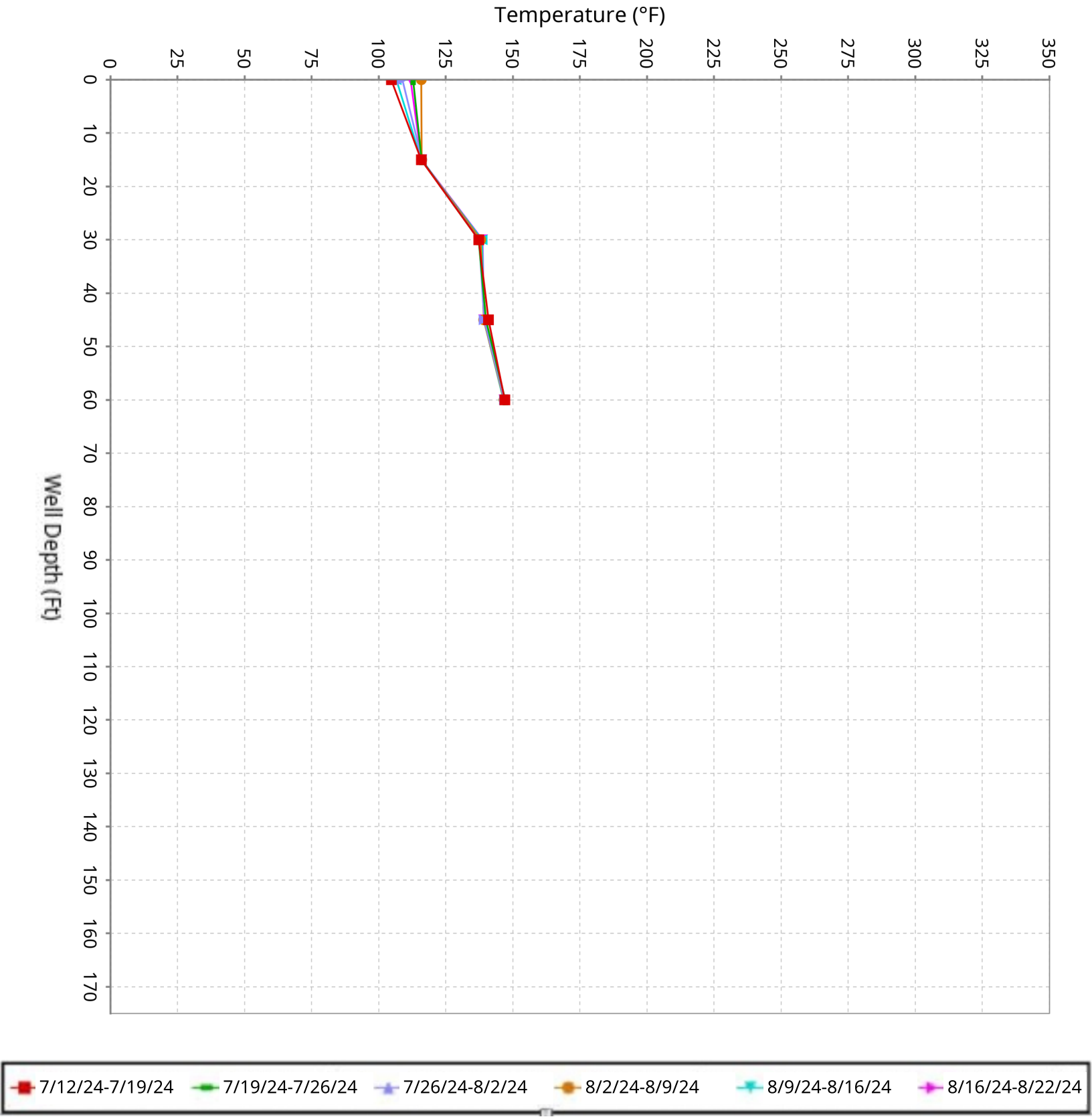
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-2

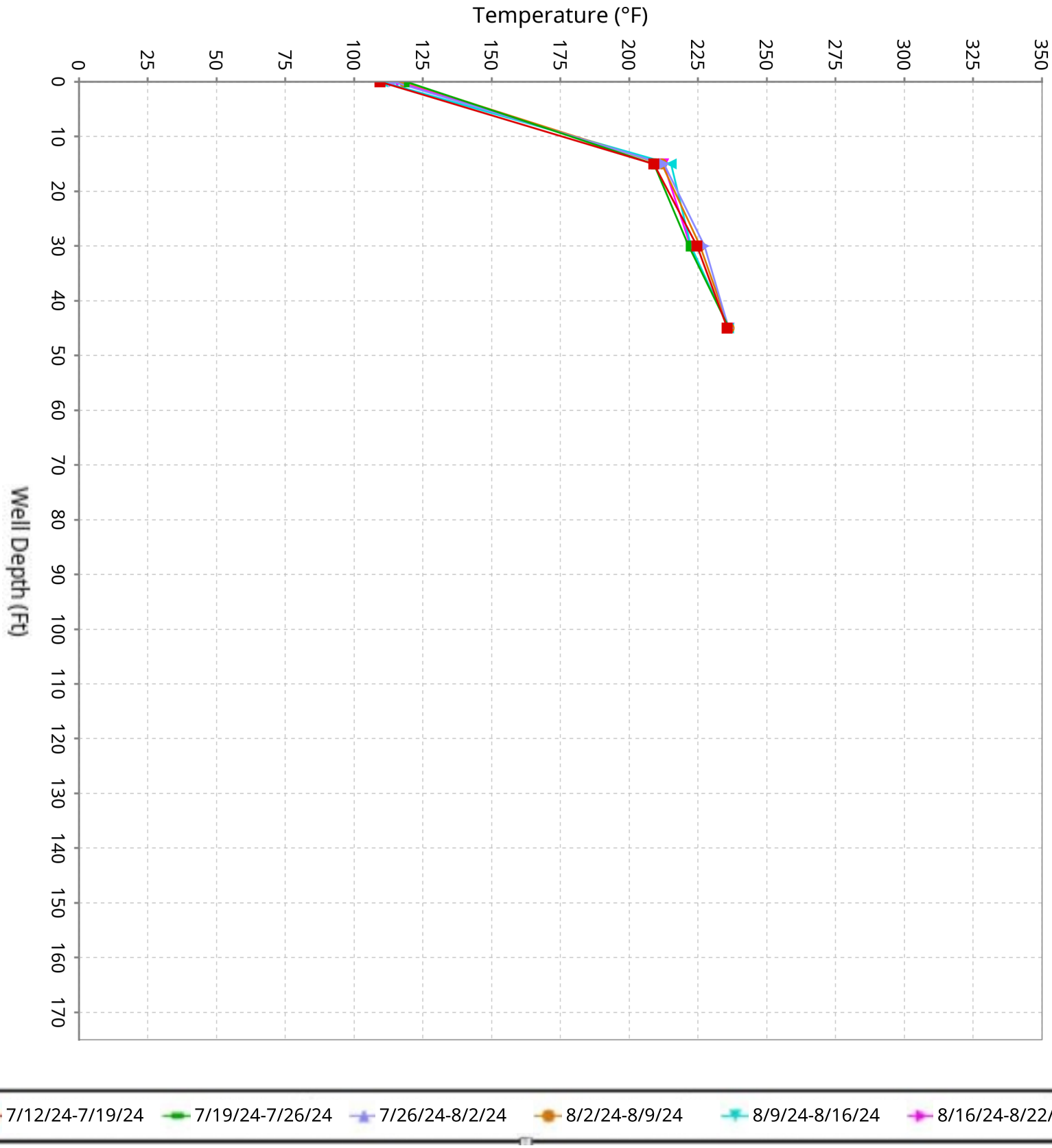
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-3

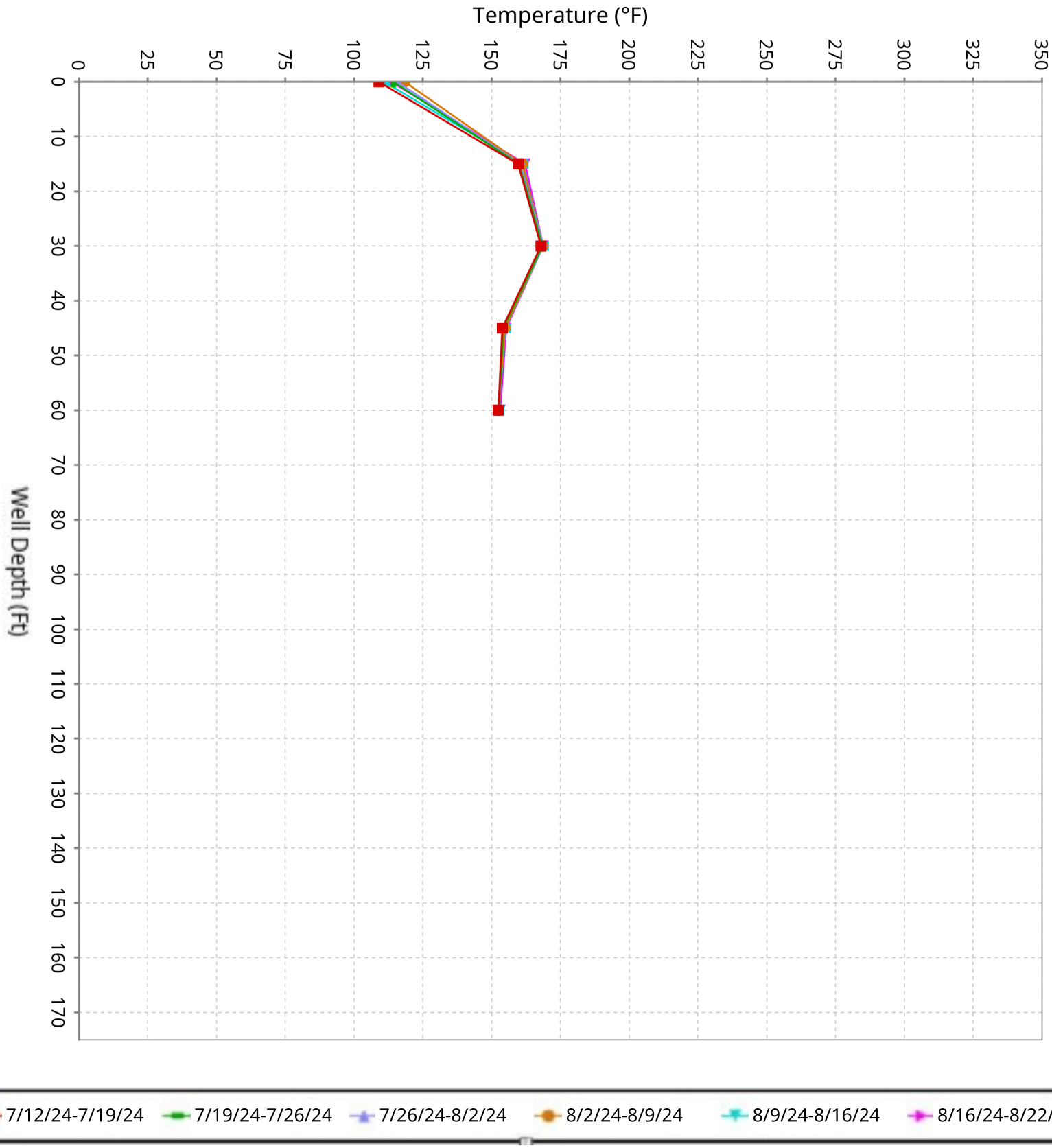
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-4

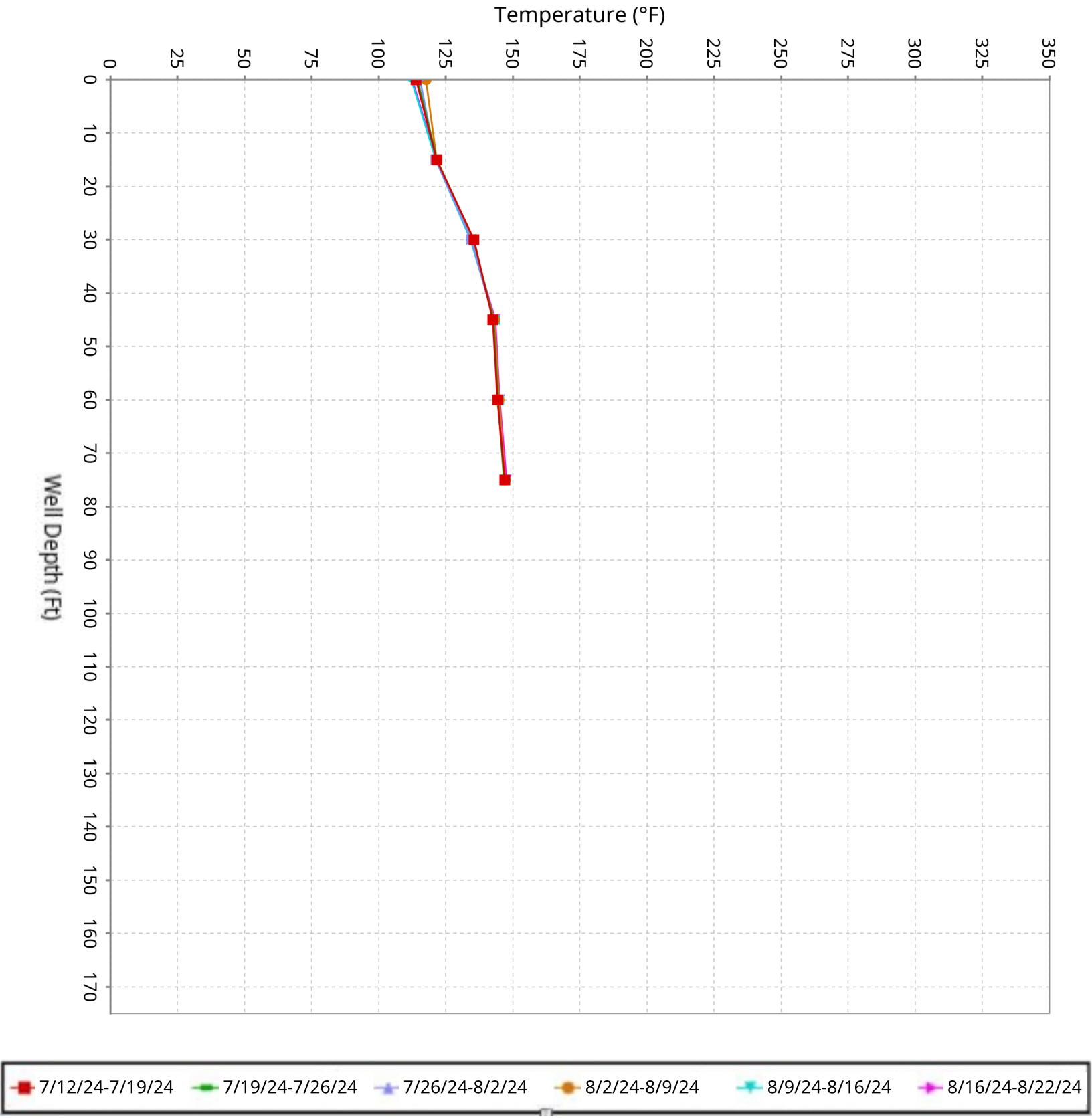
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-5

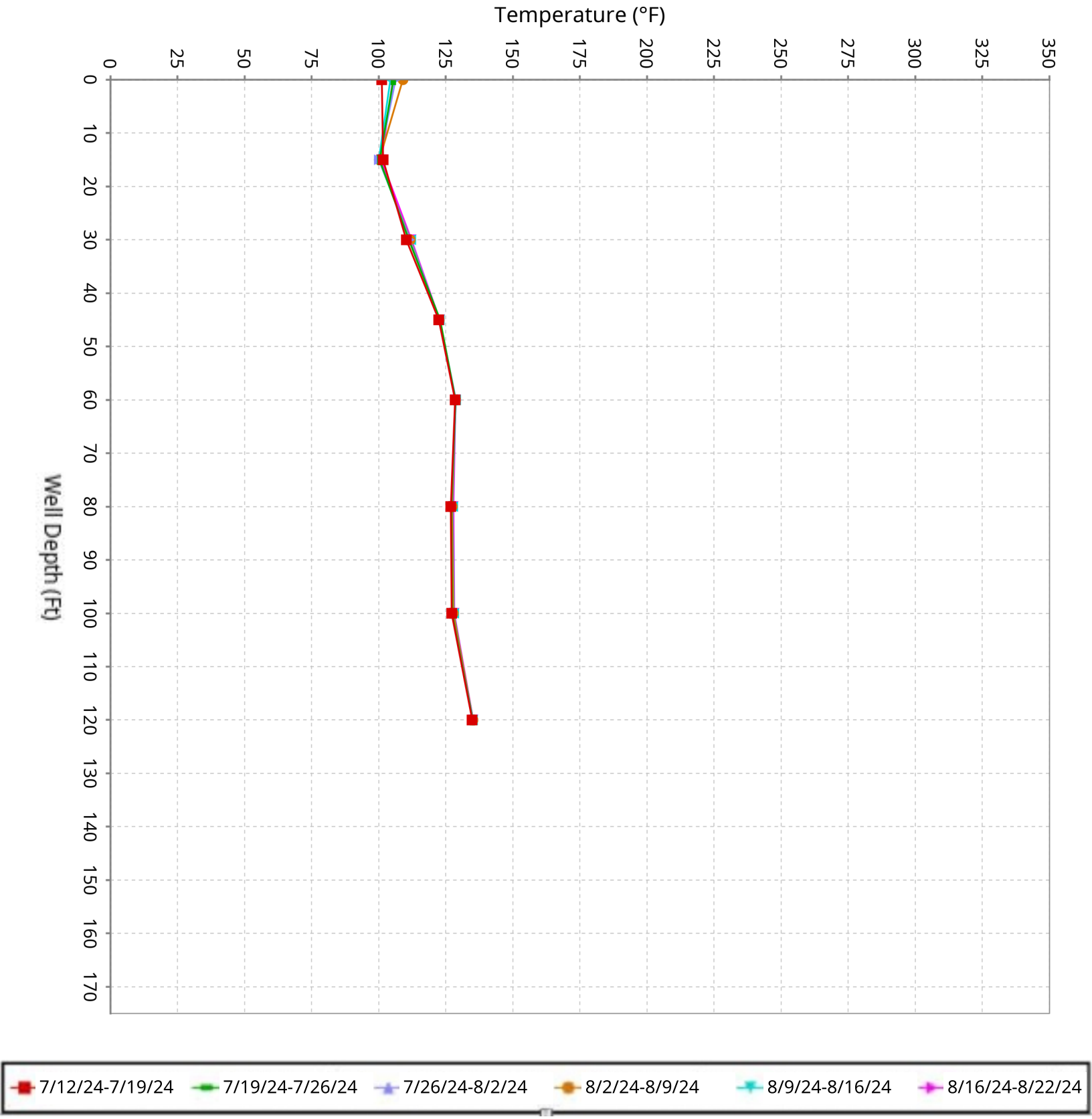
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-6

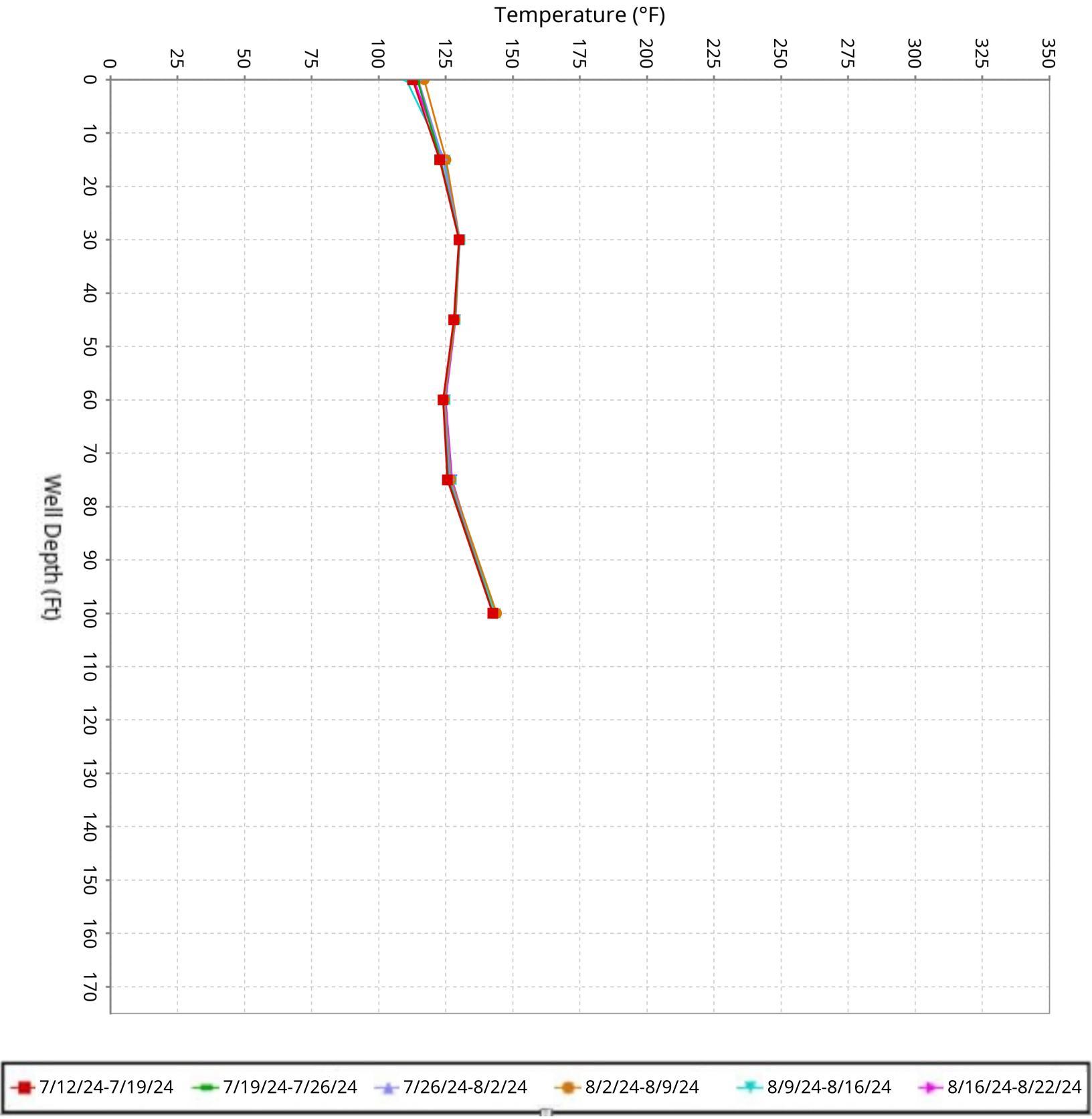
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-7

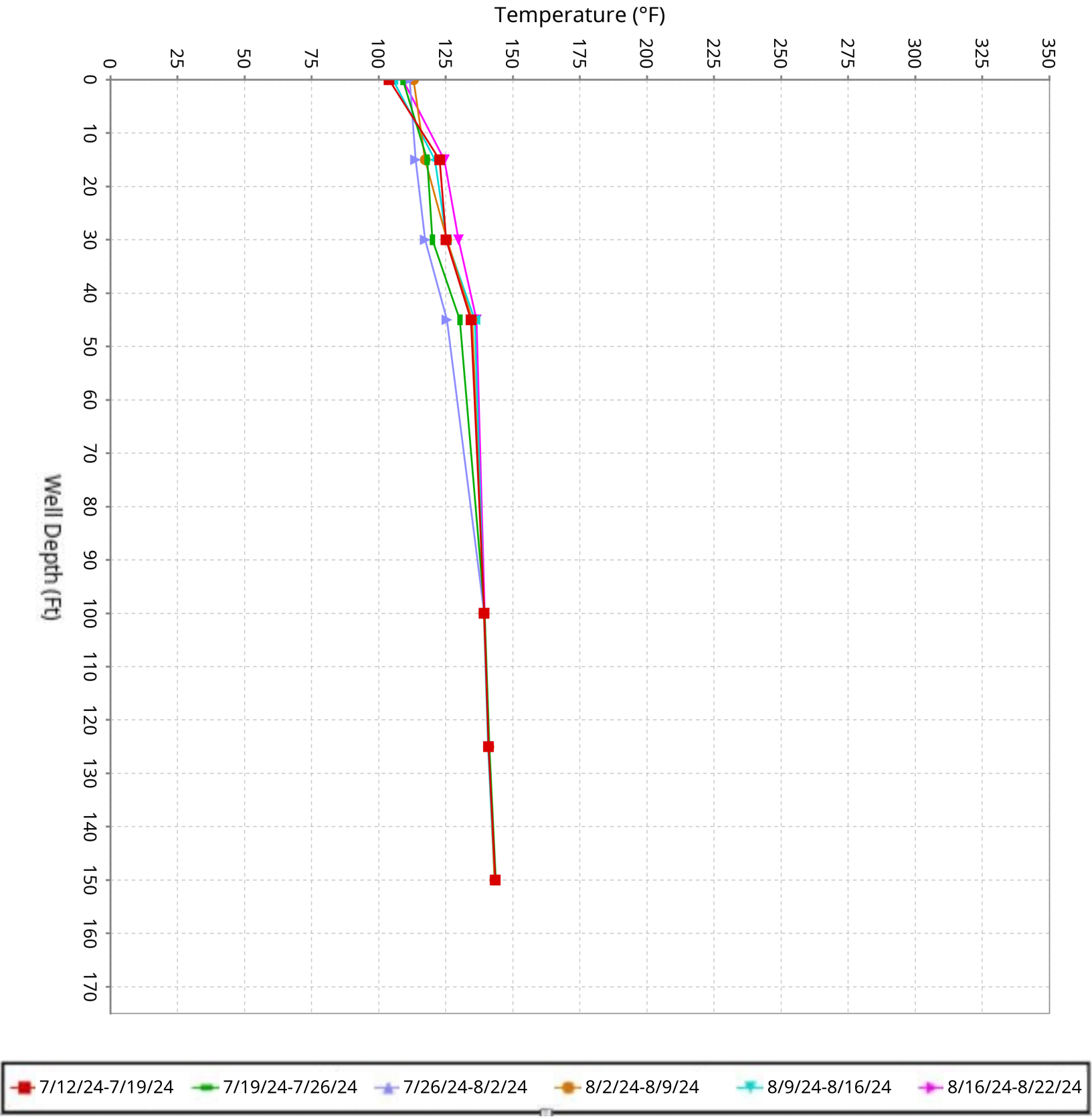
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-8

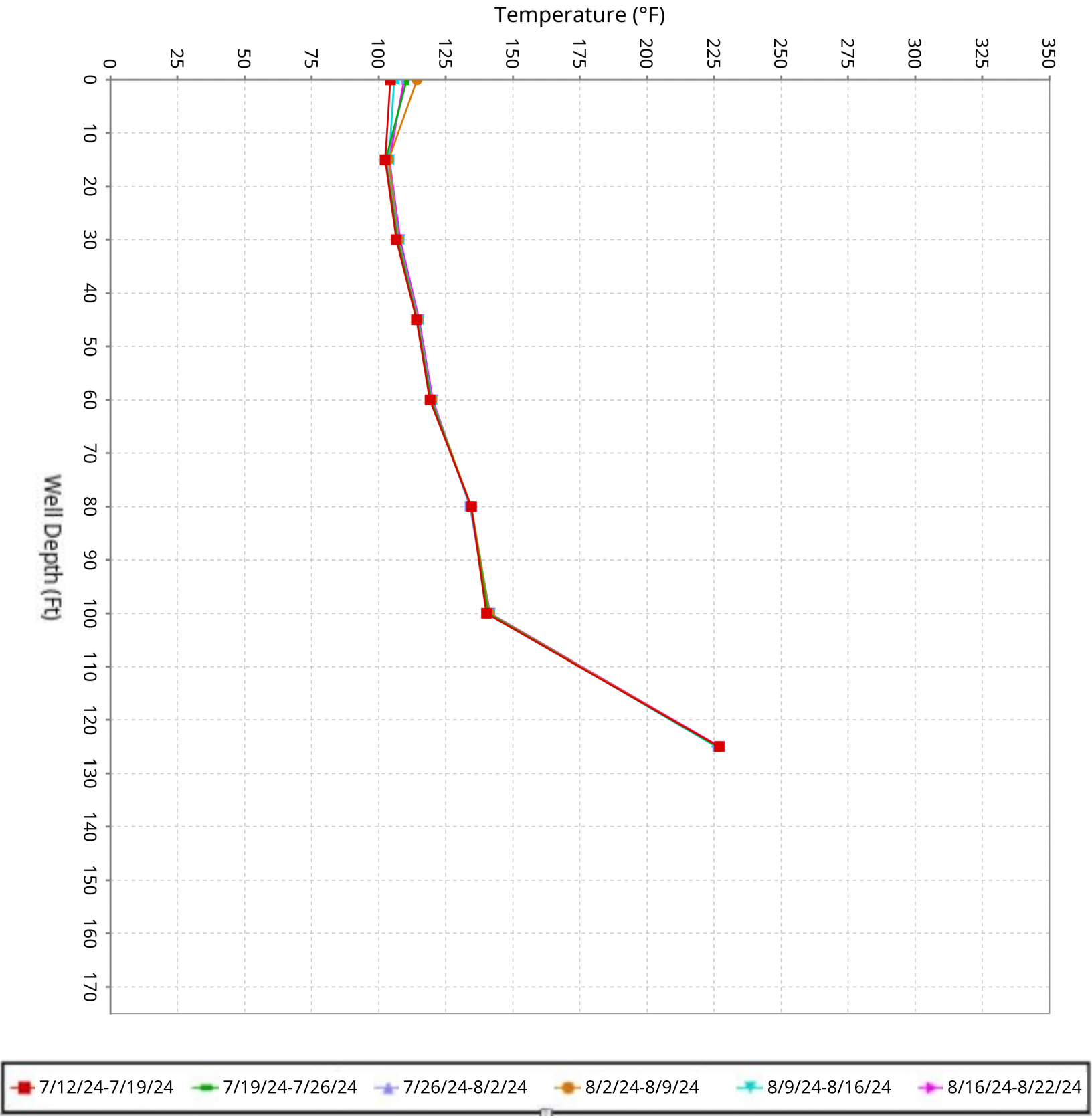
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-9

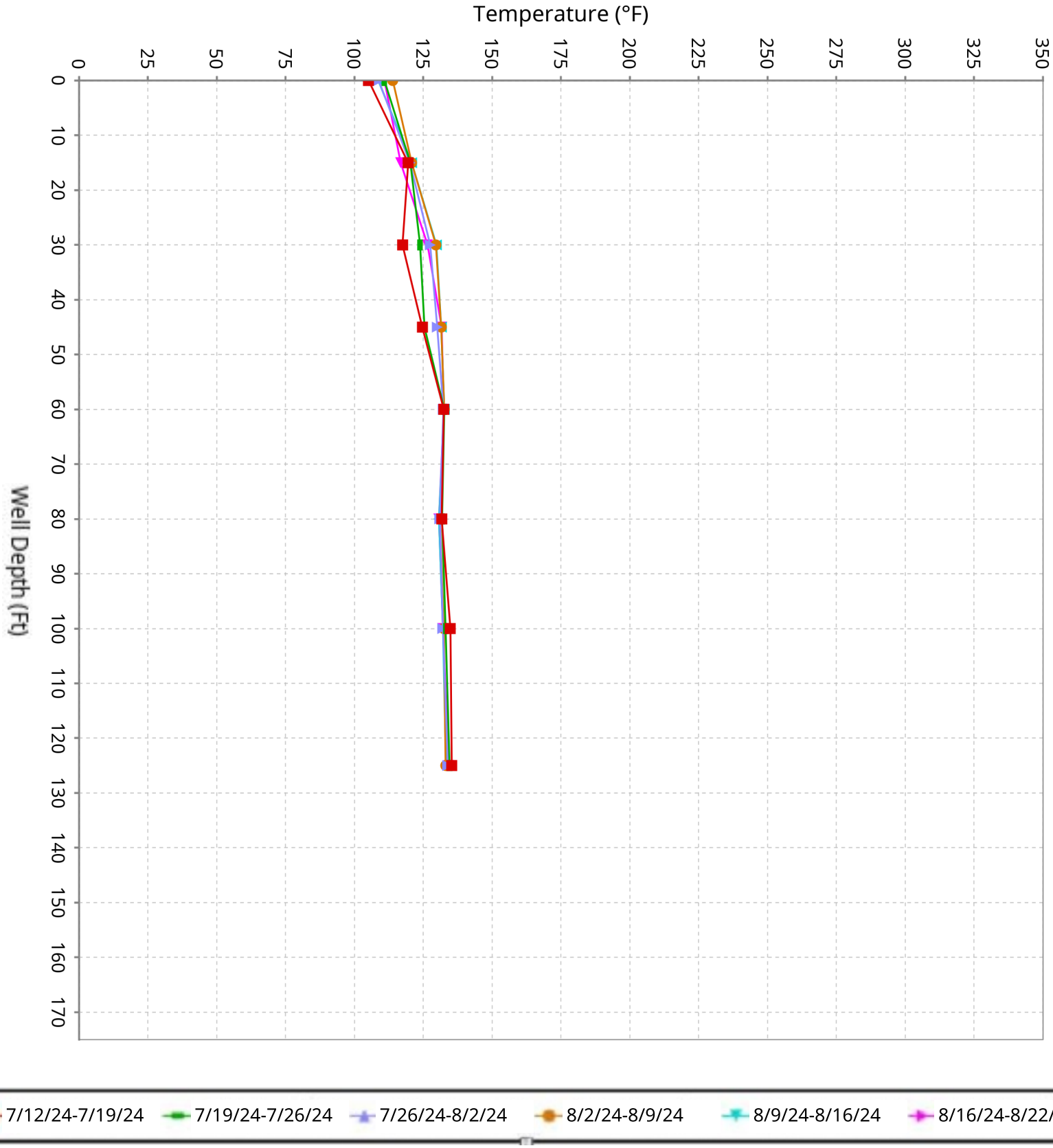
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-10

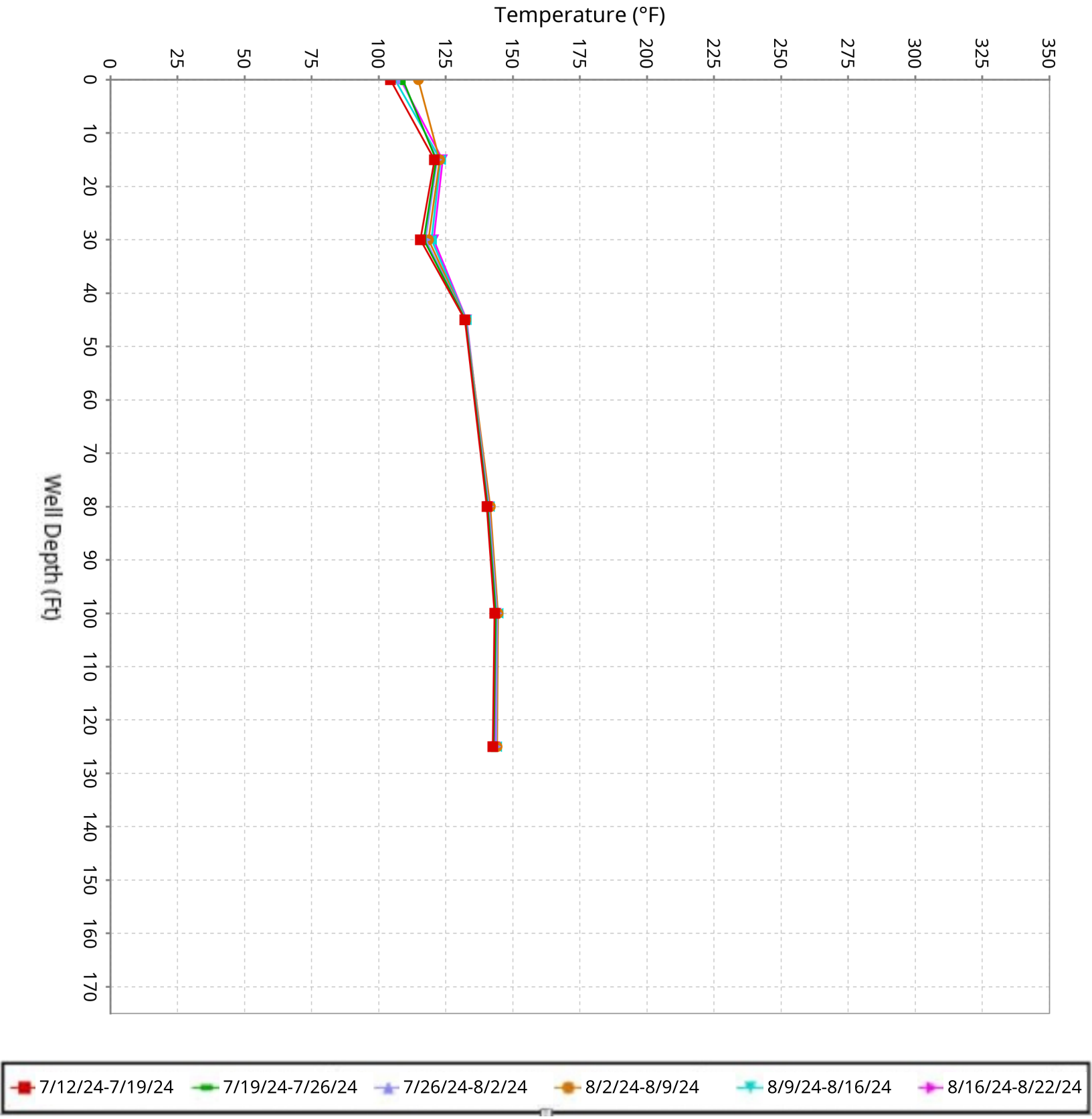
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-11

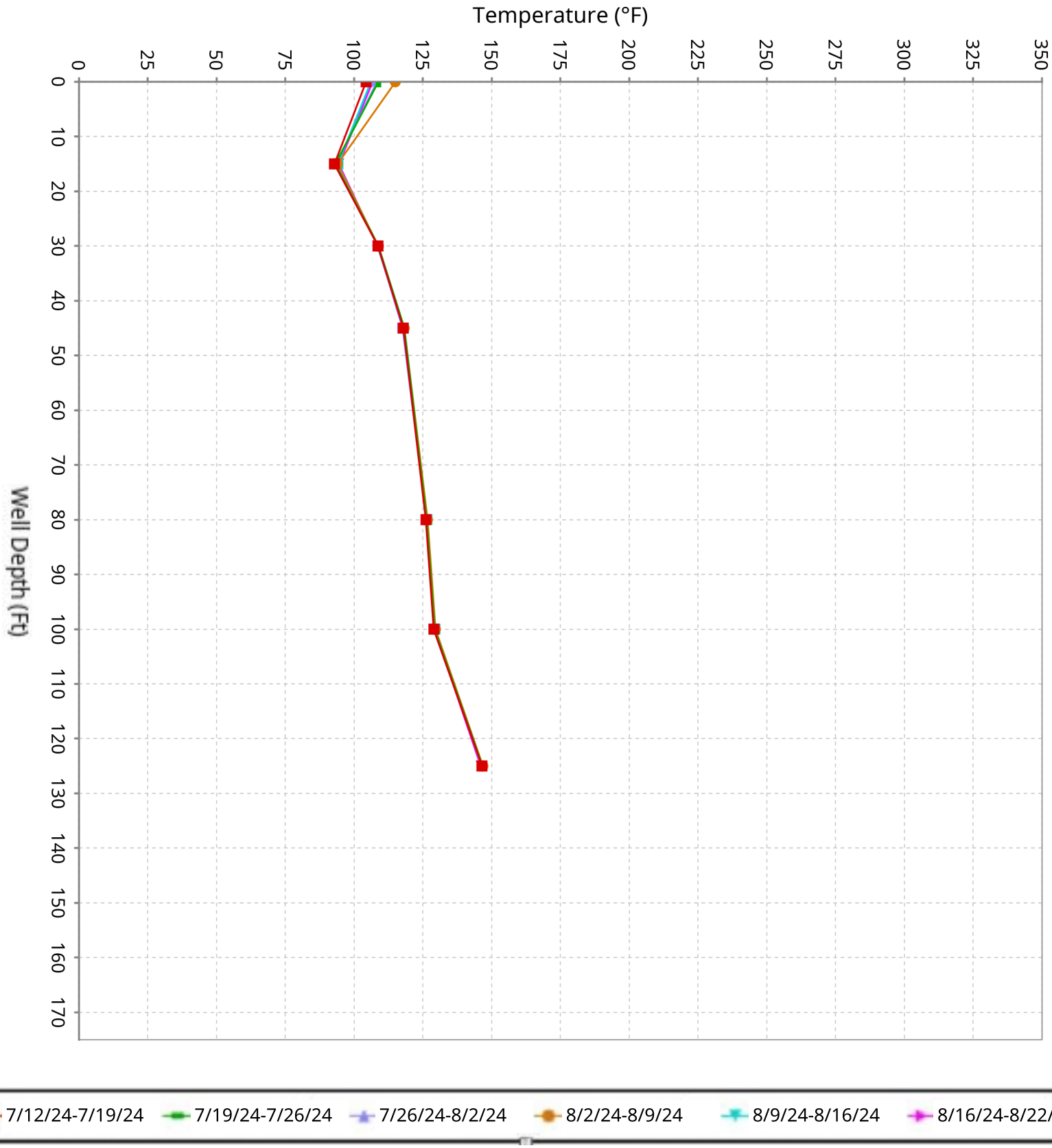
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-12

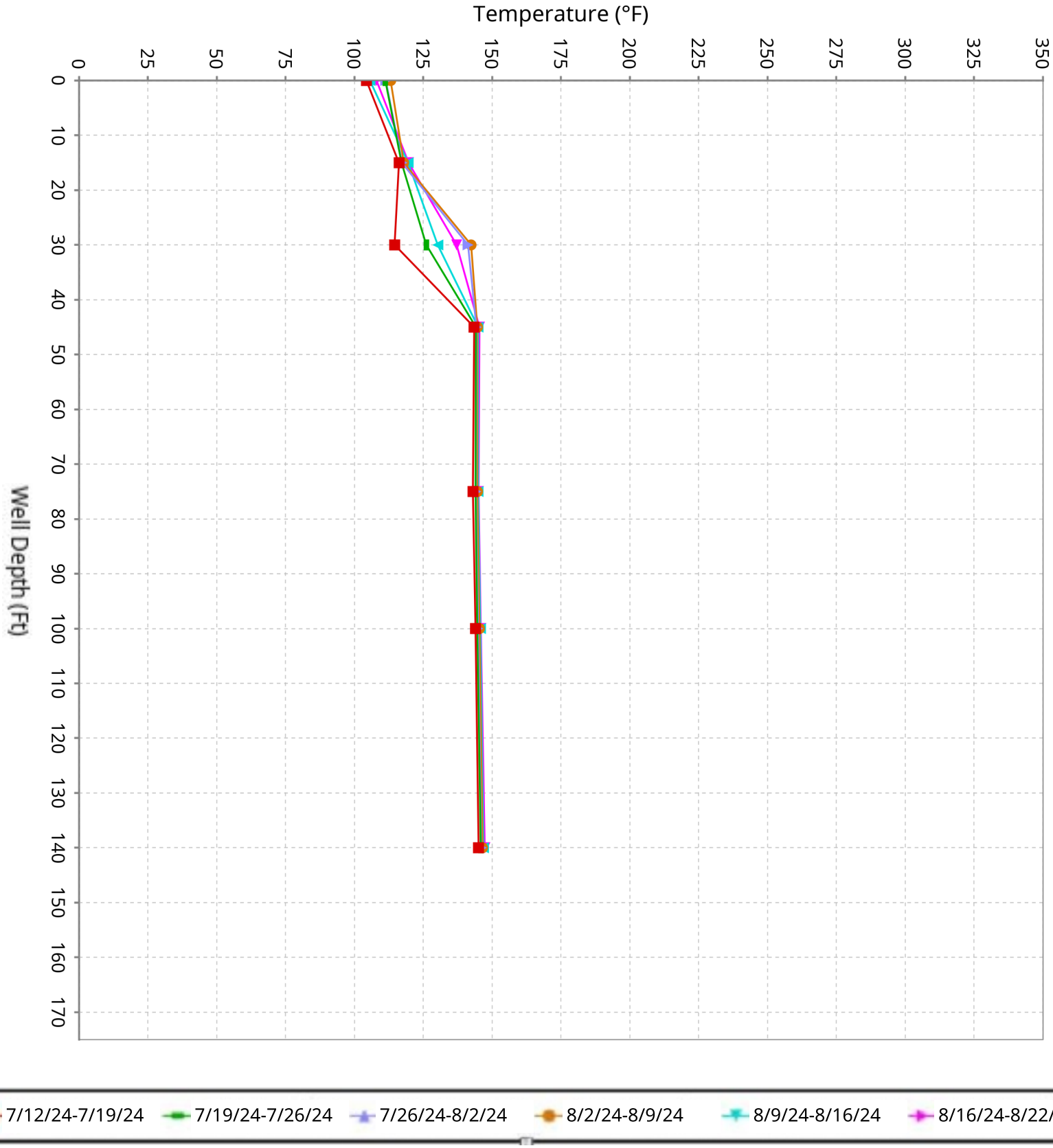
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-13

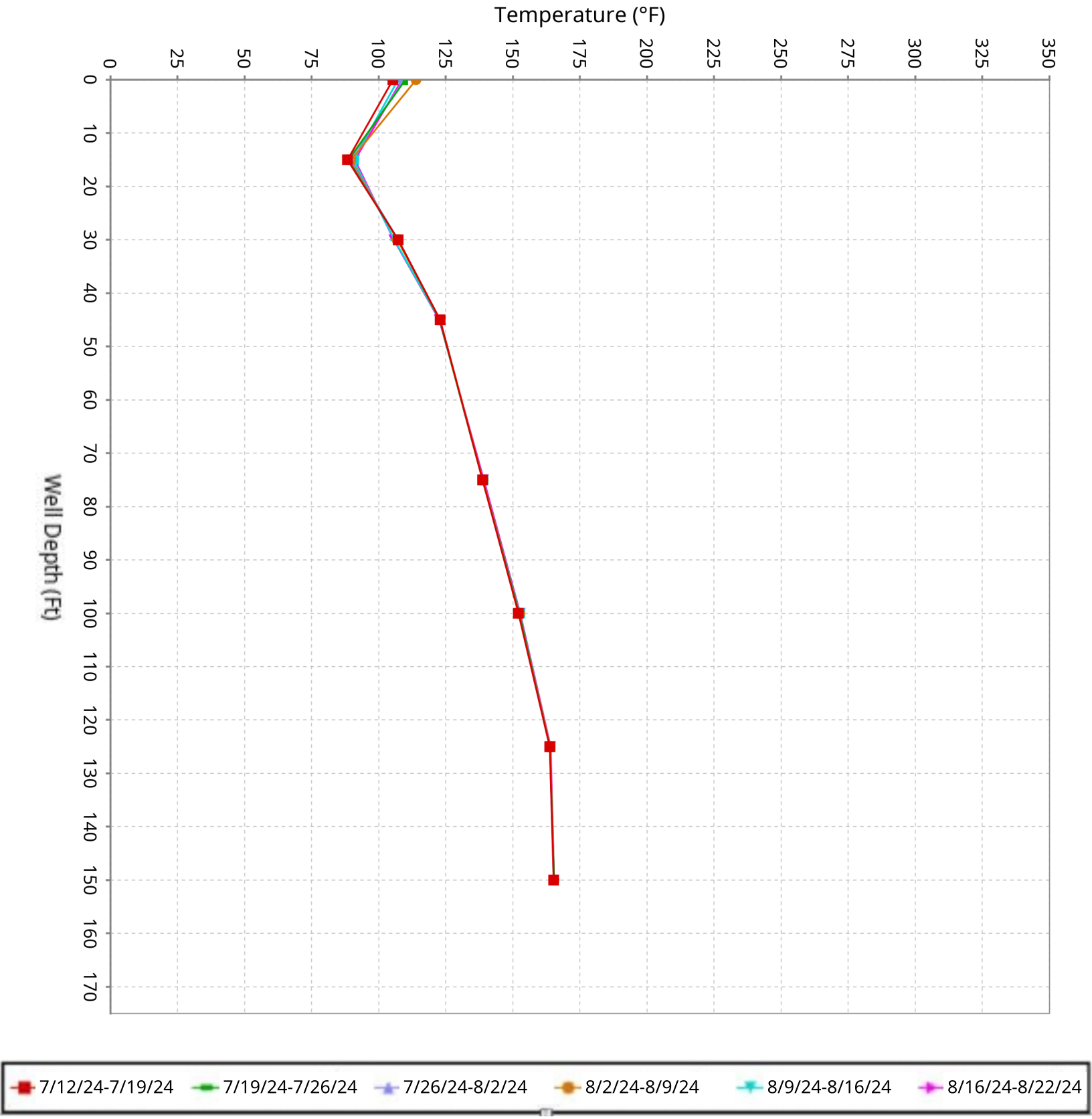
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-14

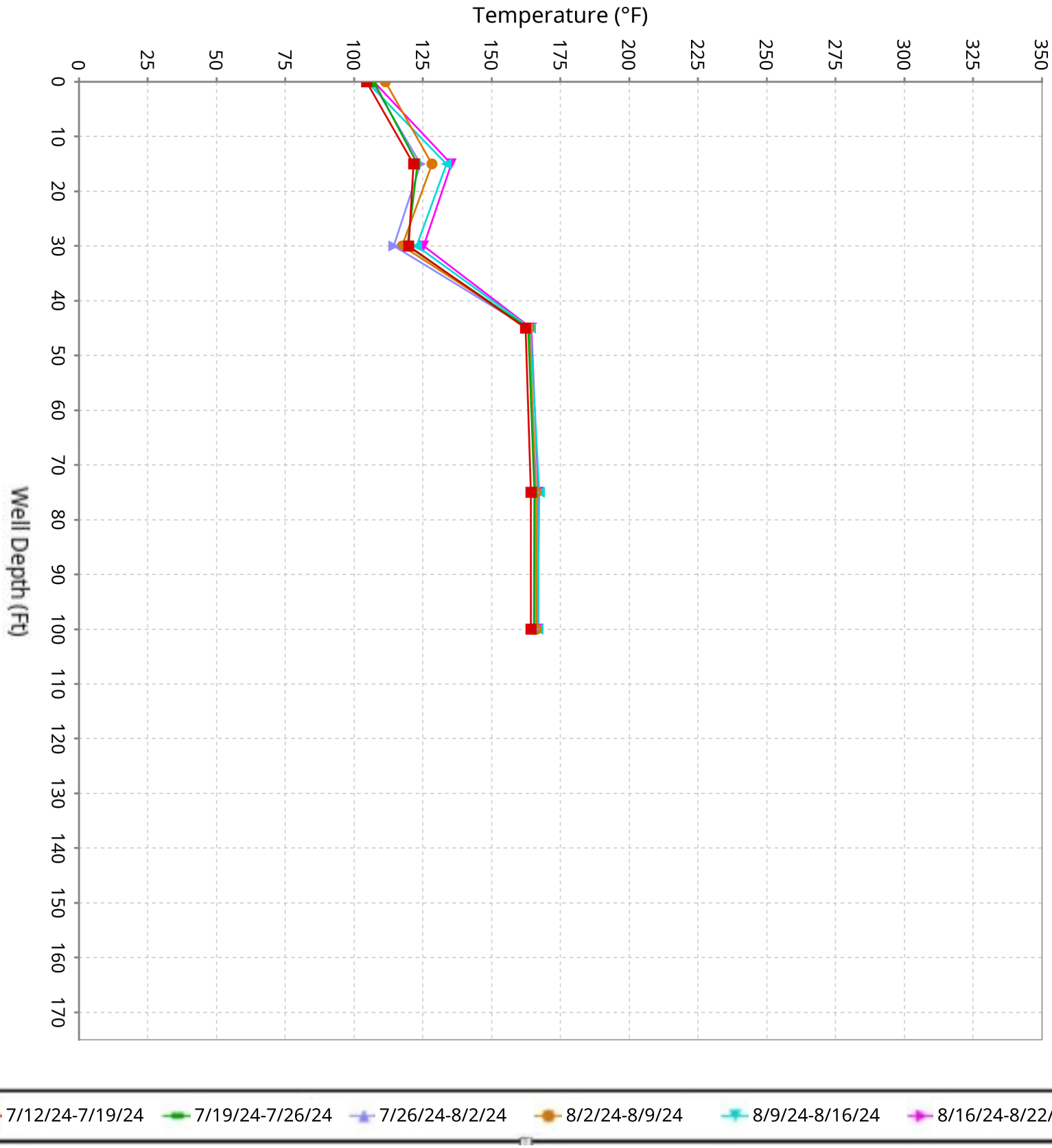
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-15

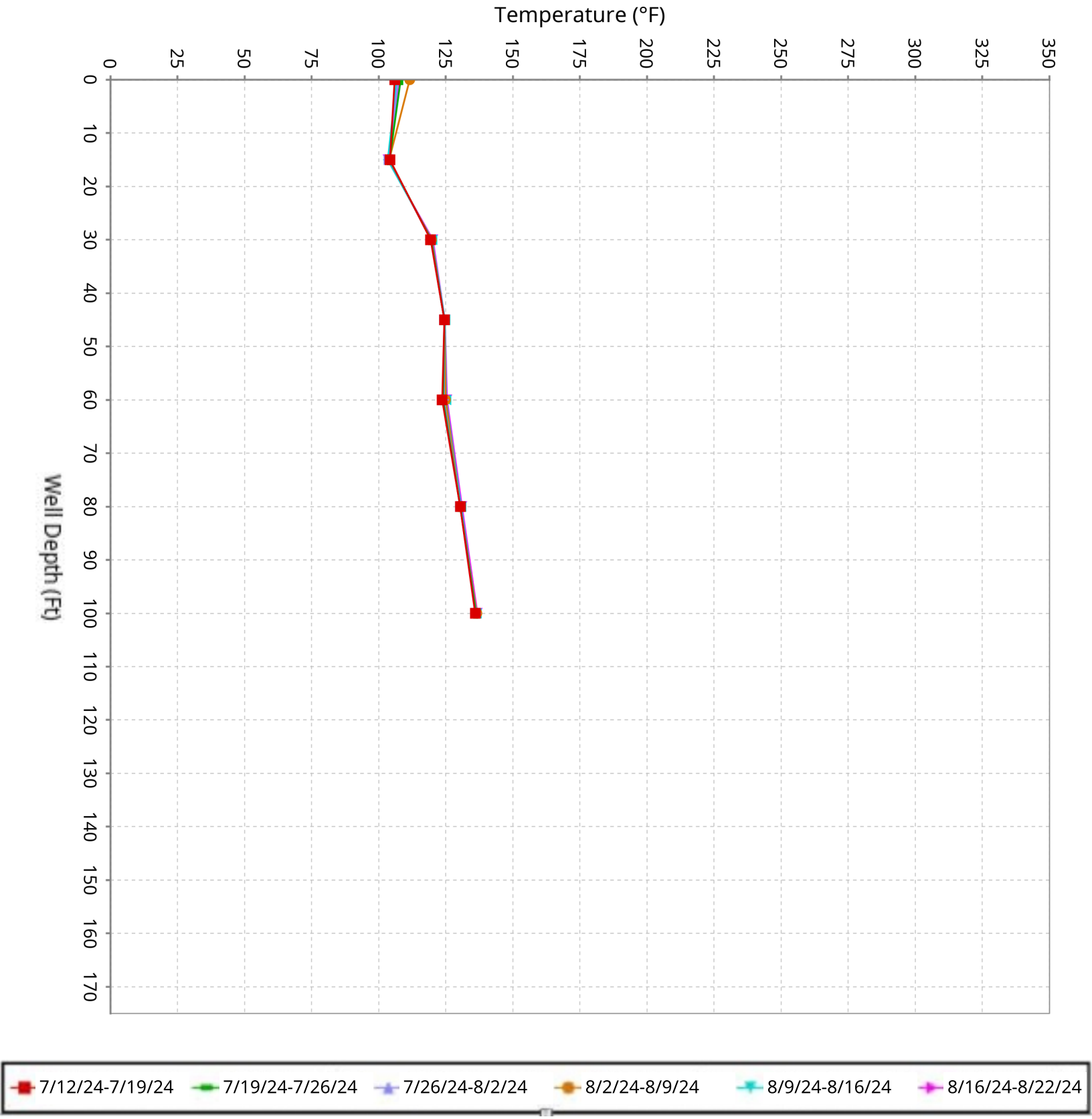
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-16

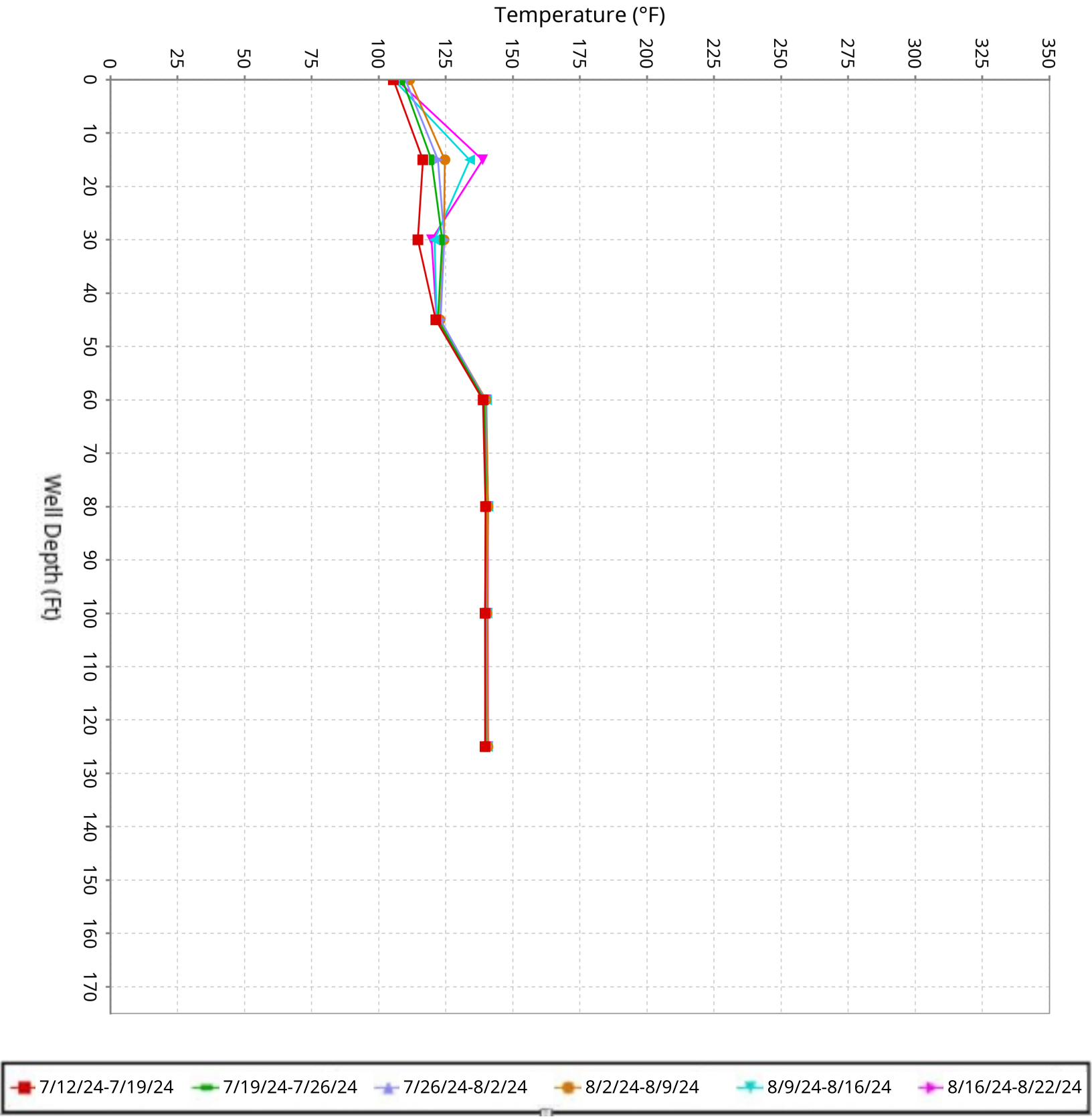
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-17

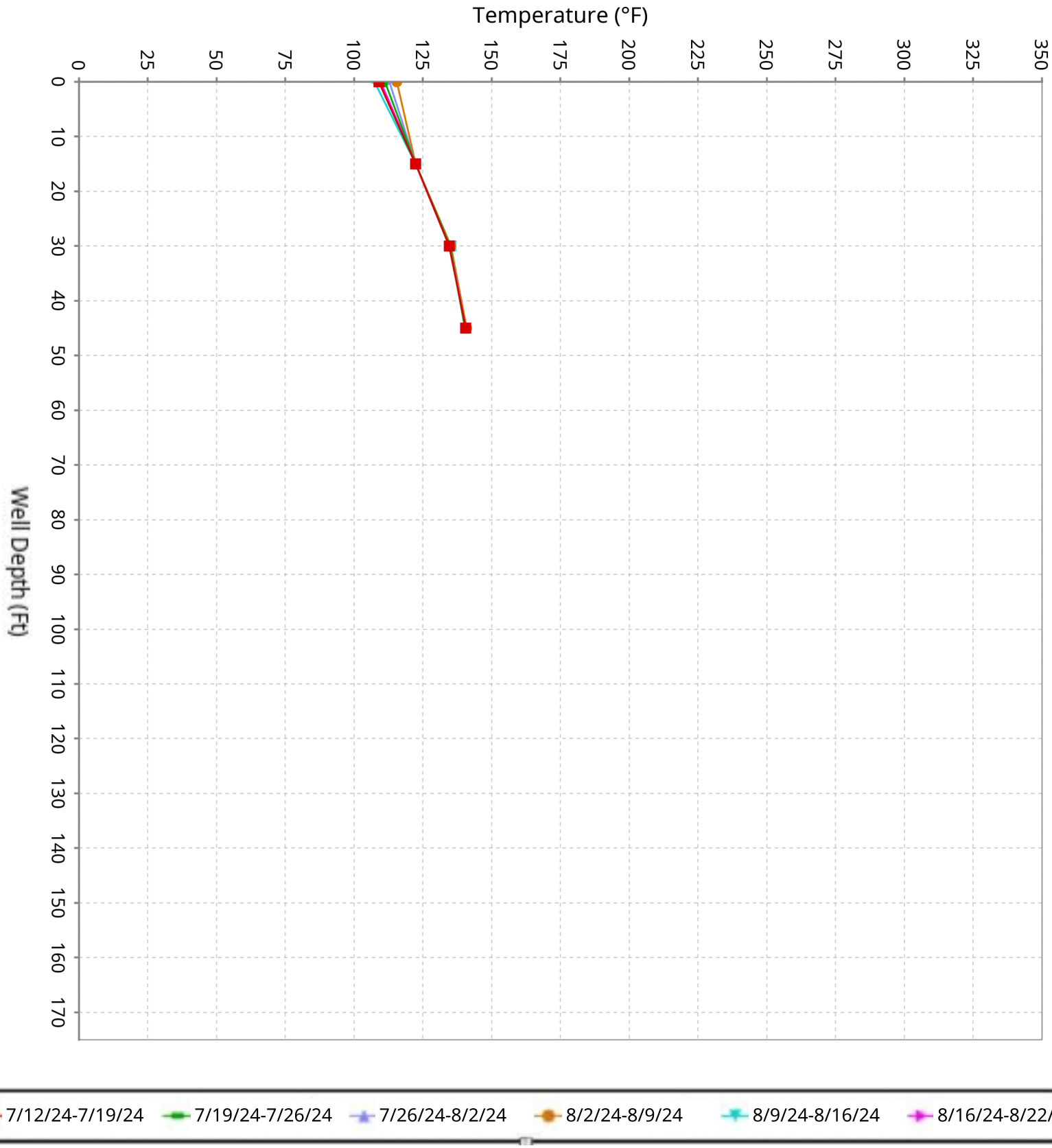
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-18

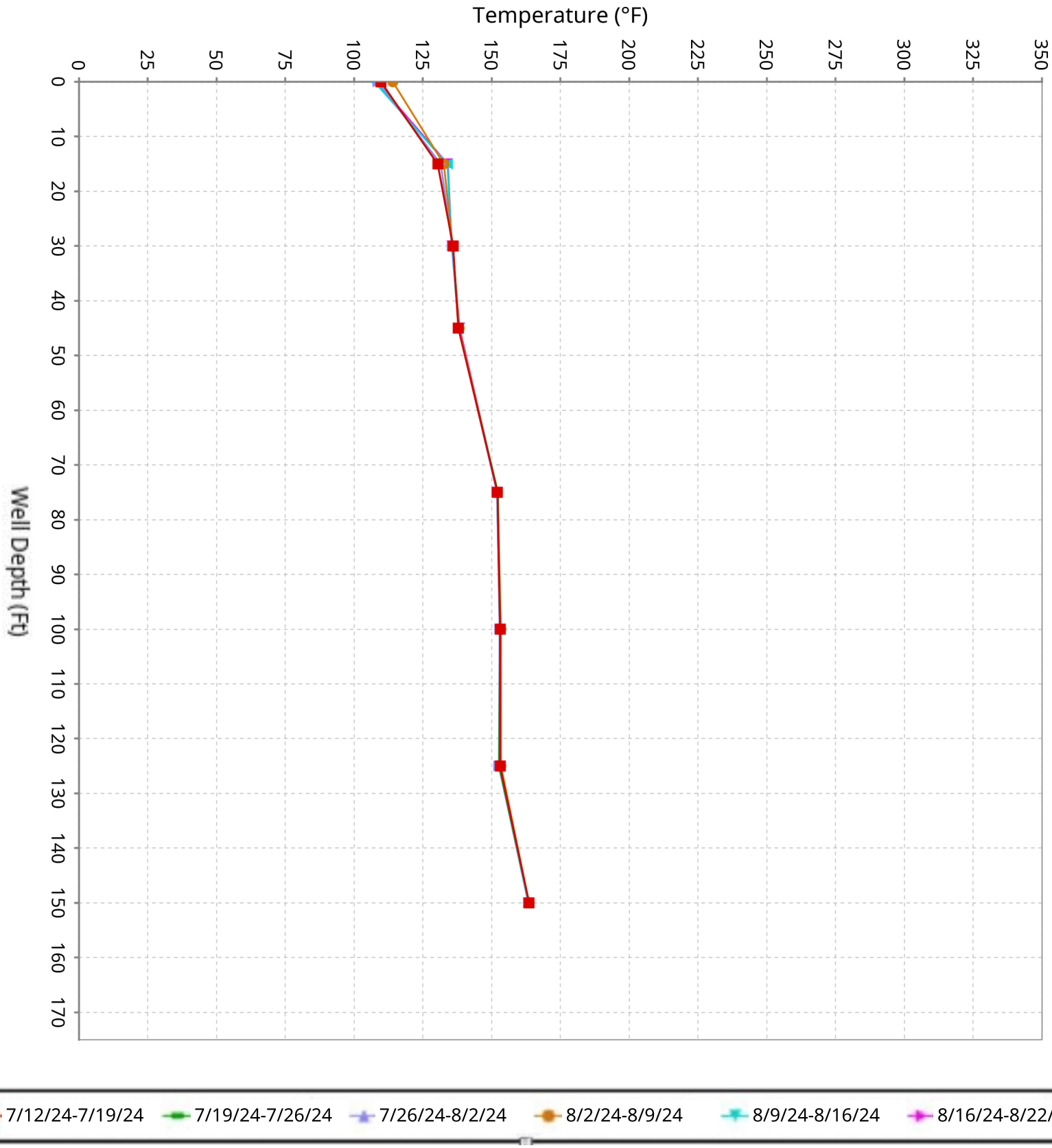
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-19

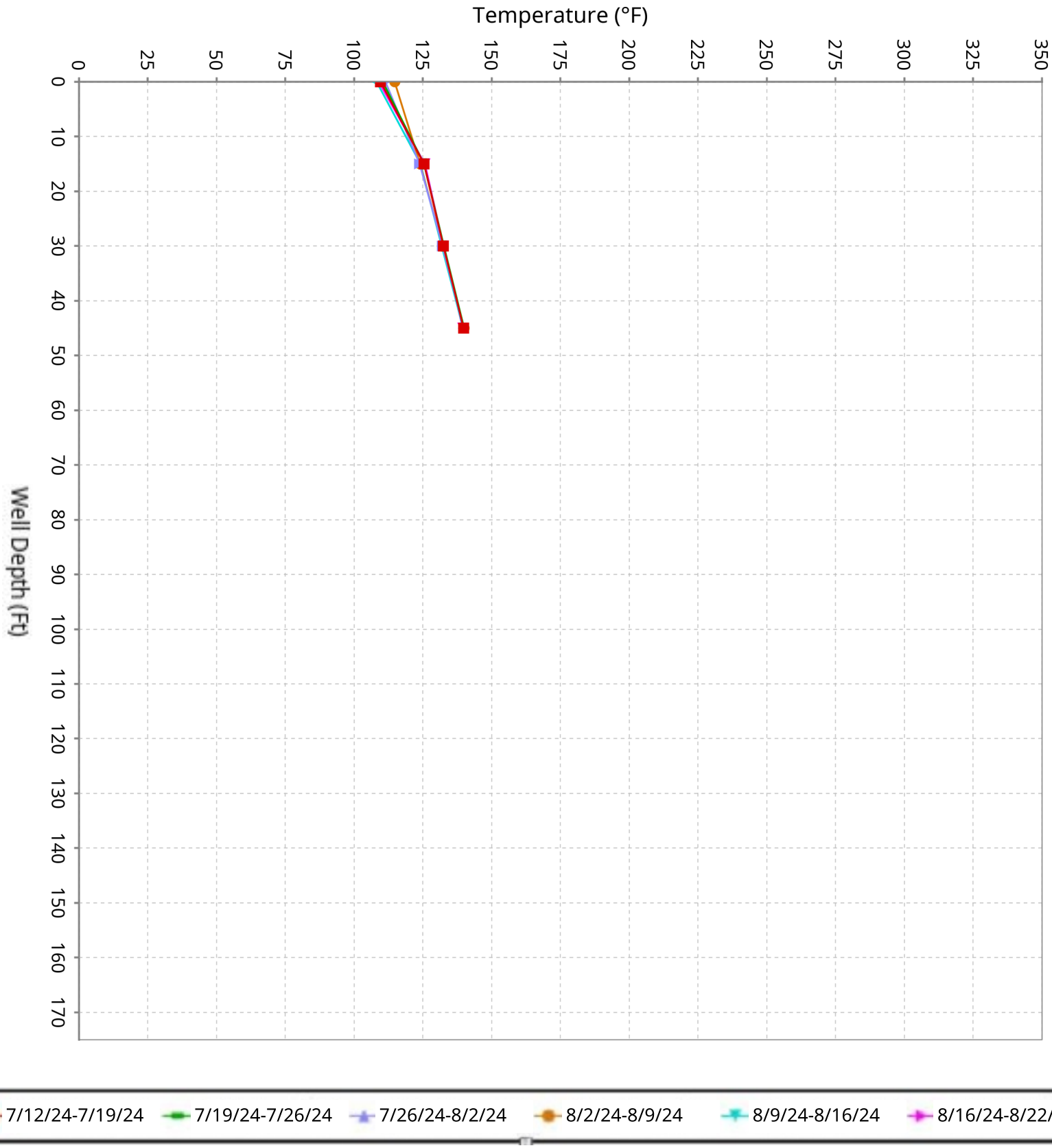
Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

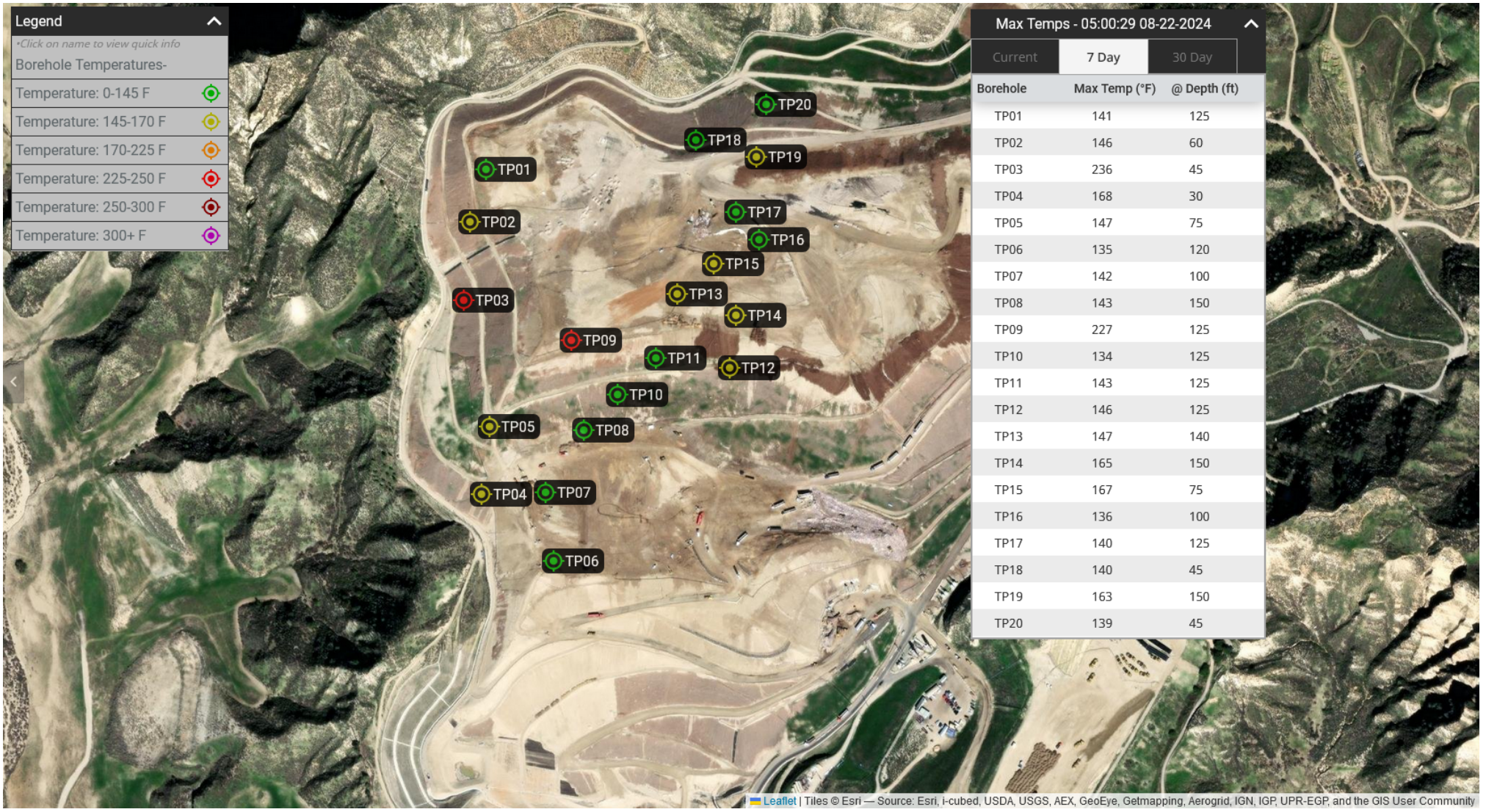
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-20

Maximum data for July 12, 2024 to August 22, 2024



SCS ENGINEERS

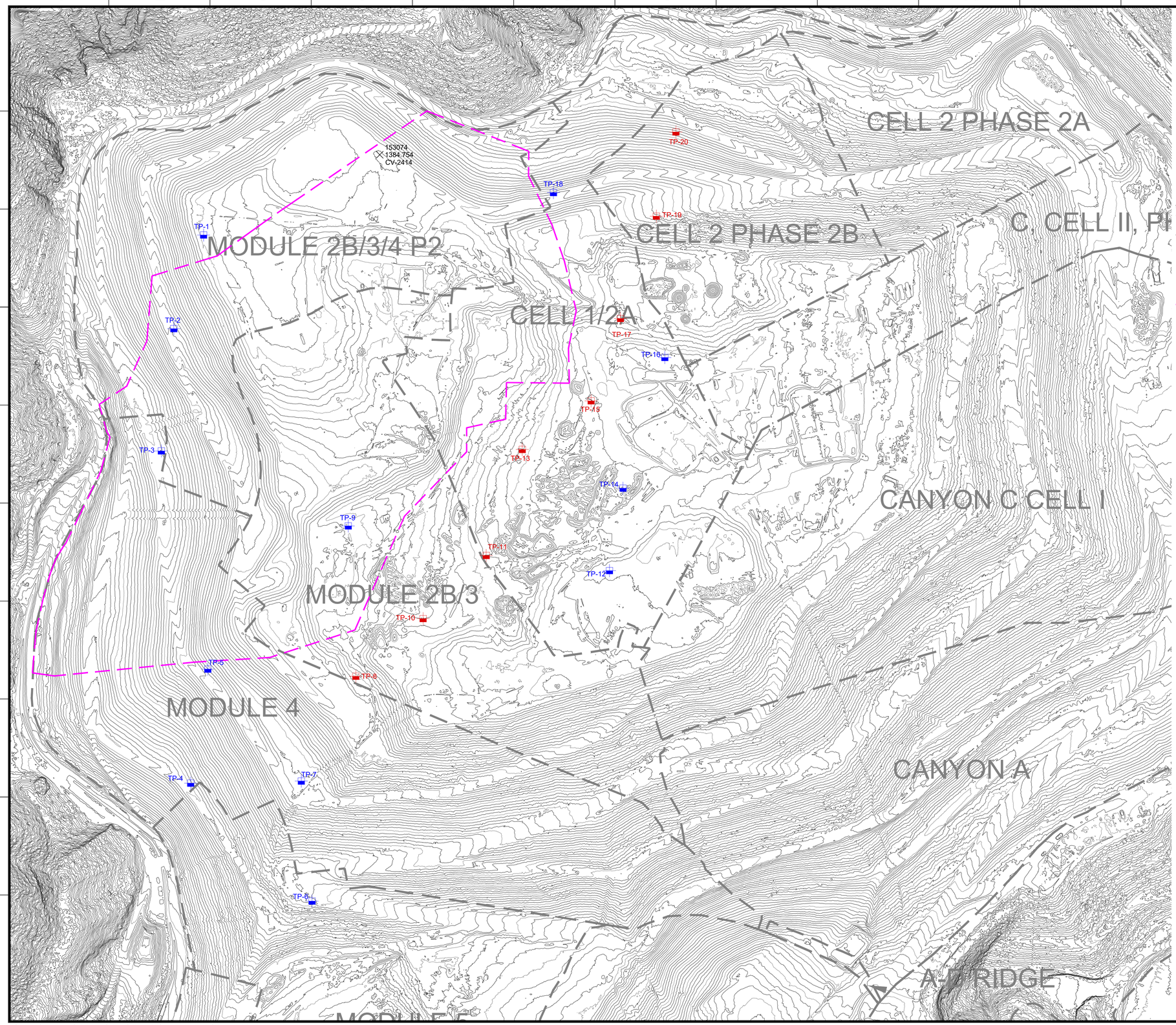
Maximum Vertical Temperature Map from Temperature Probes at Chiquita Landfill



Max Temps - 05:00:29 08-22-2024

Current | 7 Day | 30 Day

Borehole	Max Temp (°F)	@ Depth (ft)
TP01	141	125
TP02	146	60
TP03	236	45
TP04	168	30
TP05	147	75
TP06	135	120
TP07	142	100
TP08	143	150
TP09	227	125
TP10	134	125
TP11	143	125
TP12	146	125
TP13	147	140
TP14	165	150
TP15	167	75
TP16	136	100
TP17	140	125
TP18	140	45
TP19	163	150
TP20	139	45



N

GRAPHIC SCALE

130 65 0 130 260 390

SCALE: 1"=130'

LEGEND

- 1150 — EXISTING TOPOGRAPHIC CONTOUR
- EXISTING CELL LIMITS (APPROXIMATE)
- TP-XX — INSTALLED TEMPERATURE PROBES - STANDALONE
- TP-XX — INSTALLED TEMPERATURE PROBES INSTALLED WITHIN WELL CASING
- REACTION AREA BOUNDARY (APPROX) - BASED ON DATA REVIEW

GENERAL DRAWING NOTES:

1. EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN WAS PROVIDED BY PROPELLER. AERIAL PHOTOGRAPHY DATED JUNE 12, 2024.
2. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.

NO.	REVISION	DATE

SHEET TITLE: OVERALL INSTALLED TEMPERATURE PROBE SITE PLAN

PROJECT TITLE: TEMPERATURE PROBE INSTALLATION PROJECT CHIQUITA LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX. (562) 427-0805

PROJ. NO: 01204123.35 | DSN. BY: JH/SRM | DWN. BY: AEK | CHK. BY: WCH | APP. BY: WCH

ACAD FILE: ENGINEERS

DATE: 06/14/2024

SCALE: AS SHOWN

SHEET: 1

C:\Users\akarram\Desktop\Work\Chiquita\Temp Probes\2024 CCLF Temp.Probe AK_2024-06-14.dwg Jun 14, 2024 - 11:49am By: akarram

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT B TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

October 7, 2024
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Modified Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of September 2024, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 10/3/24. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2, as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line.

The Reaction Committee reviewed the temperature measurements recorded during September 2024 by the in-situ temperature monitoring probes. Three (3) of the twenty (20) probes (TP-2, 3, and 9) are located within the estimated extent of ETLF conditions (dashed magenta line), and thirteen (13) probes are positioned adjacent to (within 200 feet) of this boundary. Similar to August, there continued to be some slight variability in temperatures at the shallow depths (15-foot and 30-foot depth) in select thermocouples, such as TP-8, TP-10, TP-13, and TP-15. The variability involved both temperature increases and temperature decreases for most thermocouples exhibiting variability. The Committee does not believe this variability constitutes a definitive trend since the temperatures for each thermocouple exhibiting variability remained comparably consistent. The temperatures measured at other intervals within these probes remained unchanged. The Committee does not believe these temperature fluctuations in relatively shallow depths signal an expansion of the reaction in these areas. As noted previously, the extensive dewatering efforts that occurred during September may be contributing to subtle temperature fluctuations observed at shallow depth intervals in select temperature probes. Similar to our analysis of data recorded during the previous months, it is the Committee's opinion that the temperatures recorded by the 13 probes outside of the boundary during September 2024 are not indicative of a subsurface reaction and do not substantiate a decision to expand the boundary of the reaction area at this time. (Note that TP-6 was offline in September due to waste placement operations.)

The Reaction Committee also evaluated the concentration of hydrogen in landfill gas (LFG) during September 2024. Recall that certain wells positioned to the south and east of the reaction area boundary (where dewatering pumping was reactivated) had demonstrated some increased hydrogen

content in the LFG during the Reaction Committee's review of the data in previous months, specifically May, July and August 2024; however, some of these wells have not sustained these hydrogen concentrations. The Reaction Committee noted in its review of the previous months' data that these wells did not exhibit elevated temperatures, such that there was no evidence of the increased heat that is typical with ETLF conditions present at these wells. The September 2024 data indicate the same situation where select vertical wells positioned to the south and east outside the reaction area boundary exhibit hydrogen concentrations over 2%; however, similar to the previous data, none of the wells that exhibited some increased hydrogen content in the LFG during September are demonstrating atypical heat present. The Committee suspects this increased hydrogen content may be attributed to wells being located adjacent to an existing horizontal well and they are believed to be intercepting gas collected from within the reaction area by horizontal wells in close proximity. Also, the extensive dewatering efforts that occurred during September may be contributing to movement of LFG with elevated hydrogen into adjacent areas. Many wells positioned between these wells exhibiting hydrogen during September do not contain hydrogen greater than 2%, which further suggests that ETLF conditions are not expanding south and east of the delineated boundary. Accordingly, the Reaction Committee does not believe an adjustment to the boundary of the reaction area is merited at this time. The Reaction Committee will continue to monitor LFG hydrogen concentrations closely during future months.

As presented on the Drawing included as **Attachment A**, the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Because the ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell, the Reaction Committee finds no basis to modify the Reaction Area boundary at this time. Please note the following:

- The rationale that would serve as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include:

    - LFG wellhead temperatures in excess of approximately 160 degrees Fahrenheit.

    - Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.

    - The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.

    - Accelerated settlement of the landfill surface, defined as approximately 18 inches or greater within a 60-day period, and cracks in landfill cover. This corresponds to a strain value (i.e., settlement rate) rate of 3 percent per year for areas with a 300-foot waste column depth, which we believe is a reasonable average depth in the subject area of interest.

    - First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint

(often described as “chemical-like” and distinctly different from typical LFG or landfill working face odors).

- Observations of subsurface waste conditions and characteristics as noted on borehole drilling logs for recently installed new wells and/or probes.

- Subsurface temperatures recorded at the in-situ waste temperature probes during September 2024.

There was no dissenting opinion among the Reaction Committee members regarding this monthly determination. Supporting data is presented on the Drawing included as **Attachment A.** The maximum temperature measurements recorded at the 20 in-situ waste temperature monitoring probes during September are presented in **Attachment B** in graphical format. The electronic database and recordkeeping platform enables these measurements to be downloaded into a tabular spreadsheet format, which can be submitted to the South Coast Air Quality Management District under separate cover, if requested.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

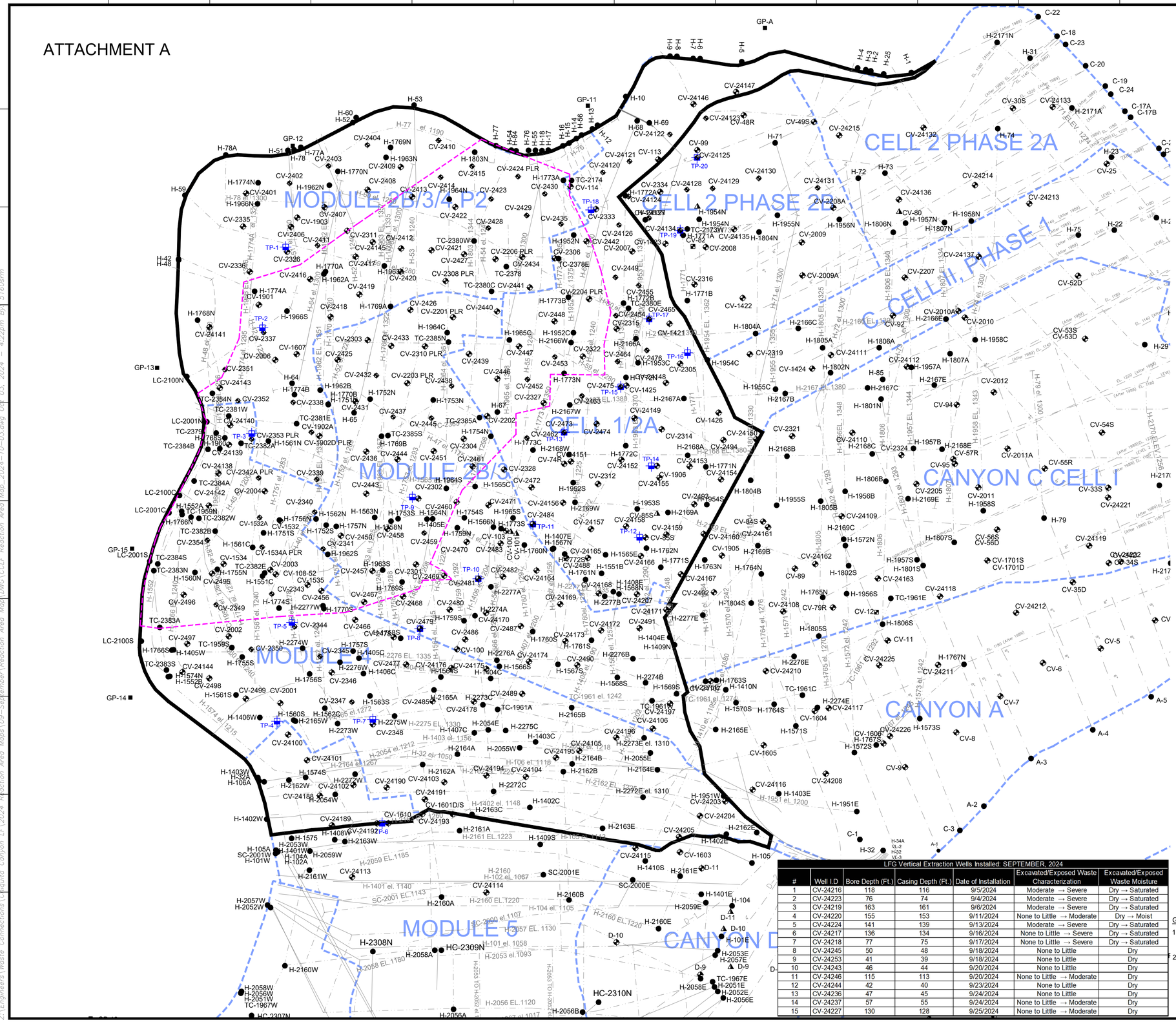
RED/PSS

cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Richard Pleus, PhD, Intertox
Srividhya Viswanathan, PE, SCS Engineers

Enclosure:

Attachment A – Reaction Area Map
Attachment B – In-Situ Waste Temperature Monitoring Probe Data

ATTACHMENT A



LEGEND

- EXISTING CELL LIMITS (APPROXIMATE)
- CV-XX EXISTING VERTICAL WELLS
- CV-XX PLR EXISTING VERTICAL WELL - PRESSURIZED LEACHATE RELEASE
- CV-XX EXISTING VERTICAL WELLS BELOW-GRADE
- H-XX EXISTING HORIZONTAL WELLS
- CV-XX EXISTING REMOTE VERTICAL WELLHEAD
- GP-XX EXISTING PERIMETER MIGRATION PROBE
- TP-XX EXISTING TEMPERATURE PROBE
- EXISTING HORIZONTAL COLLECTOR - SOLID
- EXISTING HORIZONTAL COLLECTOR - PERFORATED
- EXISTING HISTORIC HORIZONTAL COLLECTOR
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
- REACTION AREA BOUNDARY - CONDITION 9A

LFG Vertical Extraction Wells Installed: SEPTEMBER, 2024

#	Well I.D.	Bore Depth (Ft.)	Casing Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Characterization	Excavated/Exposed Waste Moisture
1	CV-24216	118	116	9/5/2024	Moderate → Severe	Dry → Saturated
2	CV-24223	76	74	9/4/2024	Moderate → Severe	Dry → Saturated
3	CV-24219	163	161	9/6/2024	Moderate → Severe	Dry → Saturated
4	CV-24220	155	153	9/11/2024	None to Little → Moderate	Dry → Moist
5	CV-24224	141	139	9/13/2024	Moderate → Severe	Dry → Saturated
6	CV-24217	136	134	9/16/2024	None to Little → Severe	Dry → Saturated
7	CV-24218	77	75	9/17/2024	None to Little → Severe	Dry → Saturated
8	CV-24245	50	48	9/18/2024	None to Little	Dry
9	CV-24253	41	39	9/18/2024	None to Little	Dry
10	CV-24243	46	44	9/20/2024	None to Little	Dry
11	CV-24246	115	113	9/20/2024	None to Little → Moderate	Dry
12	CV-24244	42	40	9/23/2024	None to Little	Dry
13	CV-24236	47	45	9/24/2024	None to Little	Dry
14	CV-24237	57	55	9/24/2024	None to Little → Moderate	Dry
15	CV-24227	130	128	9/25/2024	None to Little → Moderate	Dry

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE
REVISION
NO.

SHEET TITLE: REACTION AREA MAP SEPTEMBER, 2024

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX: (562) 427-0805

ACAD FILE: ENGINEERS
DWN. BY: SRM/JH
CHK. BY: JH/WCH
APP. BY: WCH
PROJ. NO. 01204123.35
DSN. BY: -

DATE: 10/03/2024

SCALE: AS SHOWN

SHEET: 1

Solid Waste Borehole Maximum Temperature Profiles Over 6 Weeks

for August 16, 2024 to September 26, 2024

Chiquita provides the following update on the TMPs identified in Chiquita's September 19, 2024 submittal as having temperature increases triggering the LEA notification levels. The majority of the TMPs did not demonstrate major changes in temperature, the increases and reductions in temperatures noted below have been cyclical throughout the month, as further demonstrated in Chiquita's September 12 submittal, and no temperature increases have exceeded the historical maximums for that sensor from September 19, 2024, through September 26, 2024. Additionally, the recorded temperature increases were not indicative of an intensification or expansion of the reaction conditions.:

- TP-08
  - 15-foot thermocouple showed an increase in maximum temperature of 20.3°F from 114.1°F to 134.4°F from September 17th to September 24th.
  - 30-foot thermocouple showed an increase in maximum temperature of 20.1°F from 117.9°F to 138.0°F from September 19th to September 24th.
  - 45-foot thermocouple showed an increase in maximum temperature of 20.2°F from 118.0°F to 138.2°F from September 19th to September 23rd.
- TP-10
  - 30-foot thermocouple showed a further reduction in maximum temperature of 16.2°F from 140.4°F to 124.2°F from September 13th to September 26th.
- TP-13
  - 30-foot thermocouple remained consistent with previous reduction reported on September 19th.
- TP-15
  - 30-foot thermocouple showed an increase in maximum temperature of 22.7°F from 141.6°F to 164.3°F from September 17th to September 25th.
- TP-06
  - As previously notified to the LEA, TP-6 is offline for filling operations as of September 2nd and offline thermocouples read a default maximum possible temperature of 2,508°F.

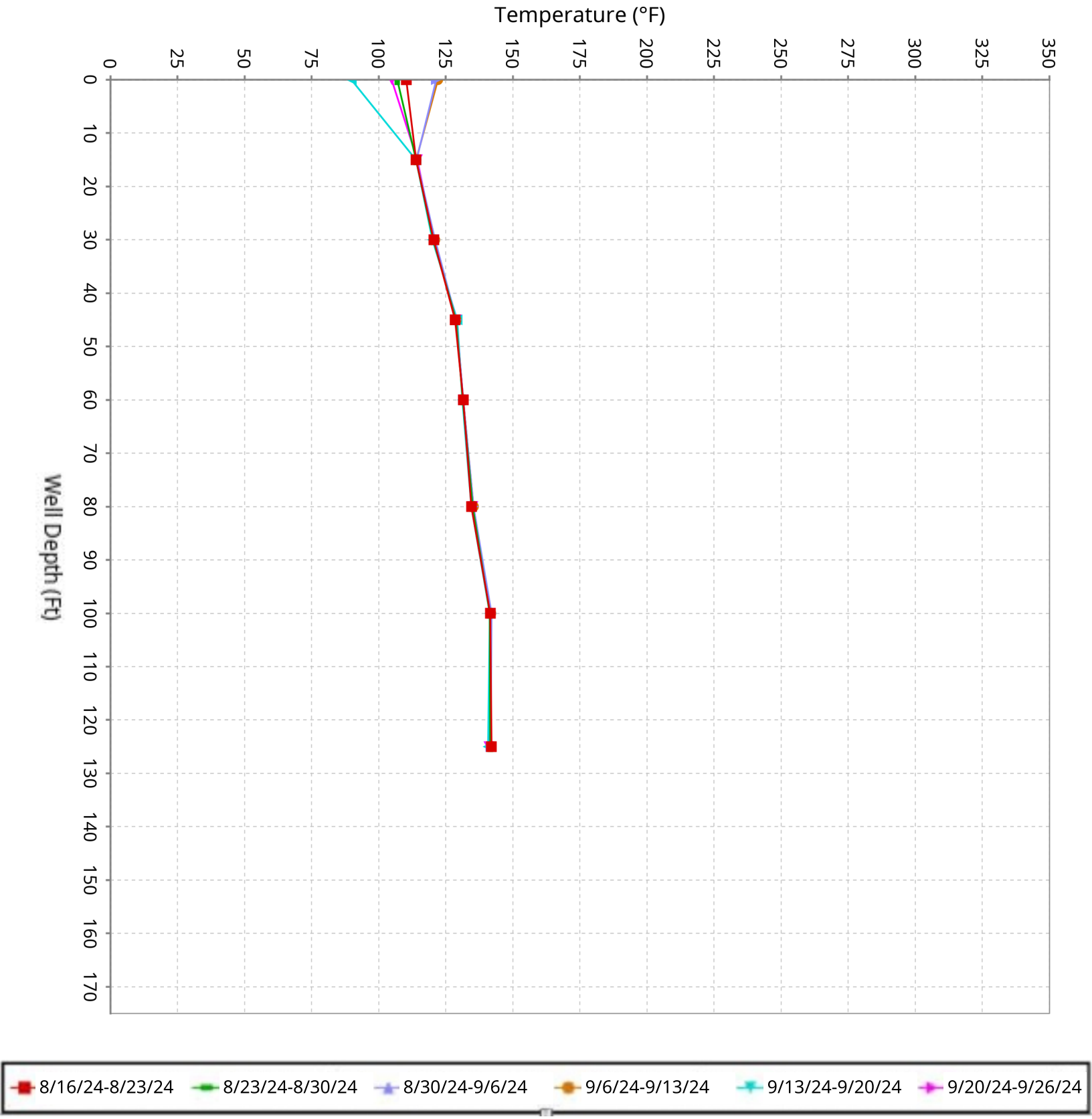
SCS ENGINEERS

07224053.00 | September 26, 2024

274 Granite Run Drive
Lancaster, PA 17601
717-550-6330

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-1

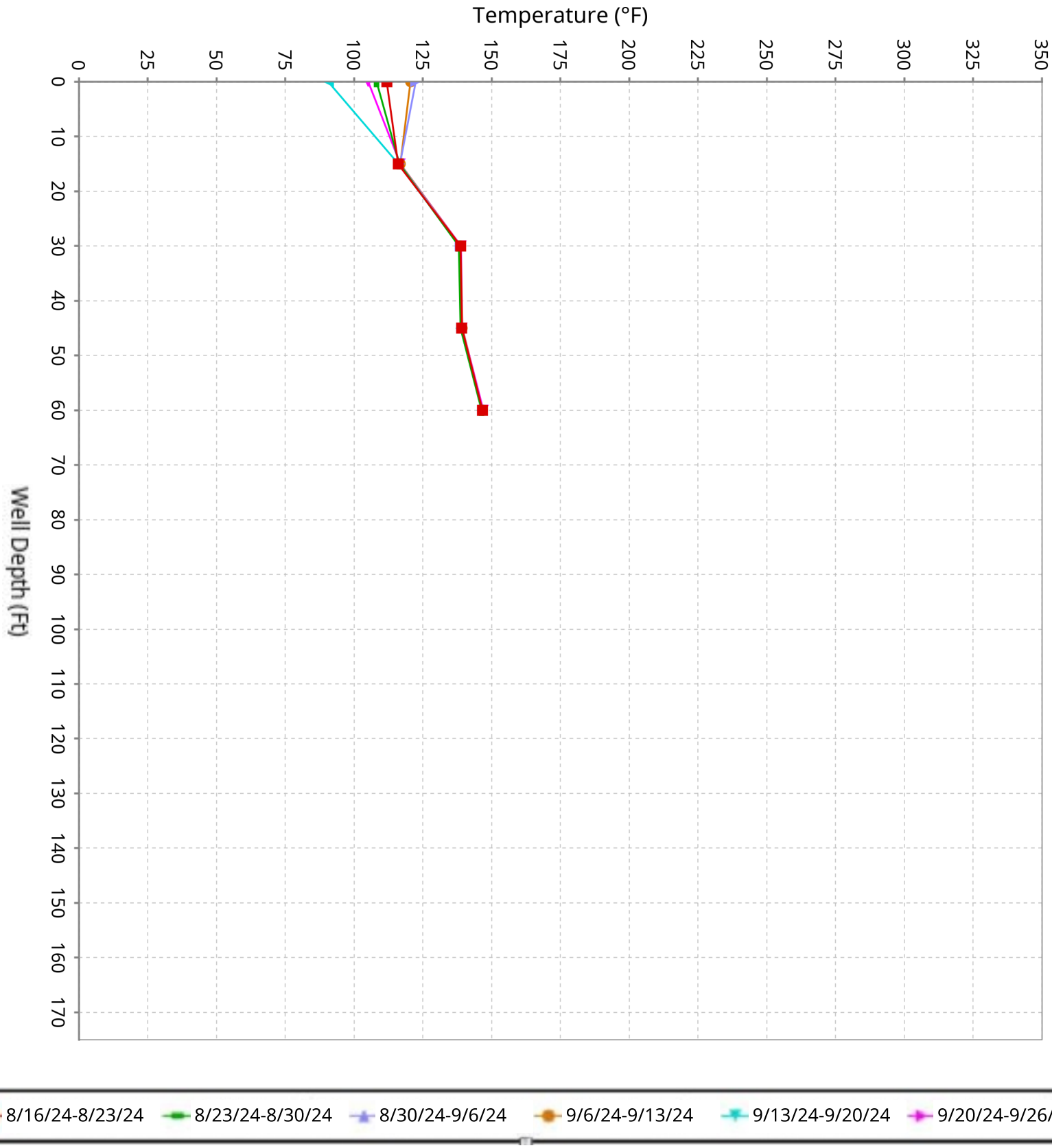
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-2

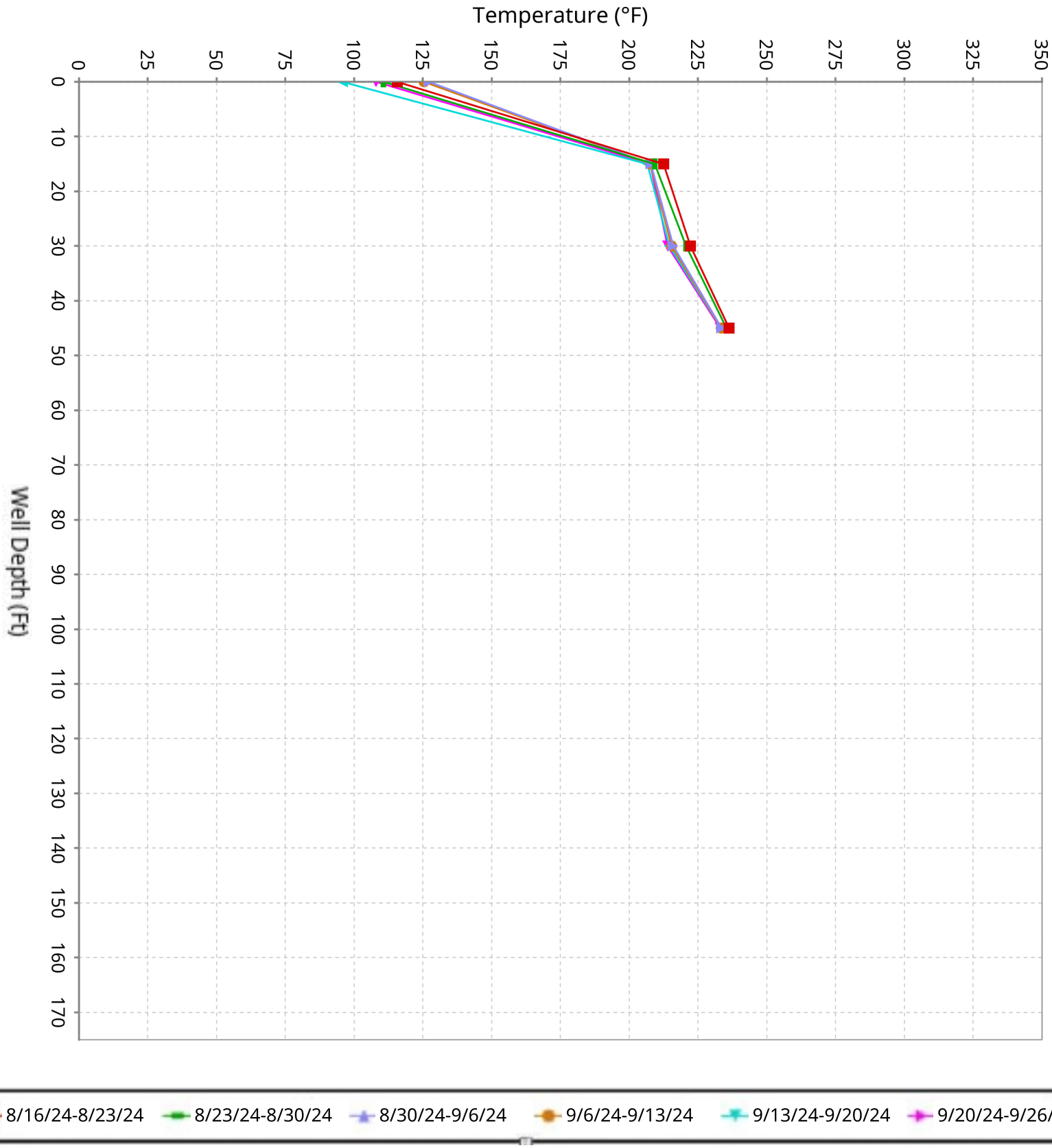
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-3

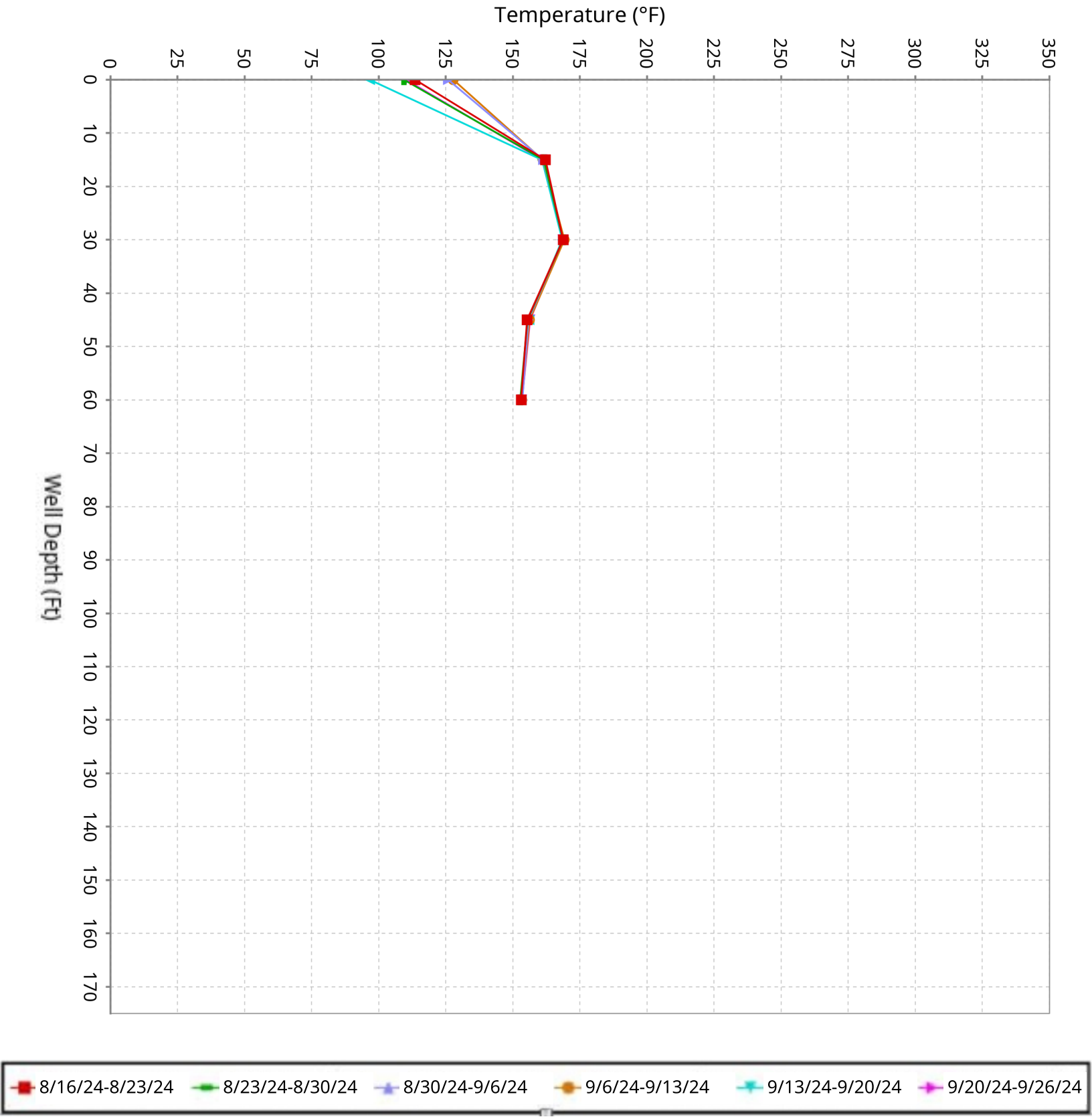
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-4

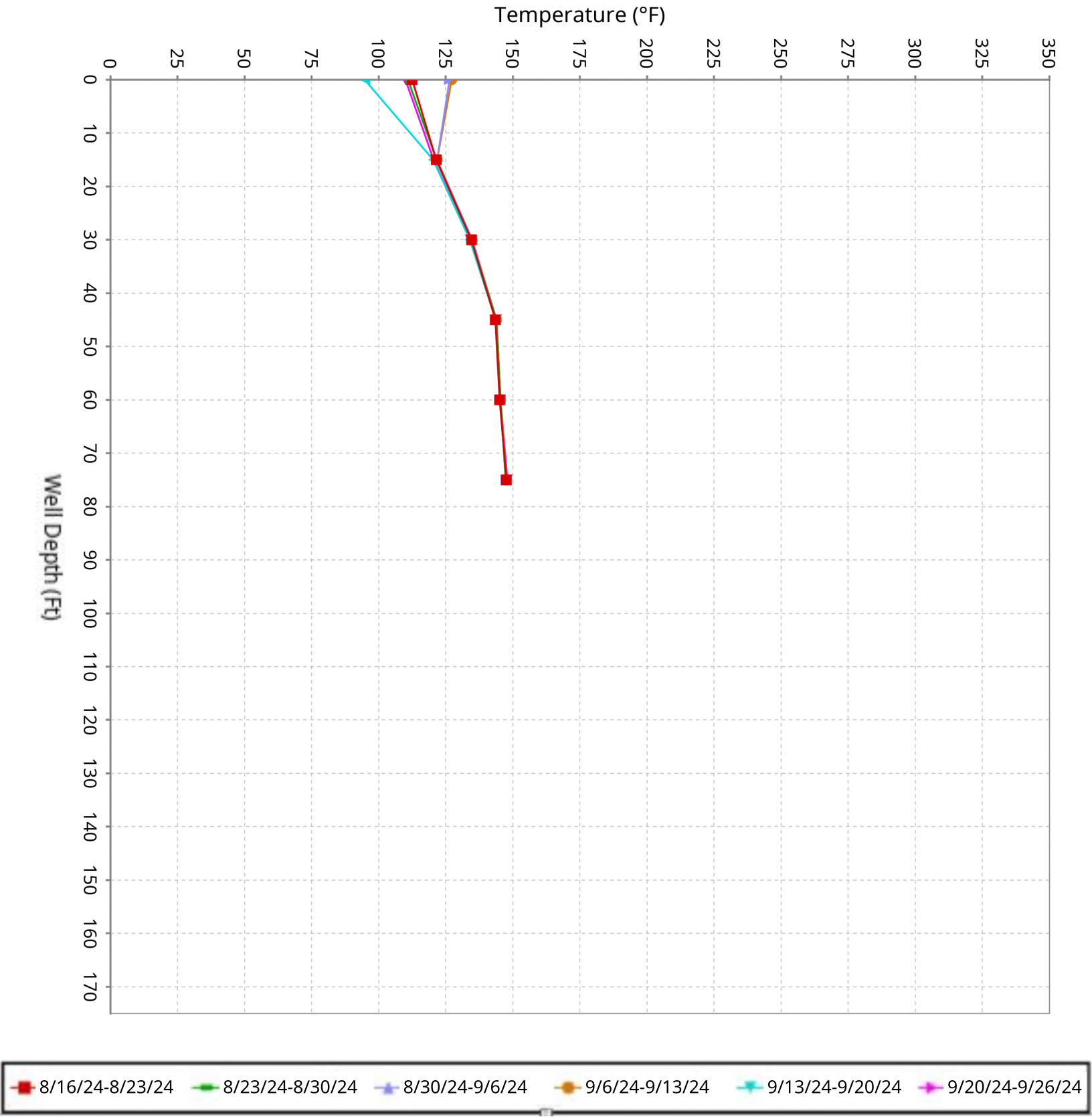
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-5

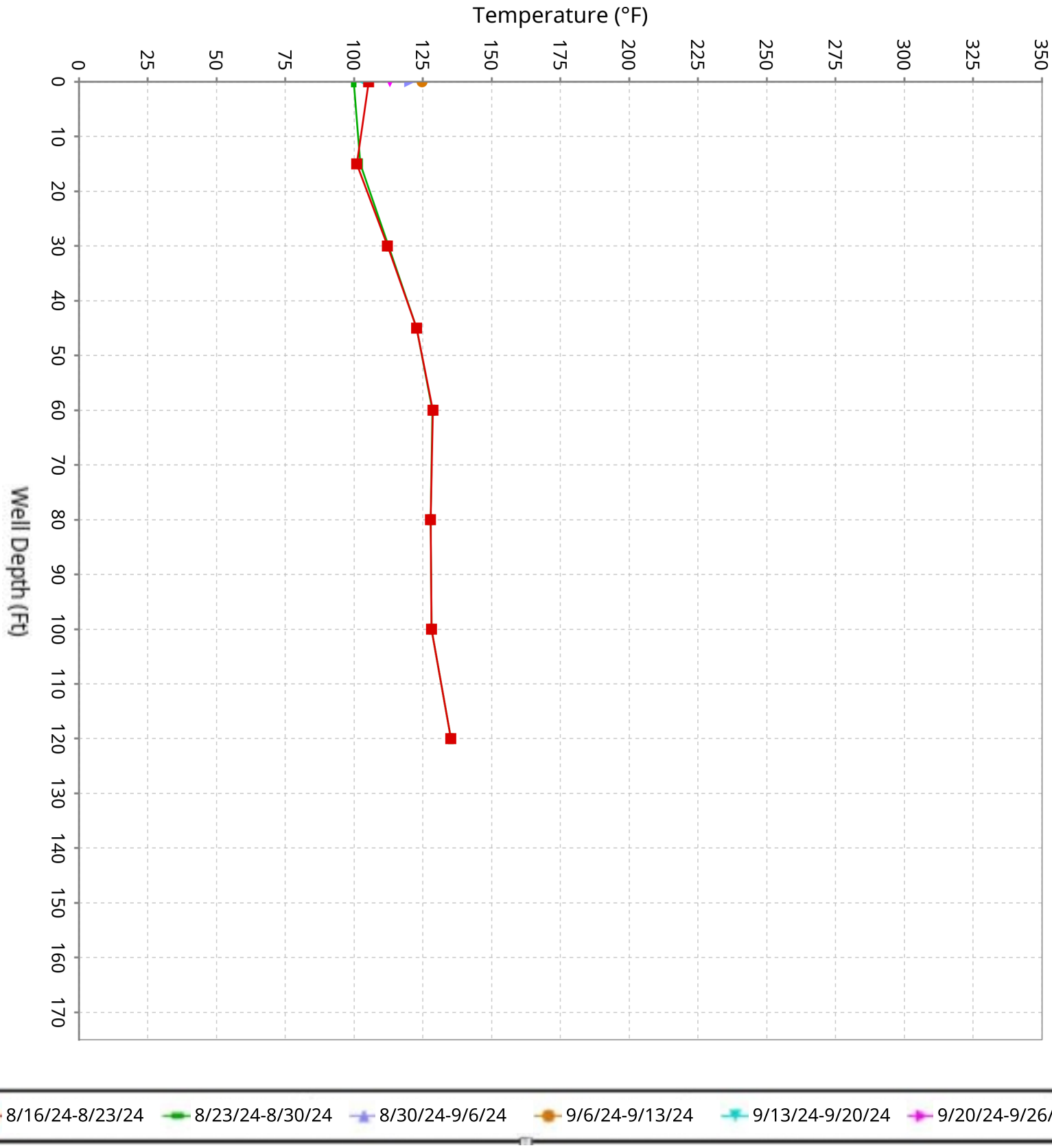
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-6

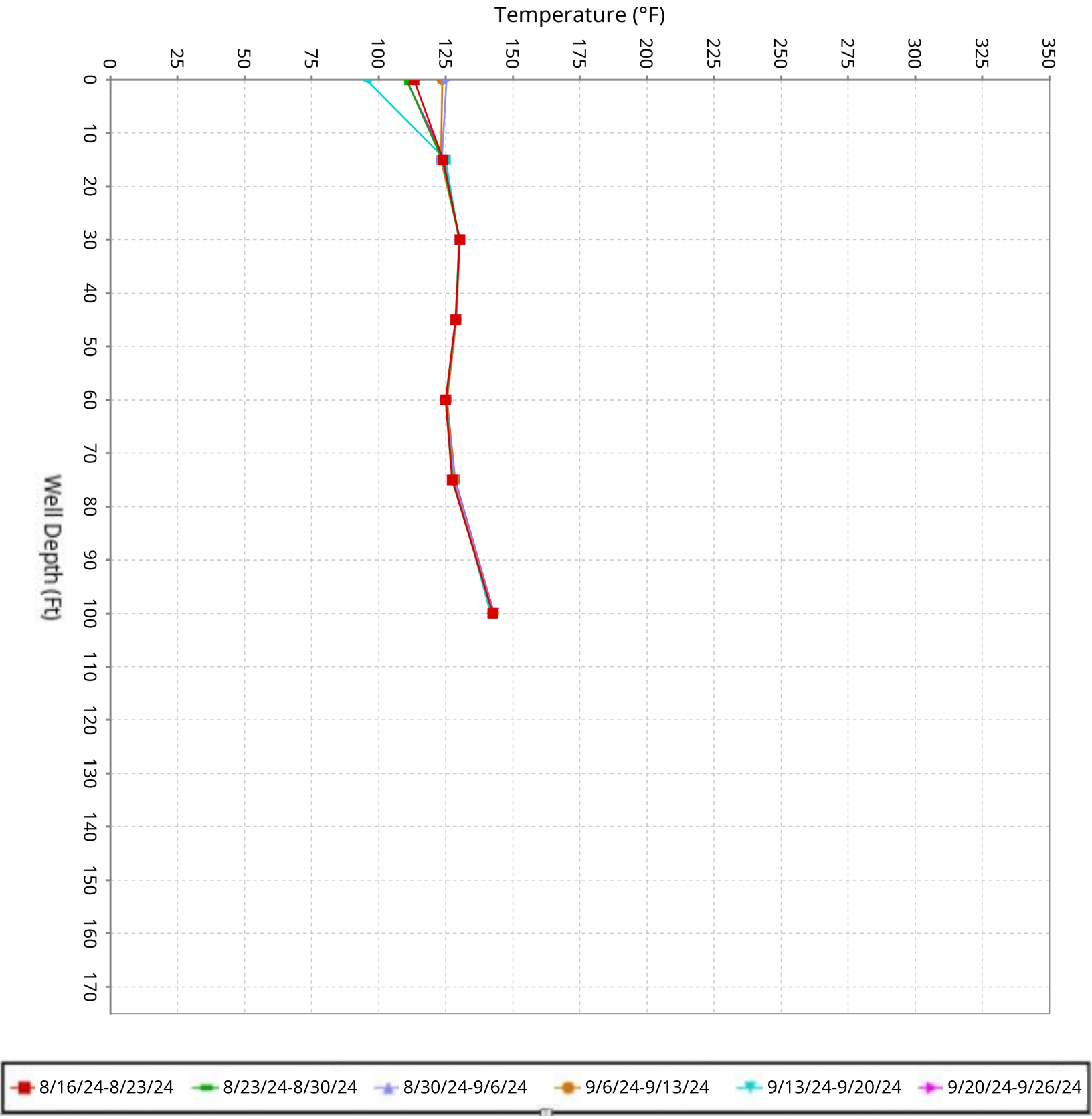
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-7

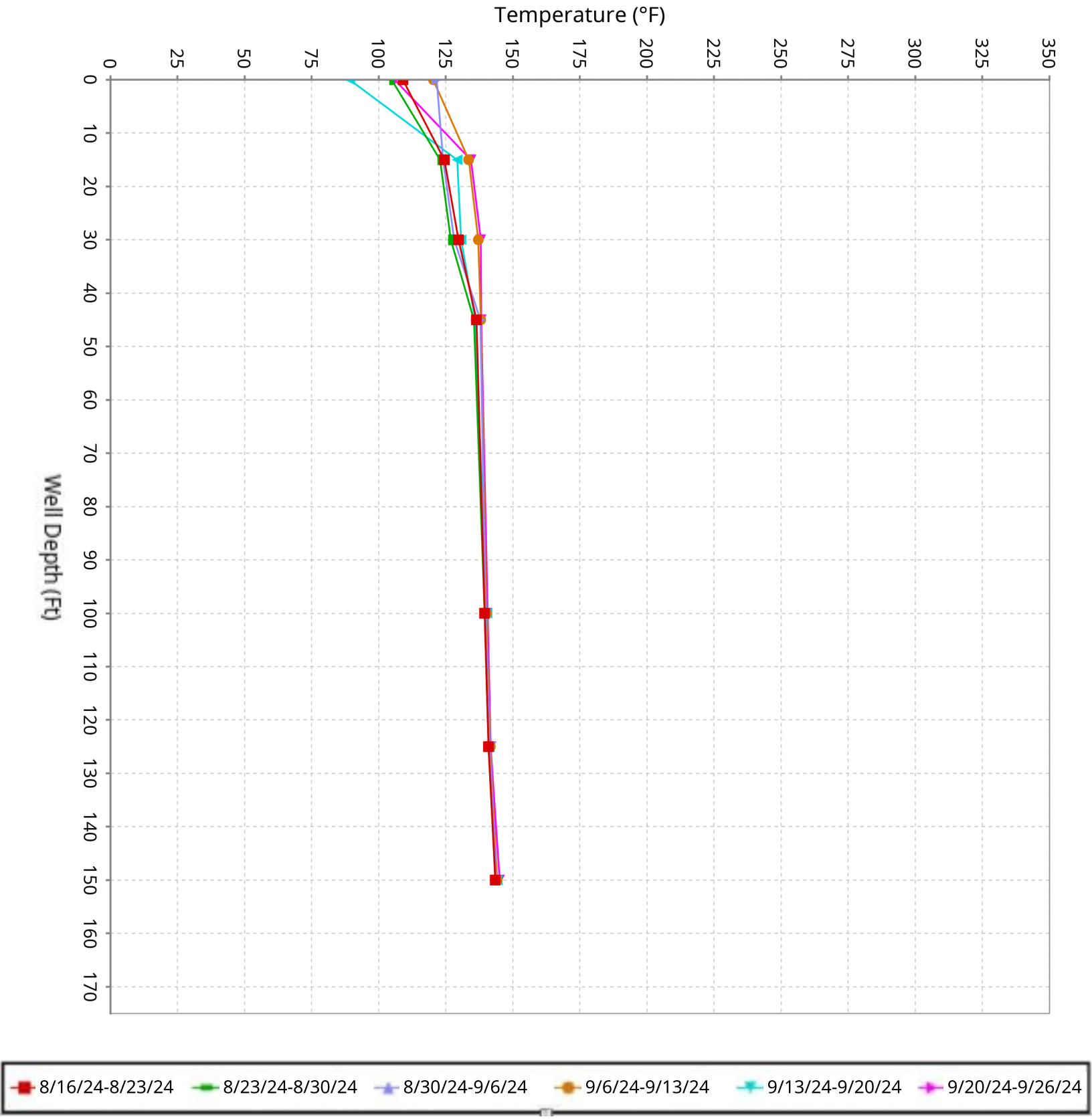
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-8

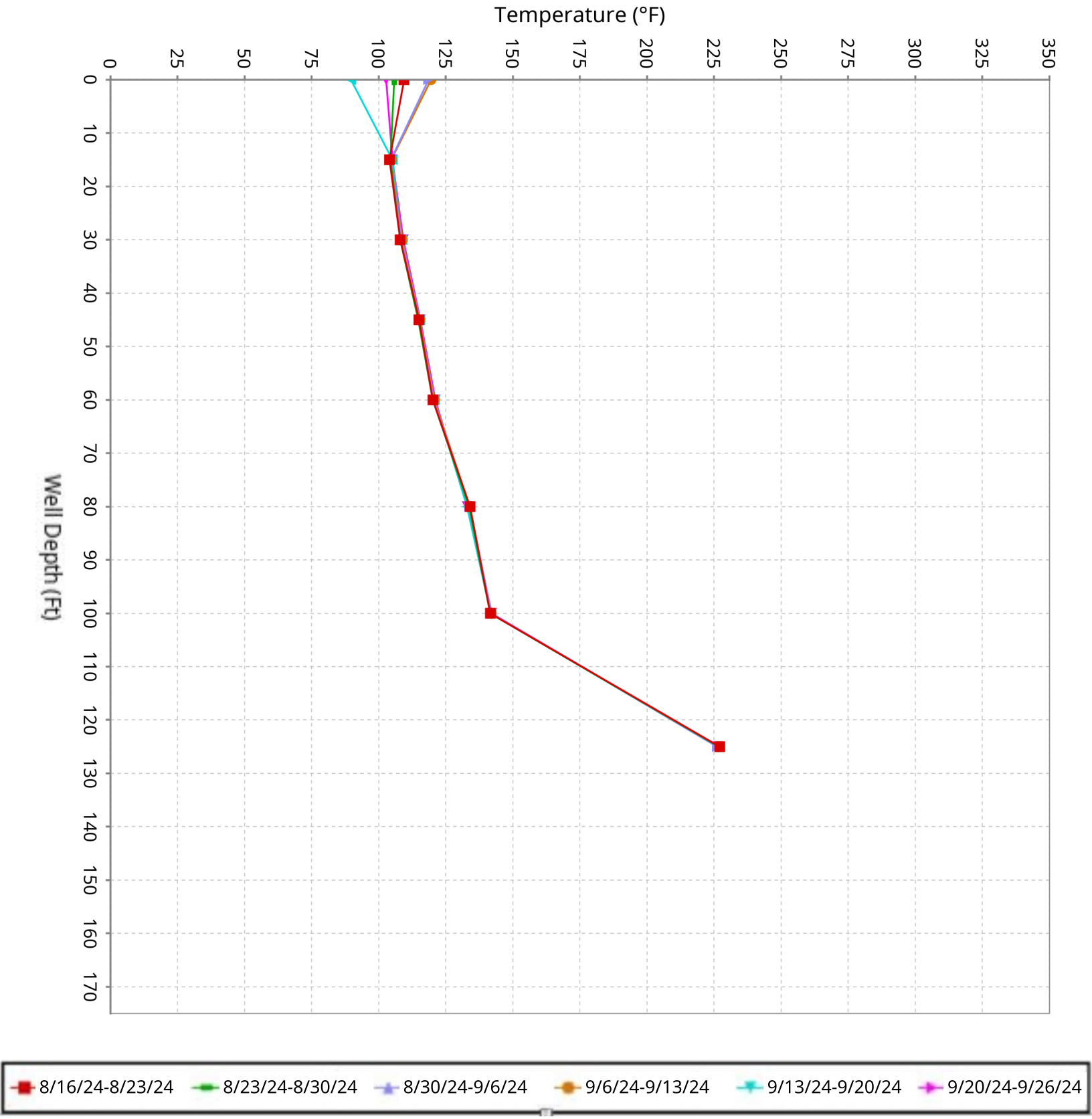
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-9

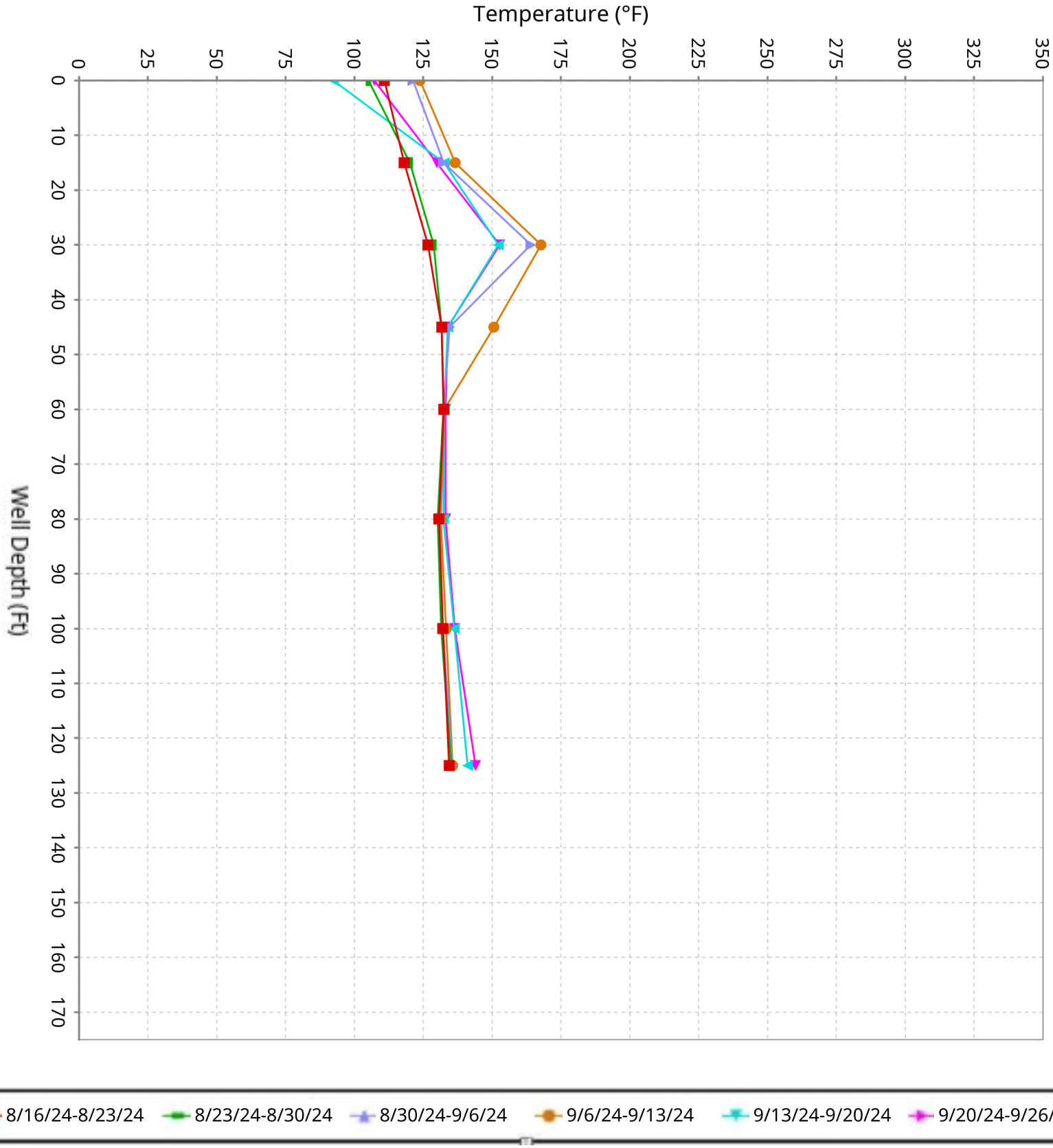
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-10

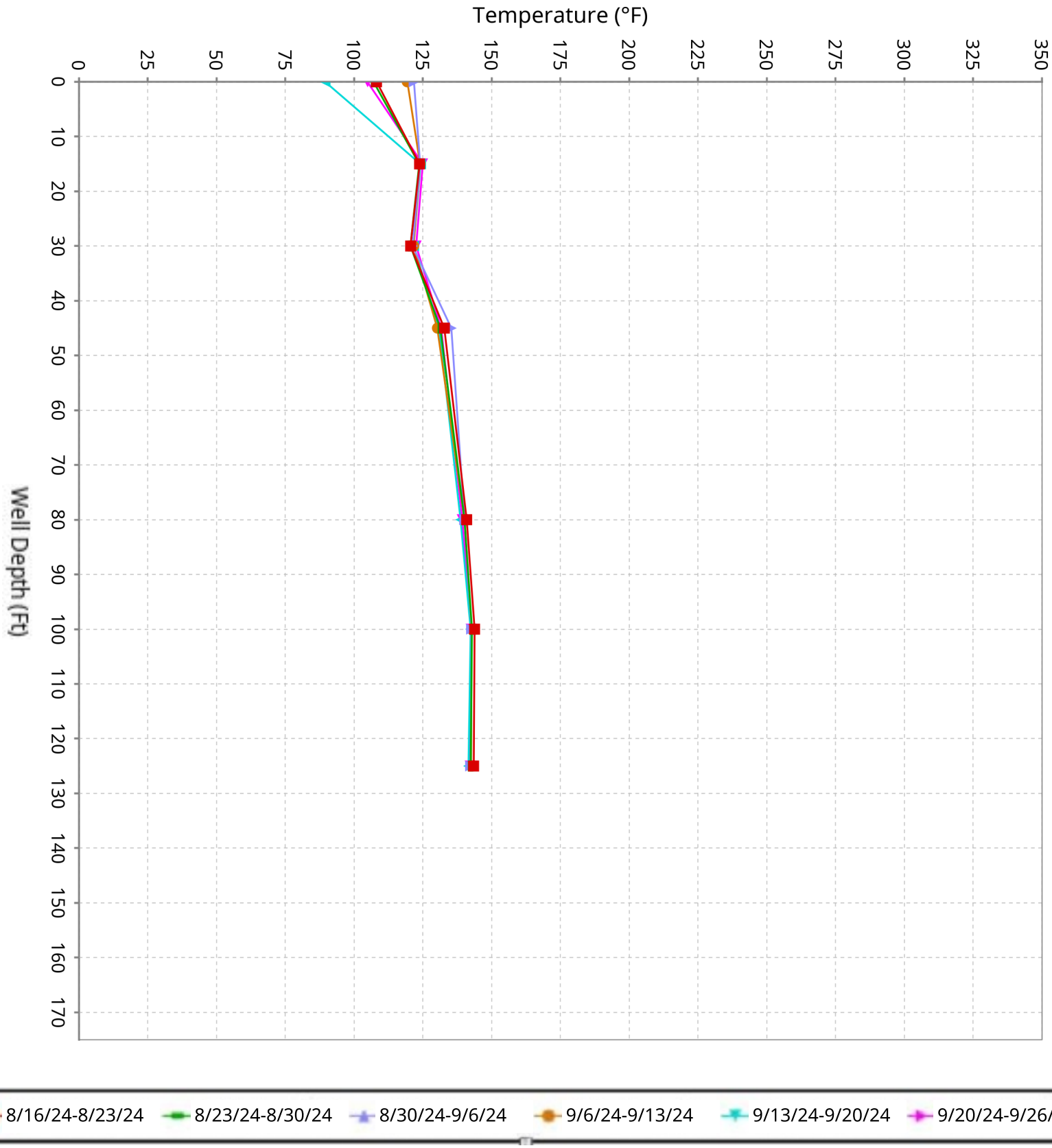
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-11

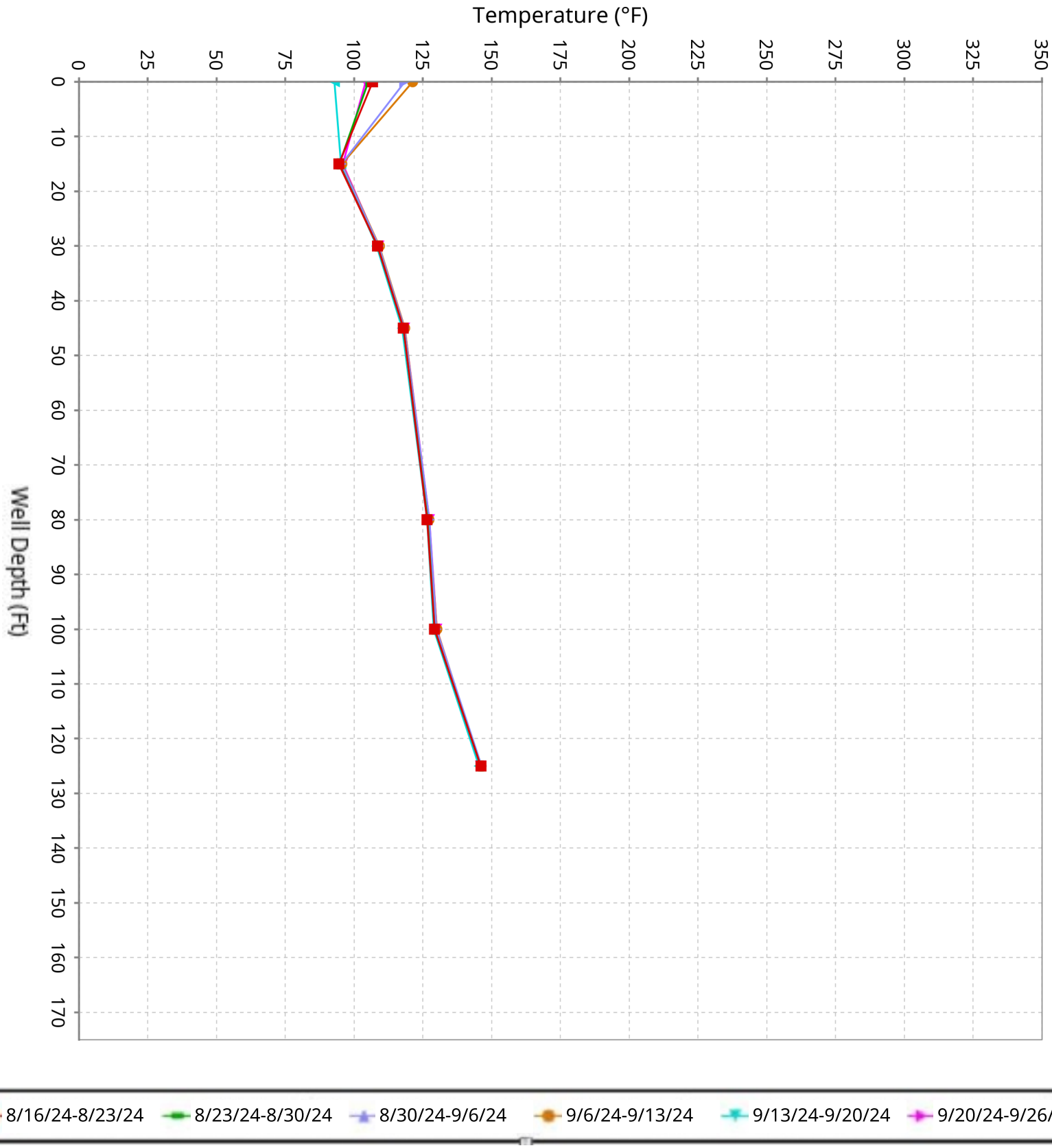
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-12

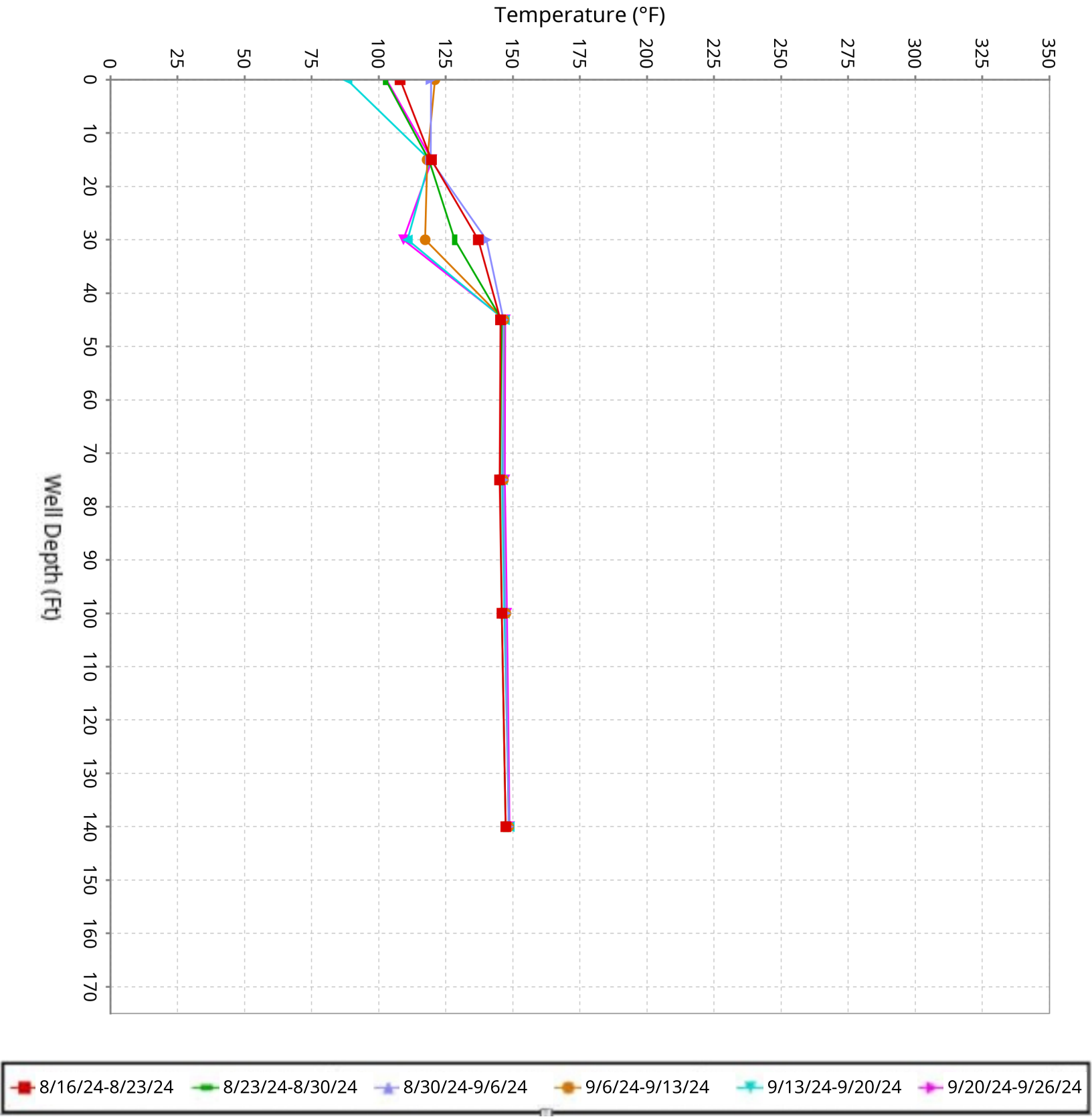
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-13

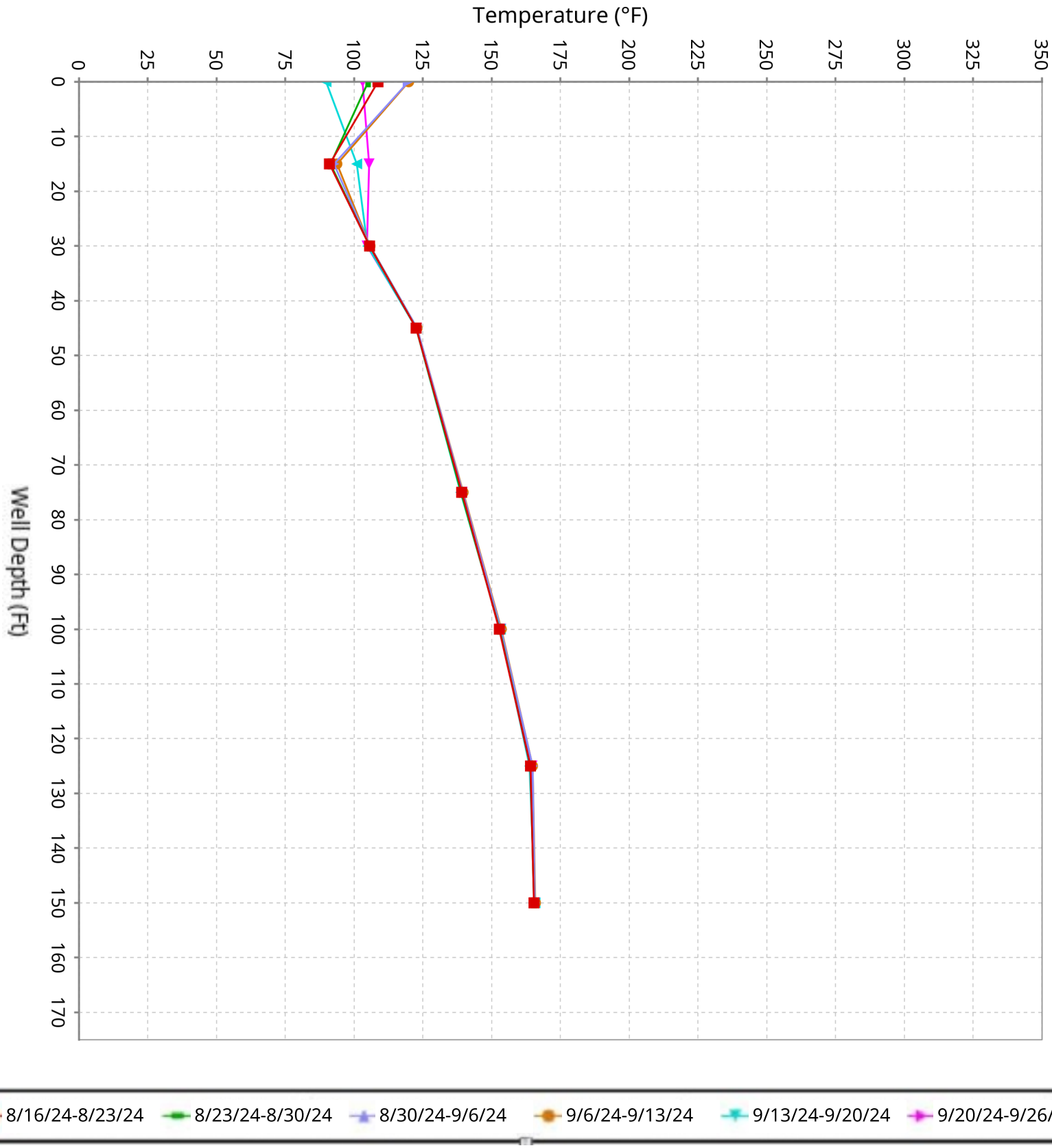
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-14

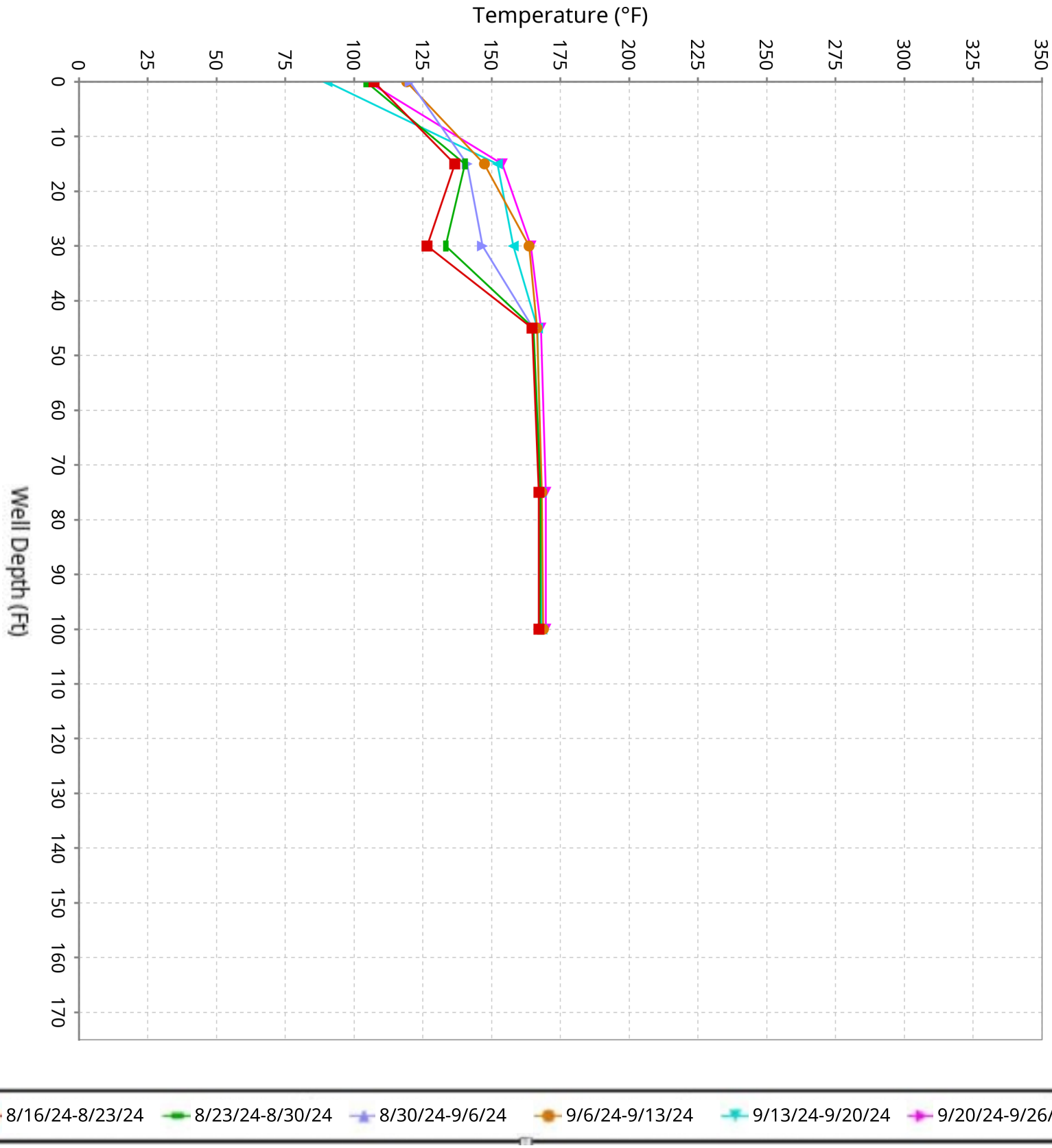
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-15

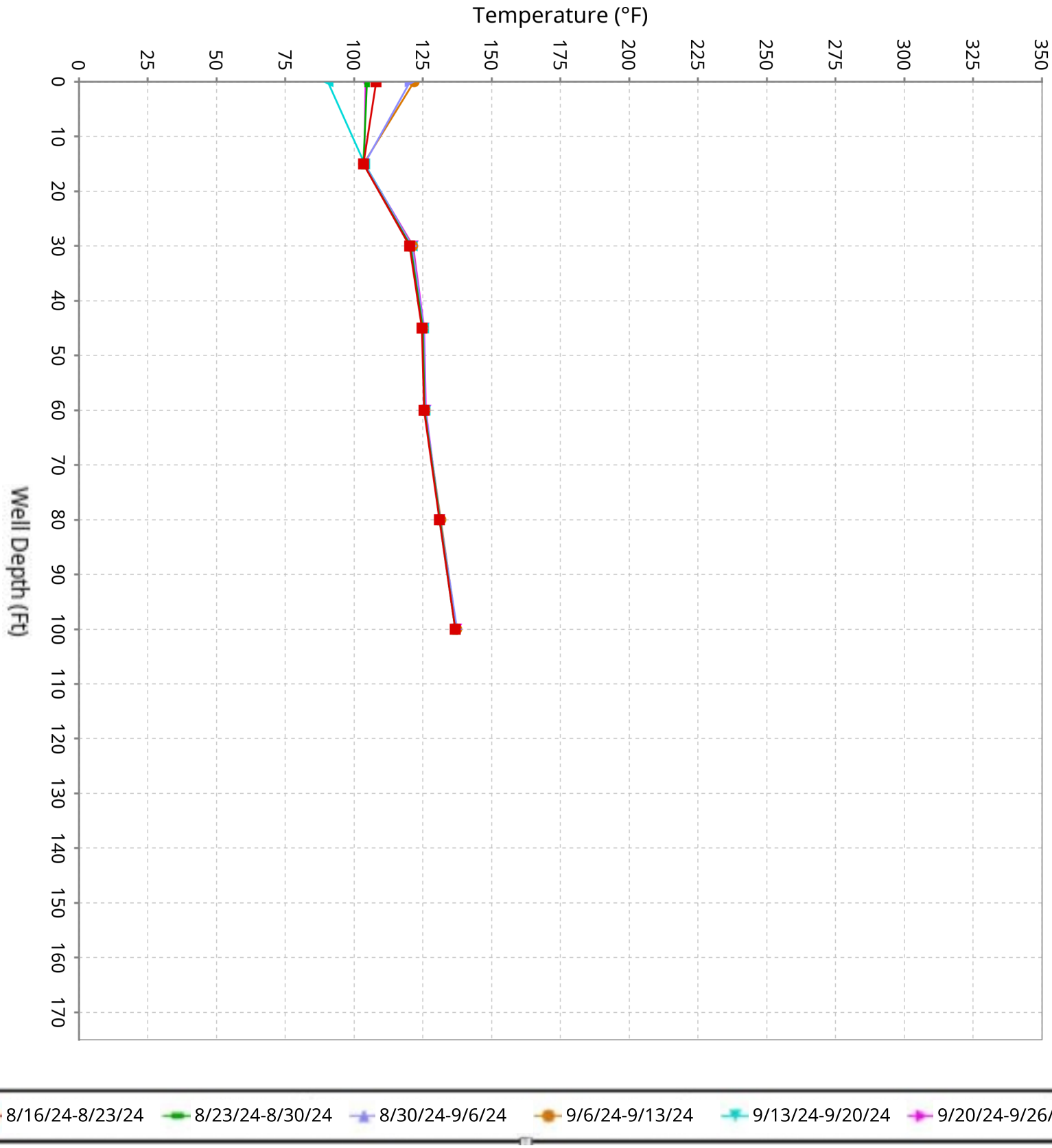
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-16

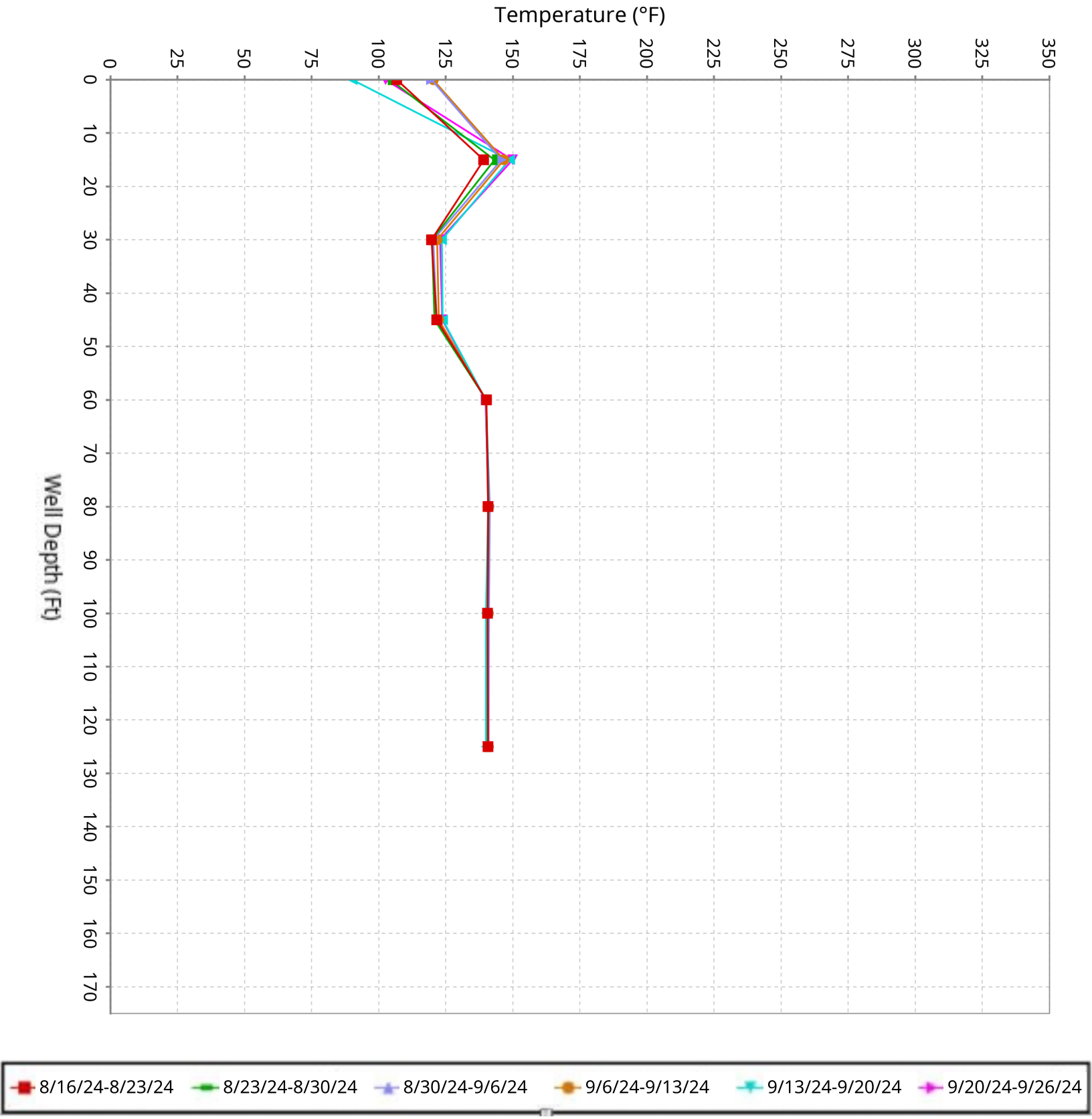
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-17

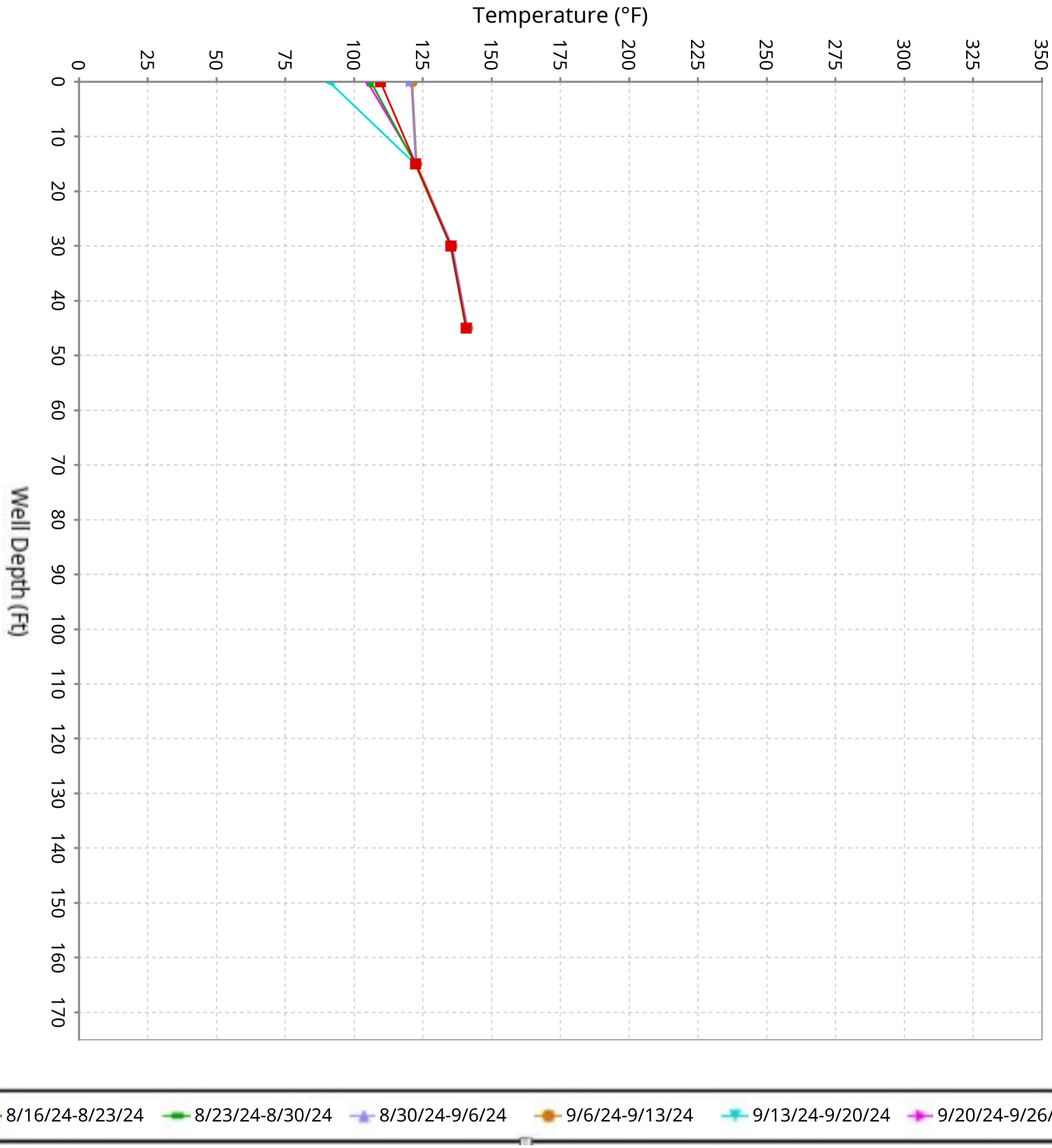
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-18

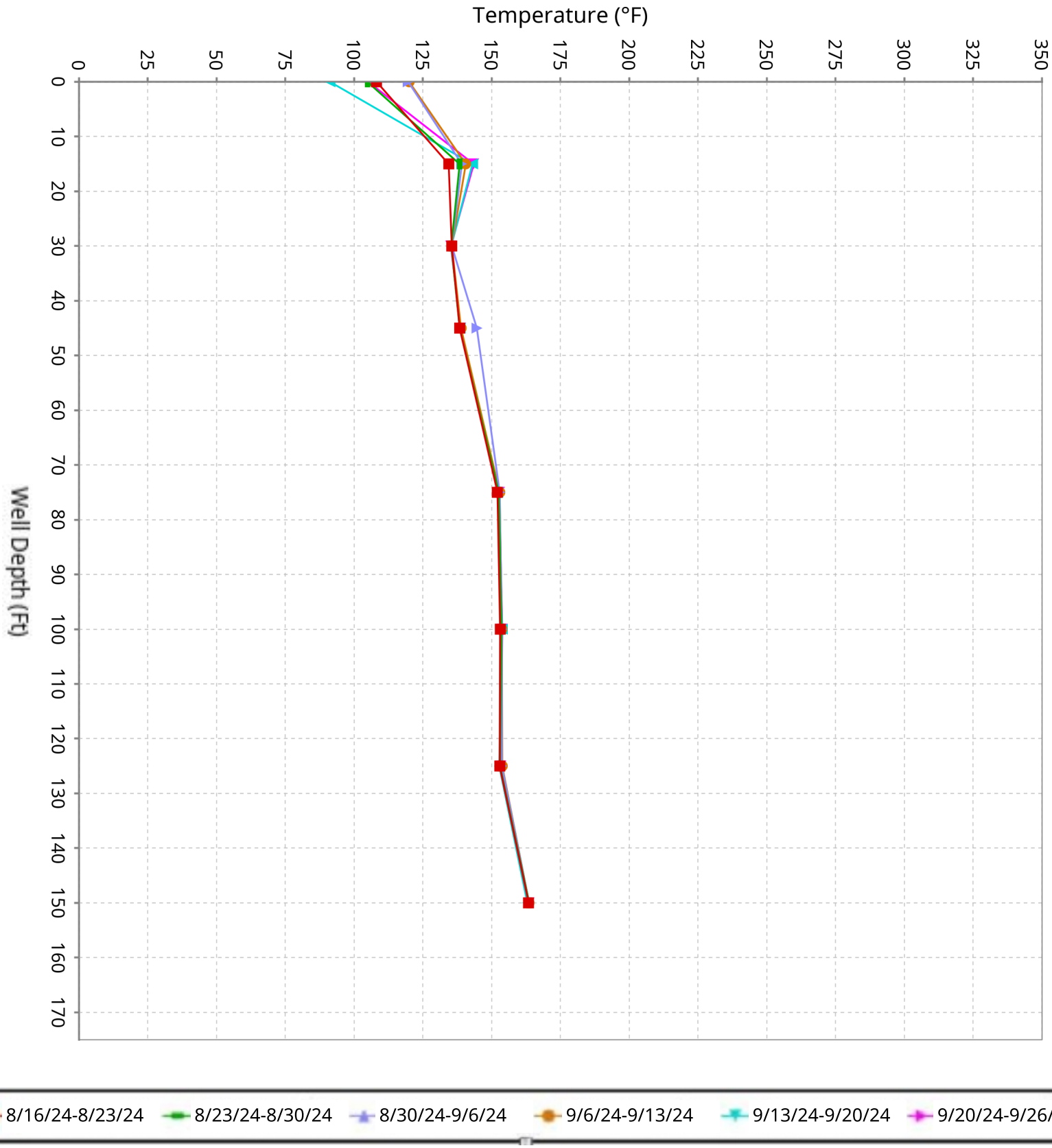
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-19

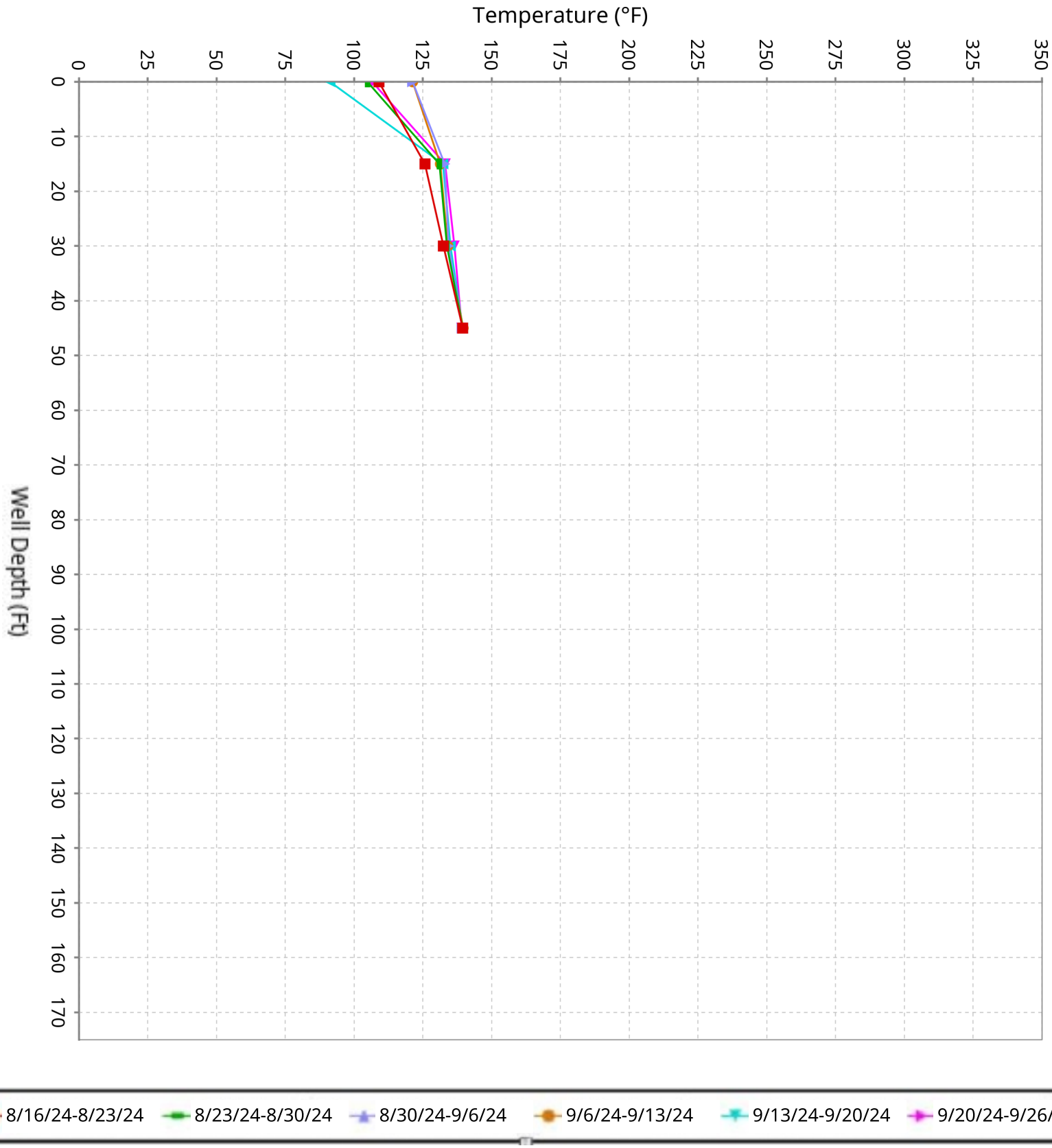
Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

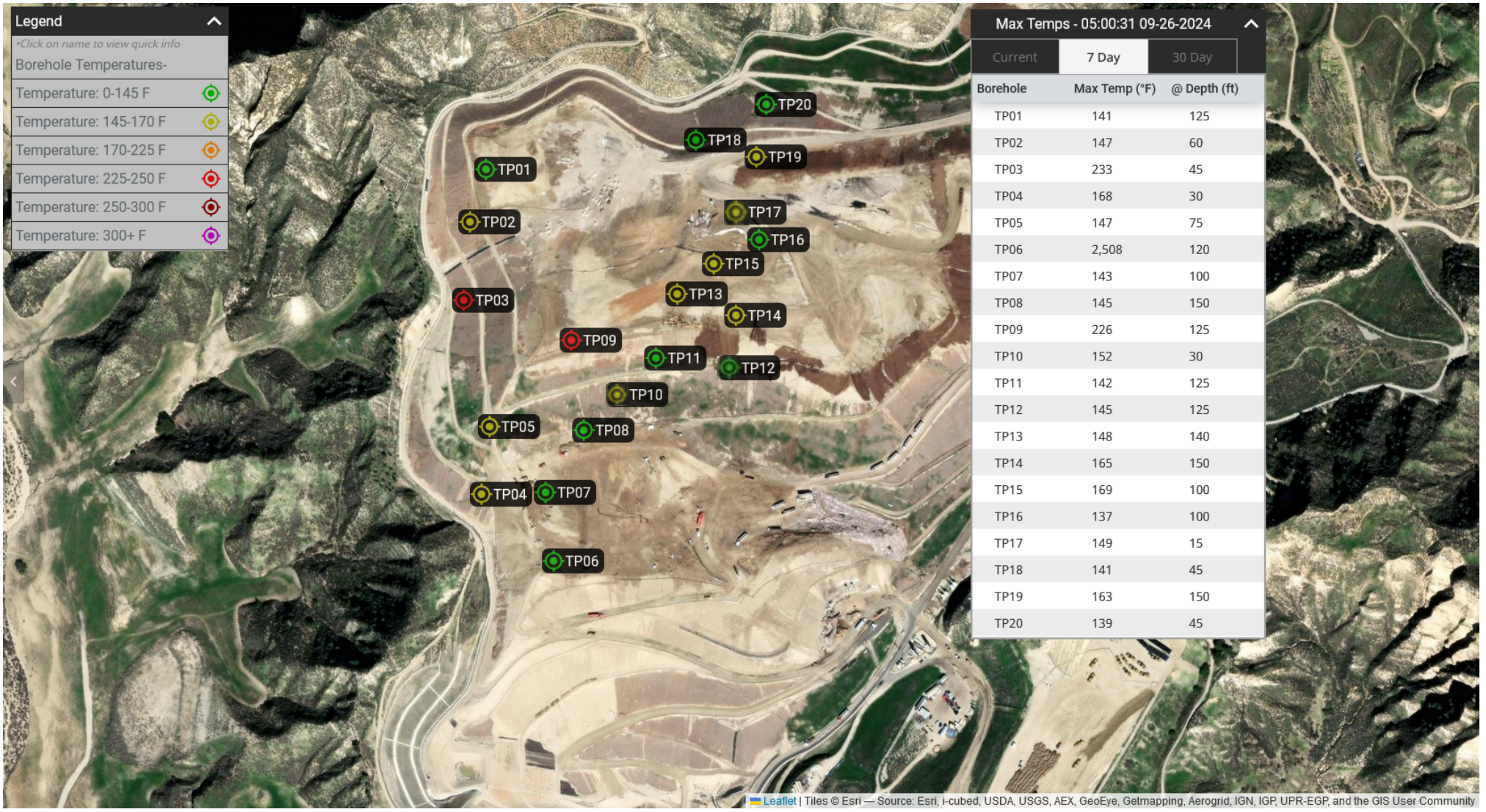
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-20

Maximum data for August 16, 2024 to September 26, 2024



SCS ENGINEERS

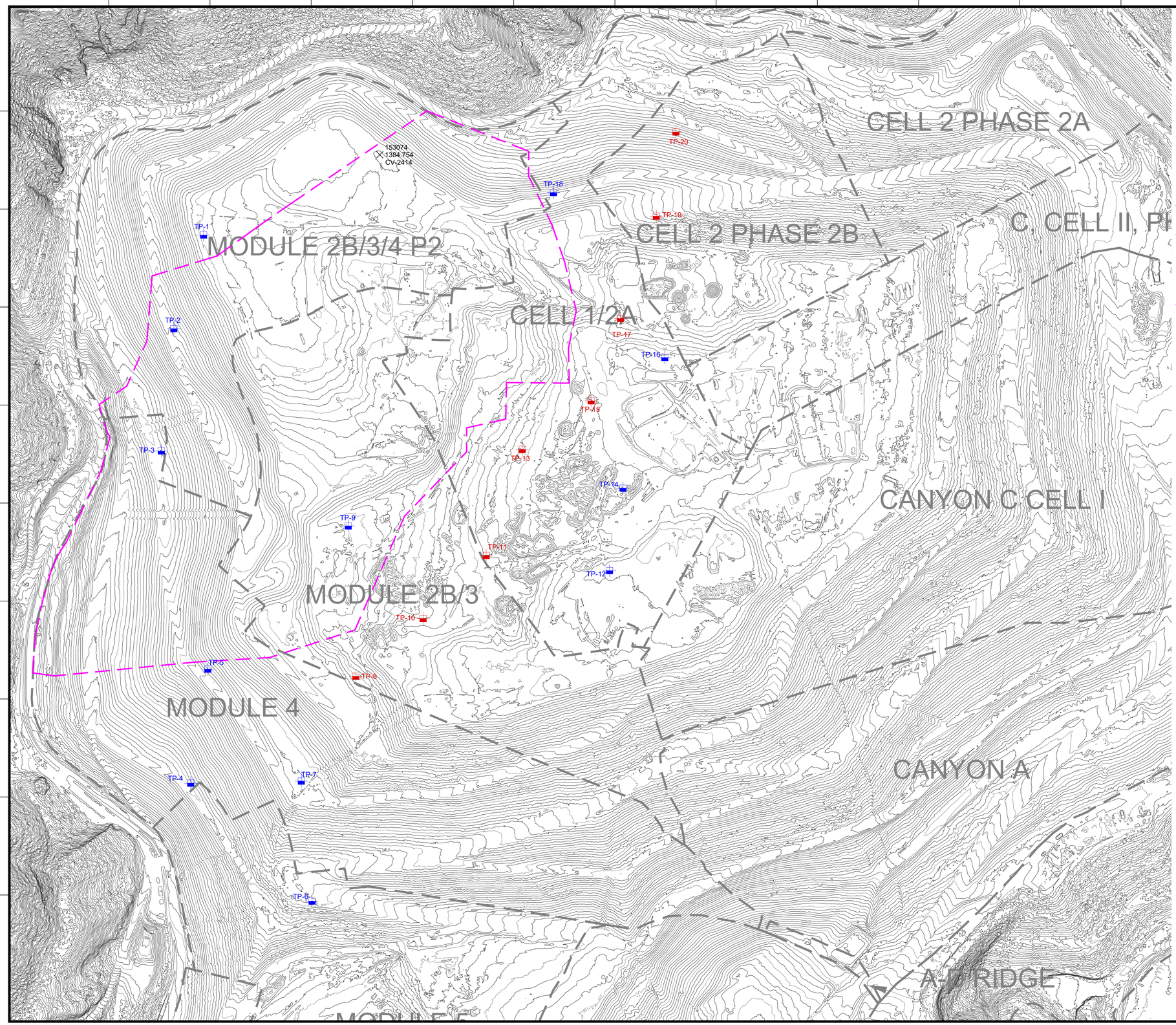
Maximum Vertical Temperature Map from Temperature Probes at Chiquita Landfill



Max Temps - 05:00:31 09-26-2024

Current | 7 Day | 30 Day

Borehole	Max Temp (°F)	@ Depth (ft)
TP01	141	125
TP02	147	60
TP03	233	45
TP04	168	30
TP05	147	75
TP06	2,508	120
TP07	143	100
TP08	145	150
TP09	226	125
TP10	152	30
TP11	142	125
TP12	145	125
TP13	148	140
TP14	165	150
TP15	169	100
TP16	137	100
TP17	149	15
TP18	141	45
TP19	163	150
TP20	139	45



N

GRAPHIC SCALE

130 65 0 130 260 390

SCALE: 1"=130'

LEGEND

1150	EXISTING TOPOGRAPHIC CONTOUR
	EXISTING CELL LIMITS (APPROXIMATE)
TP-XX	INSTALLED TEMPERATURE PROBES - STANDALONE
TP-XX	INSTALLED TEMPERATURE PROBES INSTALLED WITHIN WELL CASING
	REACTION AREA BOUNDARY (APPROX) - BASED ON DATA REVIEW

GENERAL DRAWING NOTES:

1. EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN WAS PROVIDED BY PROPELLER. AERIAL PHOTOGRAPHY DATED JUNE 12, 2024.
2. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.

NO.	REVISION	DATE

SHEET TITLE: OVERALL INSTALLED TEMPERATURE PROBE SITE PLAN

PROJECT TITLE: TEMPERATURE PROBE INSTALLATION PROJECT CHIQUITA LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX. (562) 427-0805

PROJ. NO.	01204123.35	DWN. BY:	AEK
DSN. BY:	JH/SRM	CHK. BY:	WCH
		APP. BY:	WCH

ACAD FILE: ENGINEERS

DATE: 06/14/2024

SCALE: AS SHOWN

SHEET: 1

C:\Users\akarram\Desktop\Work\Chiquita\Temp Probes\2024 CCLF Temp.Probe AK_2024-06-14.dwg Jun 14, 2024 - 11:49am By: akarram

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT C TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

November 7, 2024
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Modified Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of October 2024, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 11/6/24. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2, as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line.

The Reaction Committee reviewed the temperature measurements recorded during October 2024 by the in-situ temperature monitoring probes. Three (3) of the twenty (20) probes (TP-2, 3, and 9) are located within the estimated extent of ETLF conditions (dashed magenta line), and thirteen (13) probes are positioned adjacent to (within 200 feet) of this boundary. The variability in temperatures at the 30-foot depth of TP-10 continued to indicate a decrease in temperature during October. The temperatures at all depth levels greater than 15 feet at TP-15 increased slightly in October but are maintained at approximately 175 degrees Fahrenheit. As noted previously, the extensive dewatering efforts that occurred during October may be contributing to subtle temperature fluctuations observed at shallow depth intervals in select temperature probes. Similar to our analysis of data recorded during the previous months, it is the Committee's opinion that the temperatures recorded by the 13 probes outside of the boundary during October 2024 are not indicative of a subsurface reaction and do not substantiate a decision to expand the boundary of the reaction area at this time.

The Reaction Committee also evaluated the concentration of hydrogen in landfill gas (LFG) during October 2024. Recall that certain wells positioned to the south and east of the reaction area boundary (where dewatering pumping was reactivated) had demonstrated some increased hydrogen content in the LFG during the Reaction Committee's review of the data in previous months; however, some of these wells have not sustained these hydrogen concentrations. The Reaction Committee noted in its review of the previous months' data that these wells did not exhibit elevated temperatures, such that there was no evidence of the increased heat that is typical with ETLF conditions present at these wells. The October 2024 data indicate the same situation where select vertical wells positioned to the south and east outside the reaction area boundary exhibit hydrogen

concentrations over 2%; however, similar to the previous data, none of the wells that exhibited some increased hydrogen content in the LFG during October are demonstrating atypical heat present. The Committee suspects this increased hydrogen content may be attributed to wells being located adjacent to an existing horizontal well and they are believed to be intercepting gas collected from within the reaction area by horizontal wells in close proximity. Also, the extensive dewatering efforts that occurred during October may be contributing to movement of LFG with elevated hydrogen into adjacent areas. Many wells positioned between these wells exhibiting hydrogen during October do not contain hydrogen greater than 2%, which further suggests that ETLF conditions are not expanding south and east of the delineated boundary. Accordingly, the Reaction Committee does not believe an adjustment to the boundary of the reaction area is merited at this time. The Reaction Committee will continue to monitor LFG hydrogen concentrations closely during future months.

As presented on the Drawing included as **Attachment A**, the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Because the ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell, the Reaction Committee finds no basis to modify the Reaction Area boundary at this time. Please note the following:

- The rationale that would serve as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include:

    - LFG wellhead temperatures in excess of approximately 160 degrees Fahrenheit.

    - Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.

    - The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.

    - Accelerated settlement of the landfill surface, defined as approximately 18 inches or greater within a 60-day period, and cracks in landfill cover. This corresponds to a strain value (i.e., settlement rate) rate of 3 percent per year for areas with a 300-foot waste column depth, which we believe is a reasonable average depth in the subject area of interest.

    - First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint (often described as “chemical-like” and distinctly different from typical LFG or landfill working face odors).

    - Observations of subsurface waste conditions and characteristics as noted on borehole drilling logs for recently installed new wells and/or probes.

    - Subsurface temperatures recorded at the in-situ waste temperature probes during October 2024.

There was no dissenting opinion among the Reaction Committee members regarding this monthly determination. Supporting data is presented on the Drawing included as **Attachment A.** The maximum temperature measurements recorded at the 20 in-situ waste temperature monitoring probes during October are presented in **Attachment B** in graphical format. The electronic database and recordkeeping platform enables these measurements to be downloaded into a tabular spreadsheet format, which can be submitted to the South Coast Air Quality Management District under separate cover, if requested.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

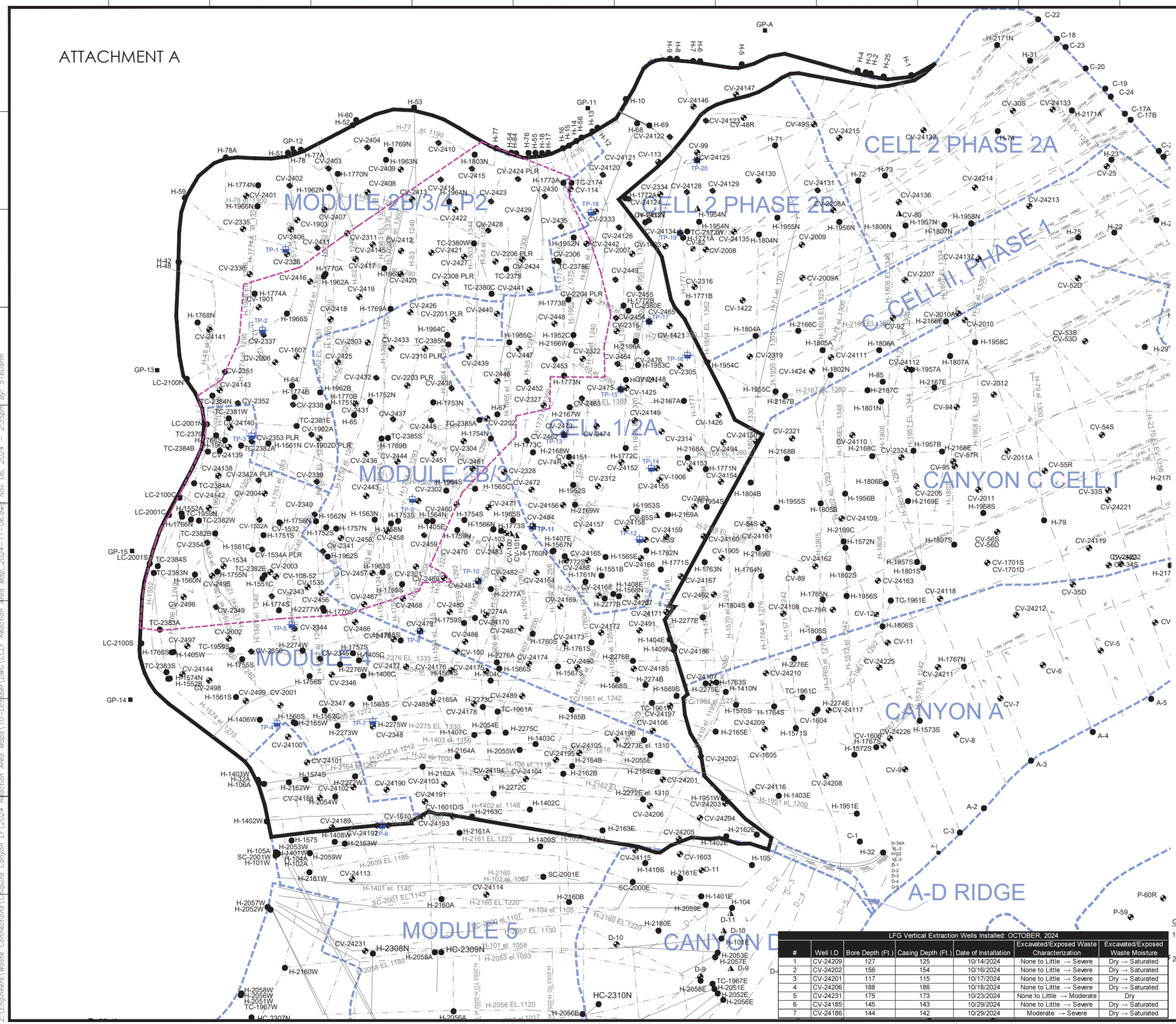
RED/PSS

cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Richard Pleus, PhD, Intertox
Srividhya Viswanathan, PE, SCS Engineers

Enclosures:

Attachment A – Reaction Area Map
Attachment B – In-Situ Waste Temperature Monitoring Probe Data

ATTACHMENT A



LEGEND

- EXISTING CELL LIMITS (APPROXIMATE)
- CV-XX EXISTING VERTICAL WELLS
- CV-XX PLR EXISTING VERTICAL WELL - PRESSURIZED LEACHATE RELEASE
- CV-XX EXISTING VERTICAL WELLS BELOW-GRADE
- H-XX EXISTING HORIZONTAL WELLS
- CV-XX EXISTING REMOTE VERTICAL WELLHEAD
- GP-XX EXISTING PERIMETER MIGRATION PROBE
- TP-XX EXISTING TEMPERATURE PROBE
- EXISTING HORIZONTAL COLLECTOR - SOLID
- EXISTING HORIZONTAL COLLECTOR - PERFORATED
- EXISTING HISTORIC HORIZONTAL COLLECTOR
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
- REACTION AREA BOUNDARY - CONDITION 9A

LFG Vertical Extraction Wells Installed: OCTOBER, 2024

#	Well I.D	Bore Depth (Ft.)	Casing Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Characterization	Excavated/Exposed Waste Moisture
1	CV-24209	127	125	10/14/2024	None to Little → Severe	Dry → Saturated
2	CV-24202	156	154	10/16/2024	None to Little → Severe	Dry → Saturated
3	CV-24201	117	115	10/17/2024	None to Little → Severe	Dry → Saturated
4	CV-24206	188	186	10/18/2024	None to Little → Severe	Dry → Saturated
5	CV-24231	175	173	10/23/2024	None to Little → Moderate	Dry
6	CV-24185	145	143	10/29/2024	None to Little → Severe	Dry → Saturated
7	CV-24186	144	142	10/29/2024	Moderate → Severe	Dry → Saturated

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE / REVISION / NO.

SHEET TITLE: REACTION AREA MAP OCTOBER 2024

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX: (562) 427-0805

ACAD FILE: ENGINEERS
DWN: BY: SRM
CHK: BY: WCH
APP: BY: WCH
PROJ. NO. 01204123.35
DSN: BY: -

DATE: 11/06/2024

SCALE: AS SHOWN

SHEET: 1

ATTACHMENT B

Solid Waste Borehole Maximum Temperature Profiles Over 6 Weeks

for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM

Chiquita provides the following update on the TMPs identified in Chiquita's October 24, 2024 submittal:

- TP-08
  - TP-8 was taken offline on October 3rd for filling operations related to the west toe excavation, and offline thermocouples read a default maximum possible temperature of 2,508°F.
- TP-11
  - 30-foot thermocouple remained consistent with previous temperatures reported on October 24th.
- TP-15
  - 30-foot thermocouple remained consistent with previous temperature increase on October 20th as reported on October 24th.

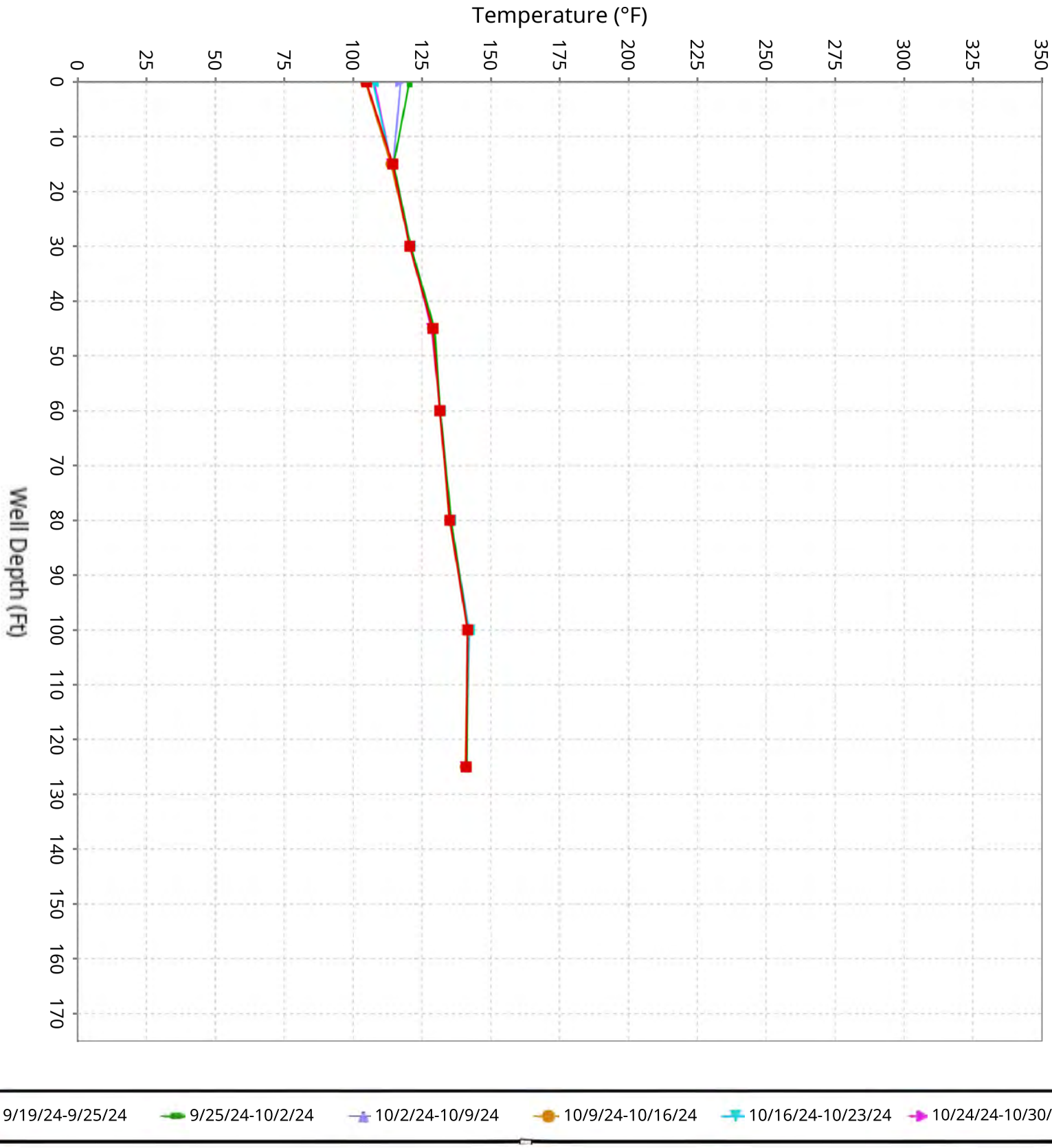
SCS ENGINEERS

07224053.00 | October 31, 2024

274 Granite Run Drive
Lancaster, PA 17601
717-550-6330

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-1

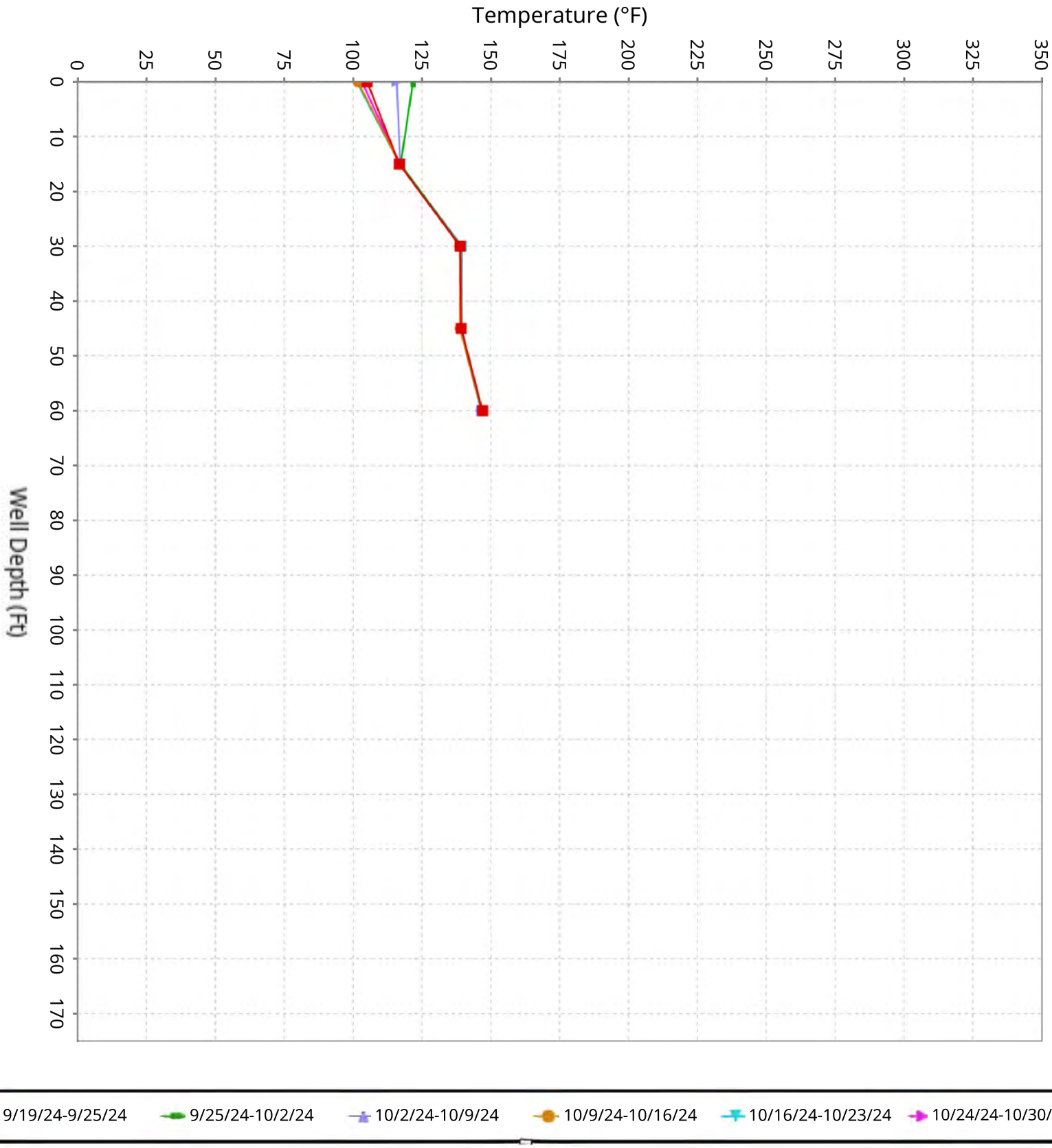
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-2

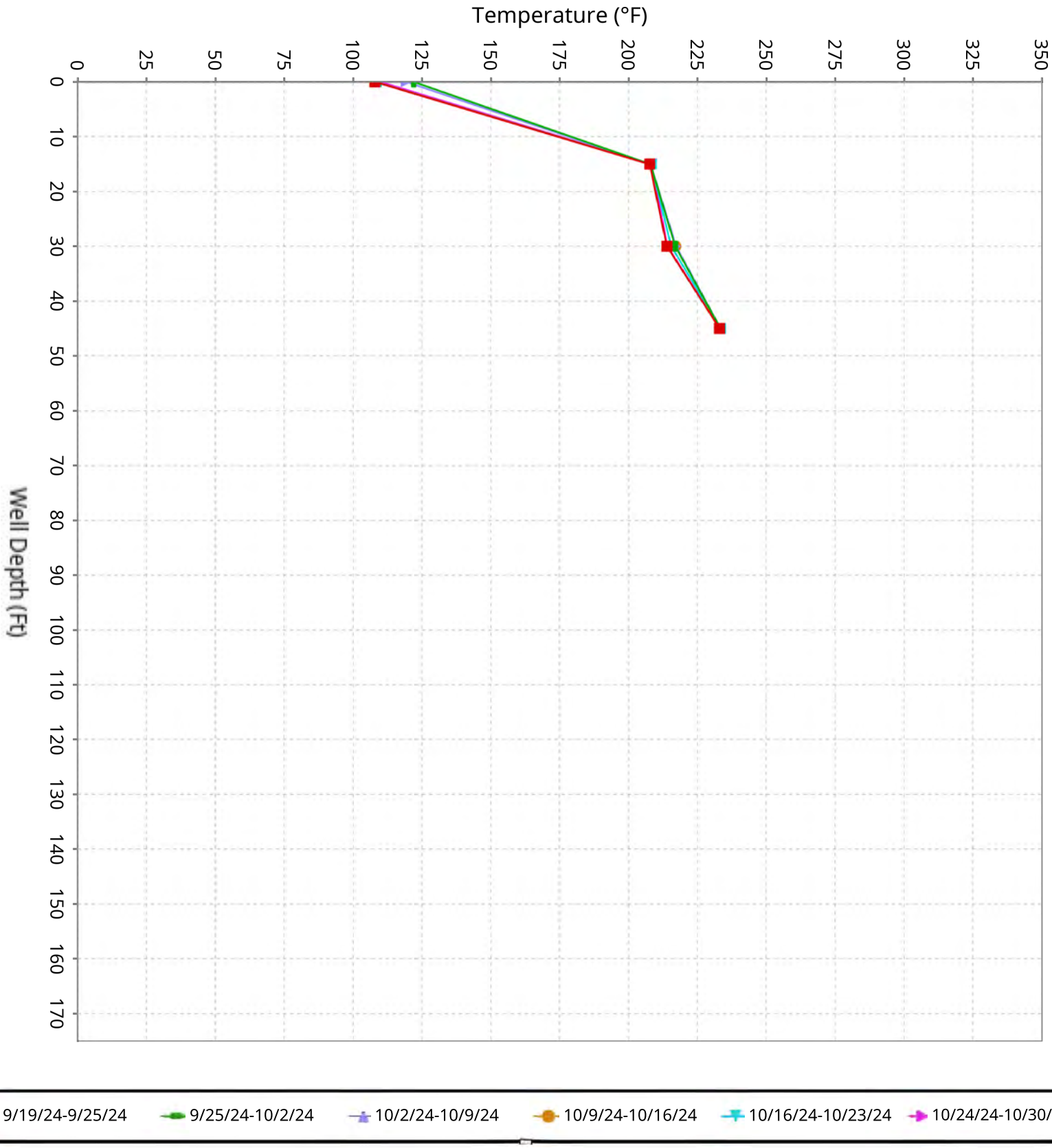
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-3

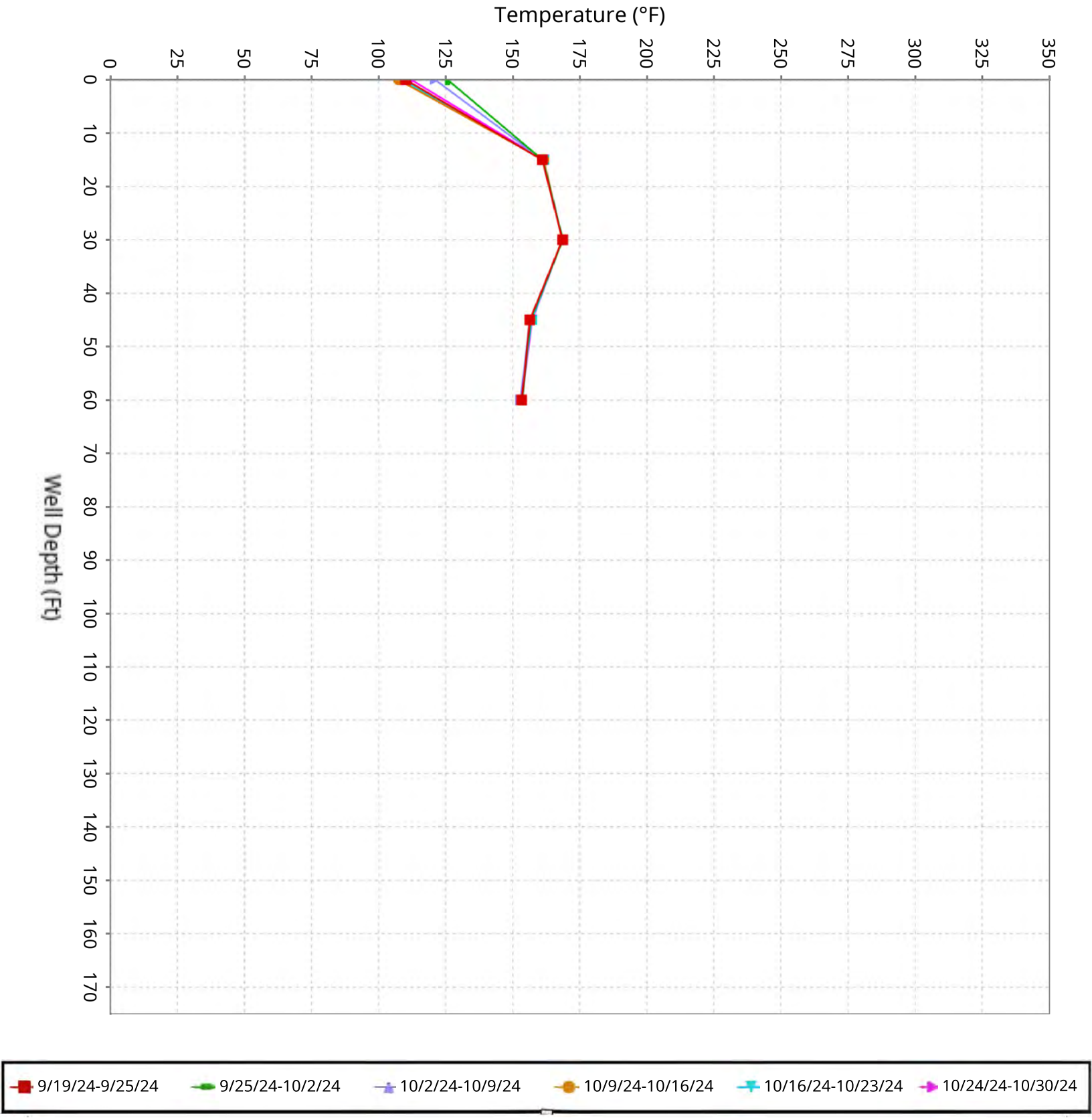
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-4

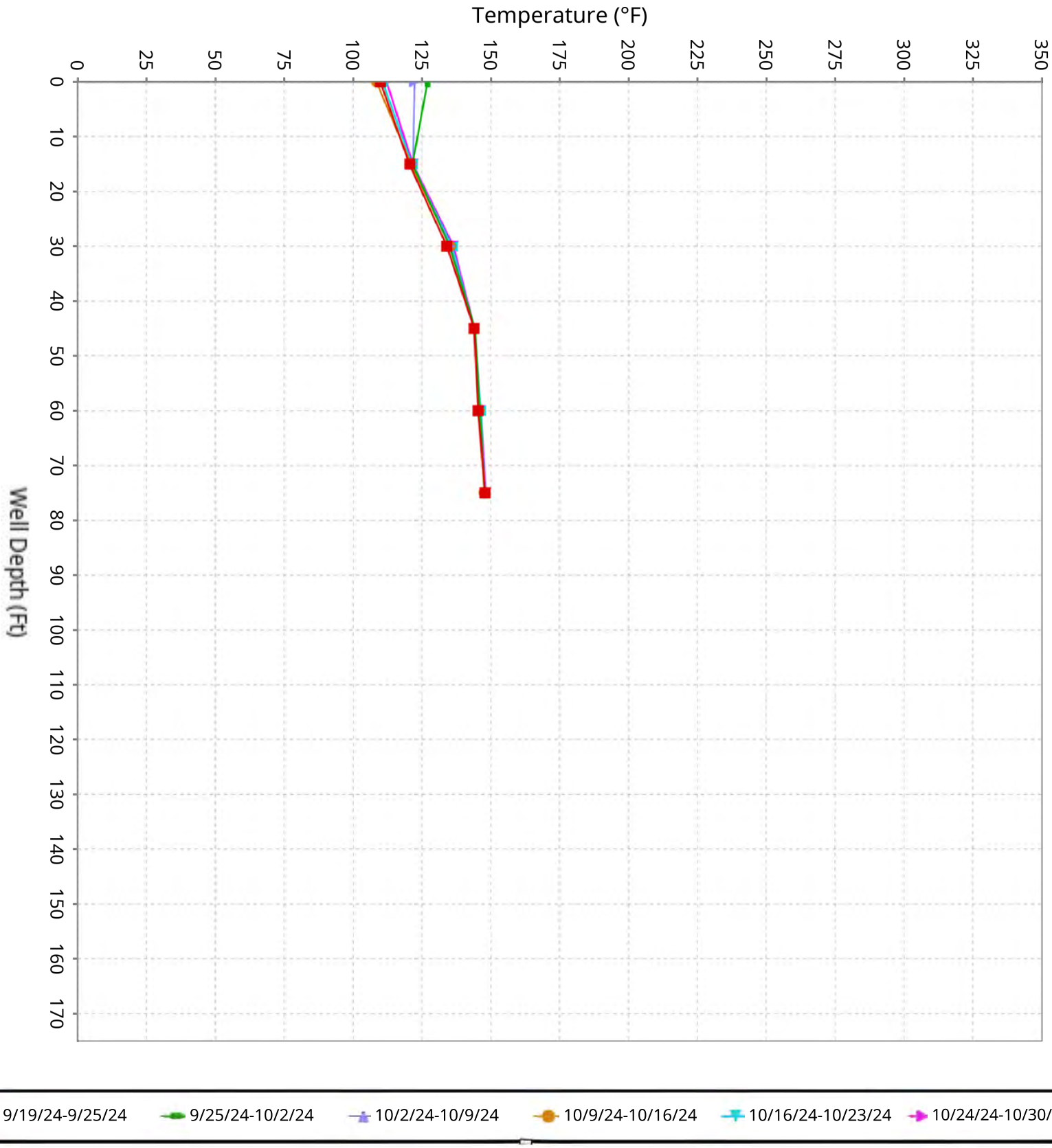
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-5

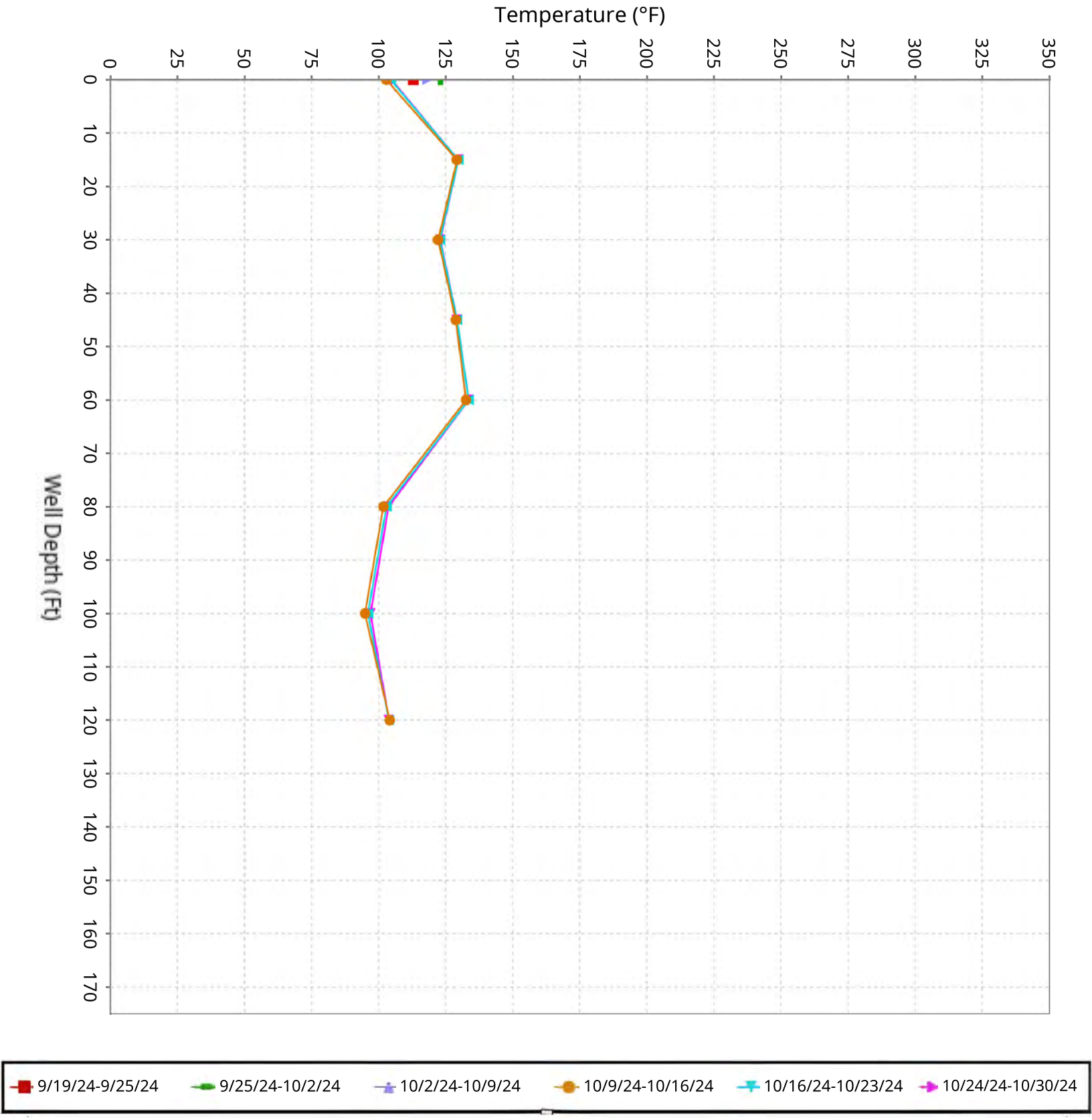
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-6

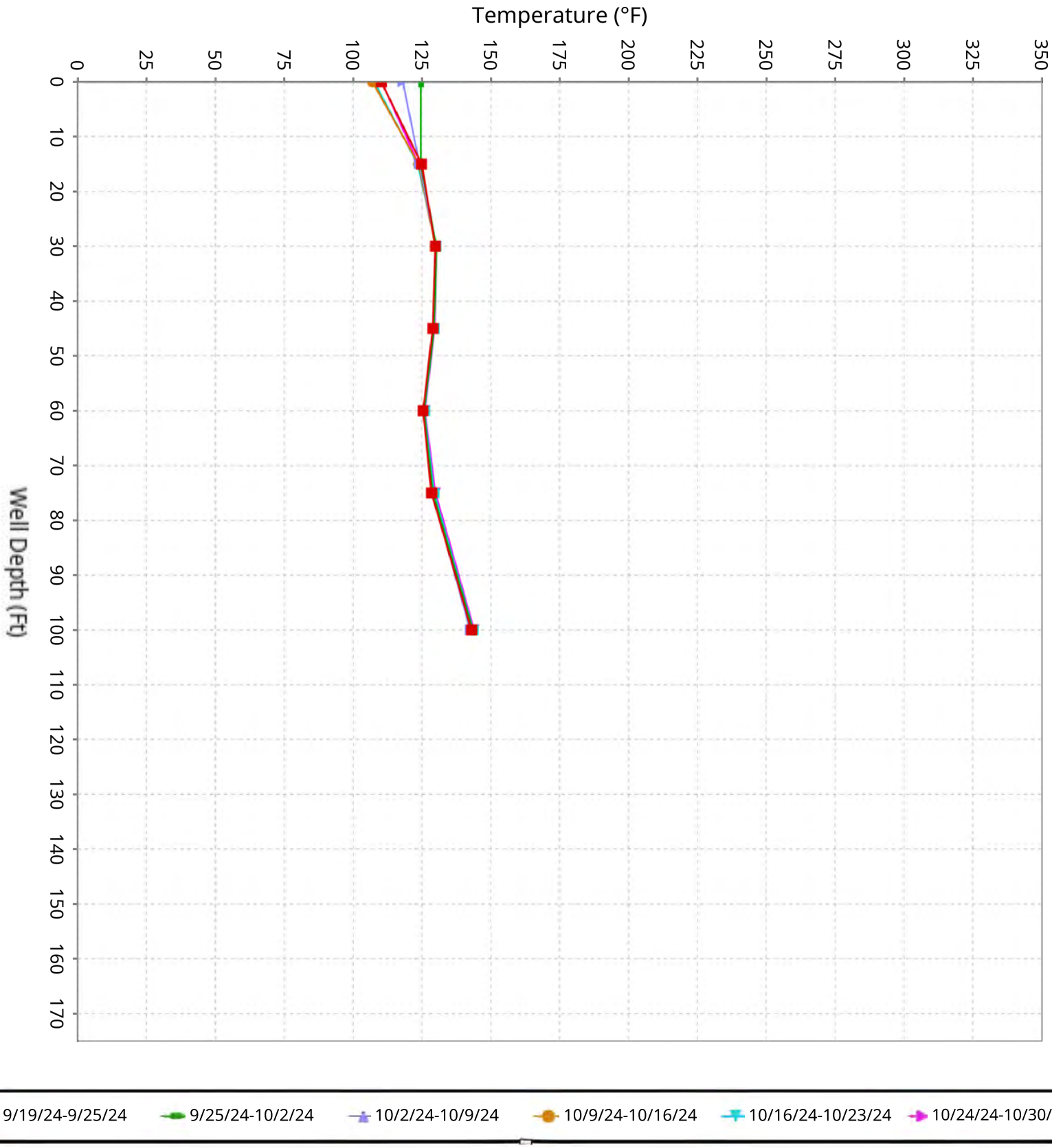
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-7

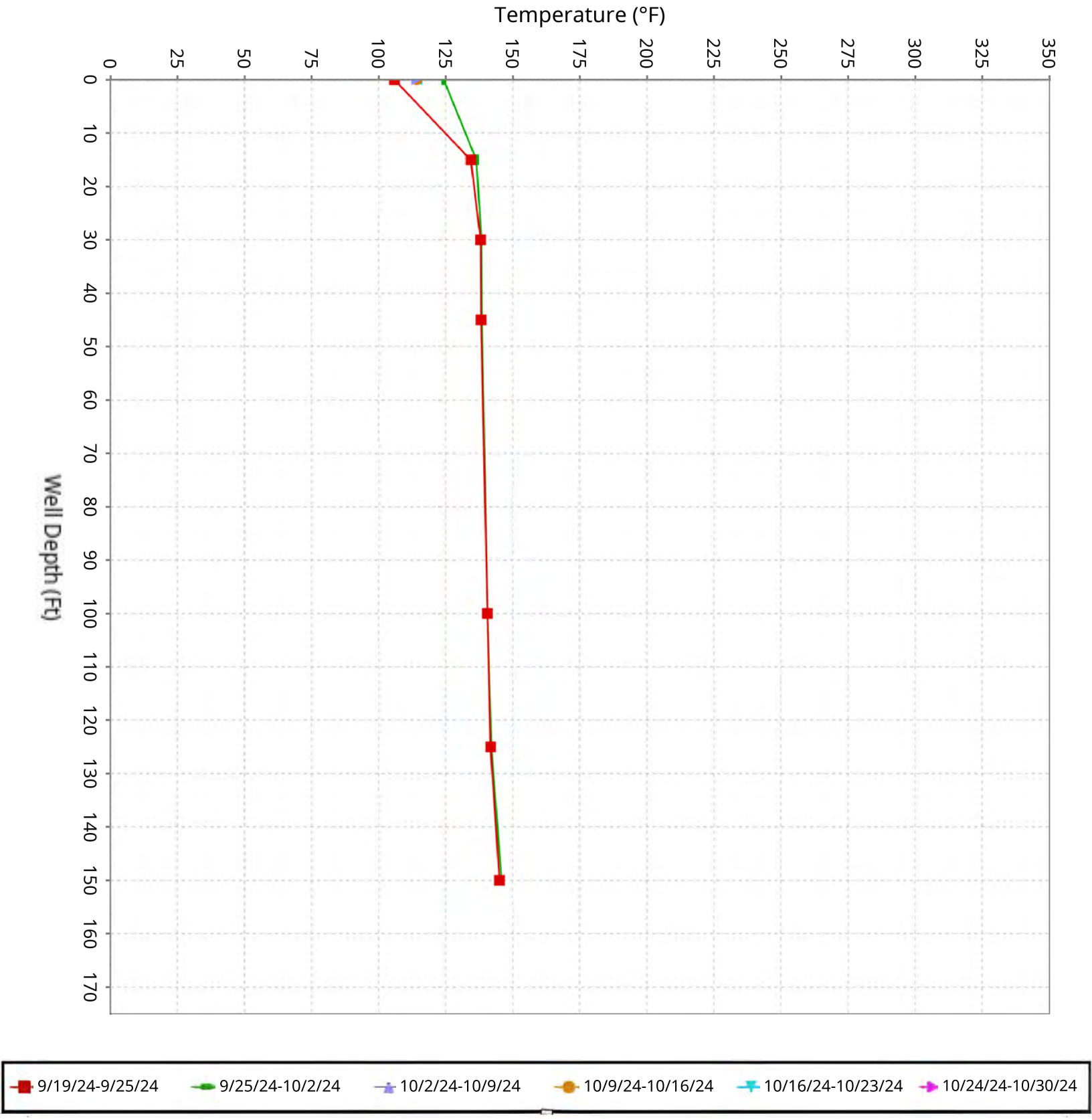
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-8

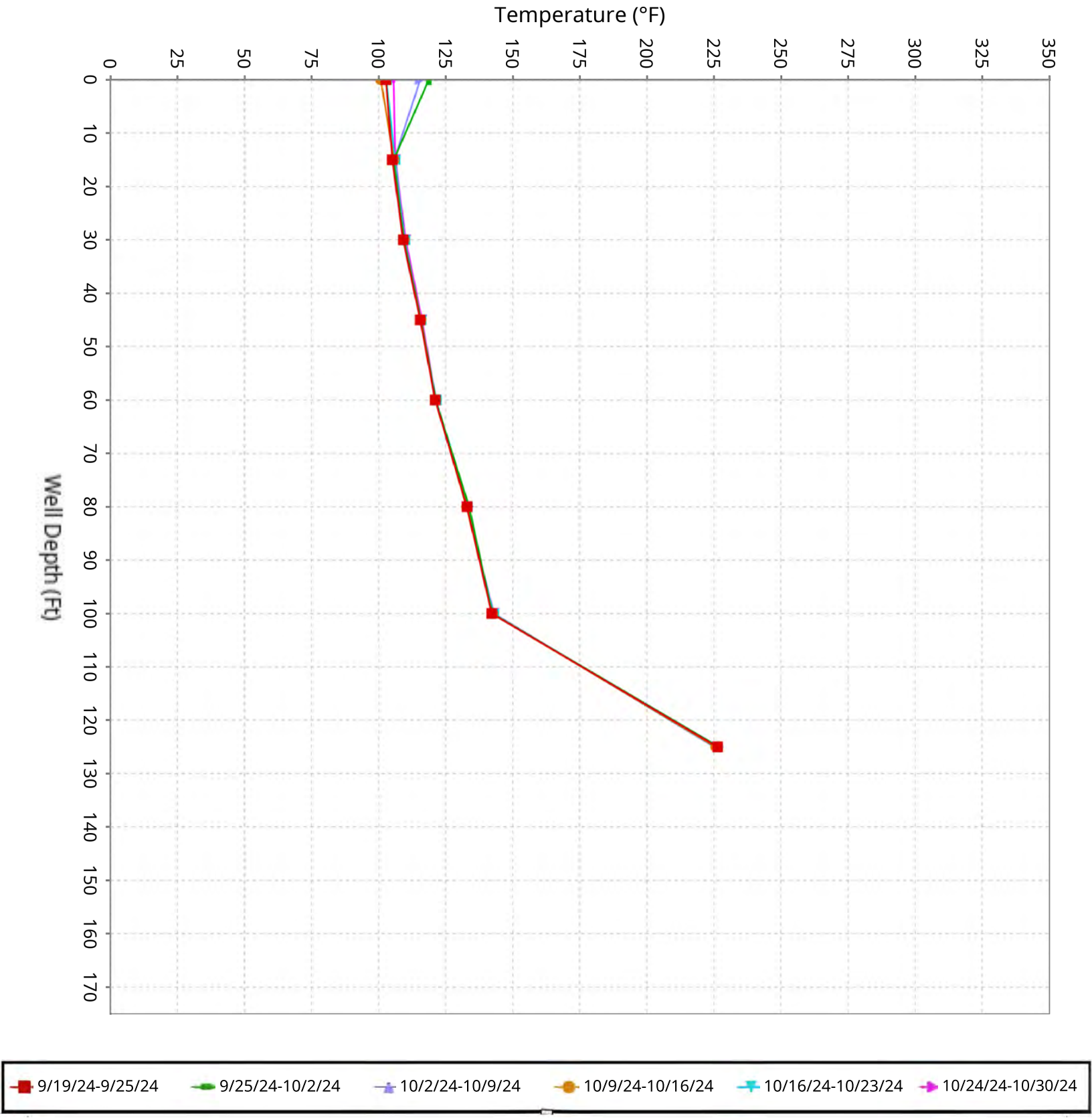
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-9

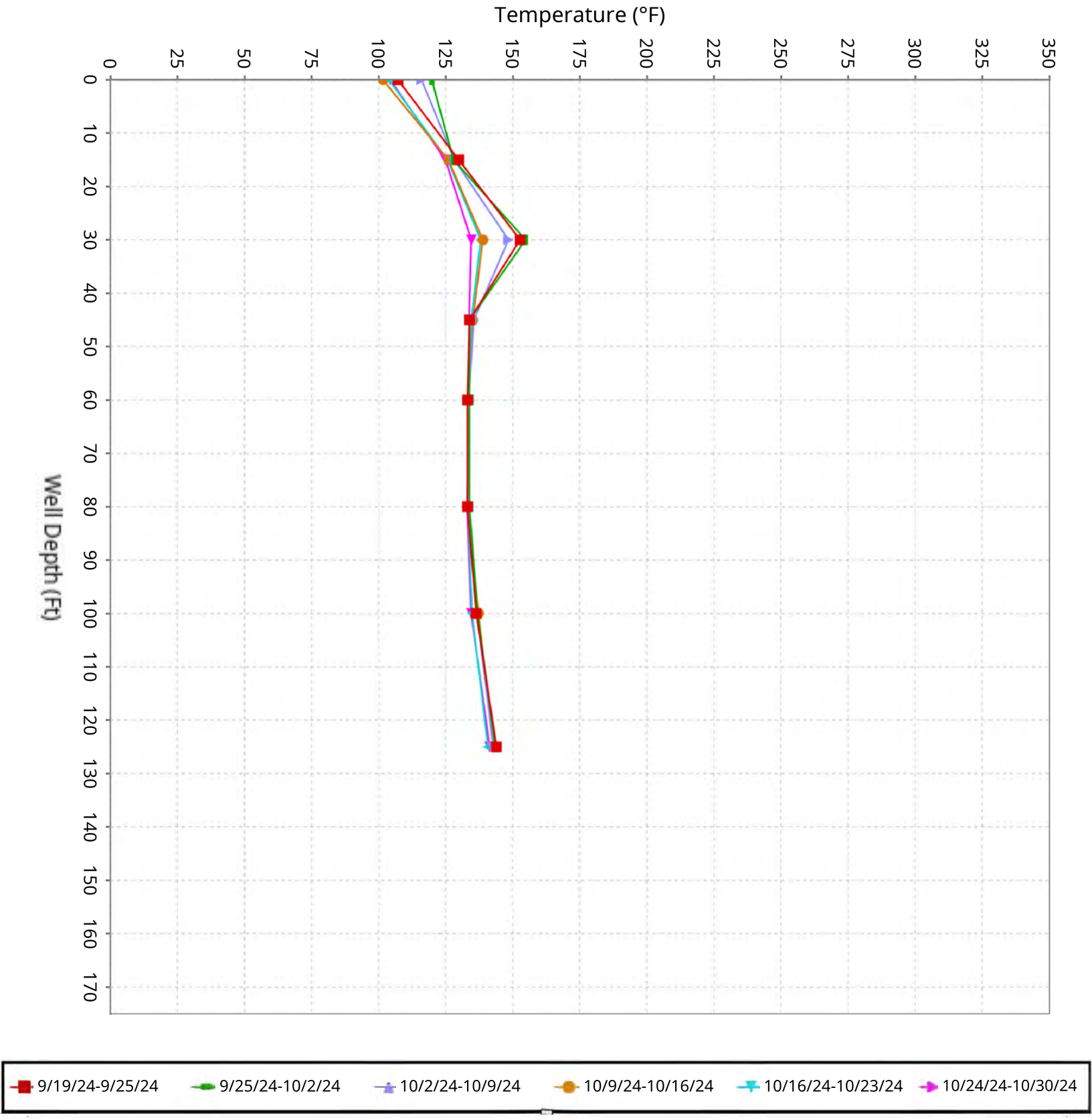
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-10

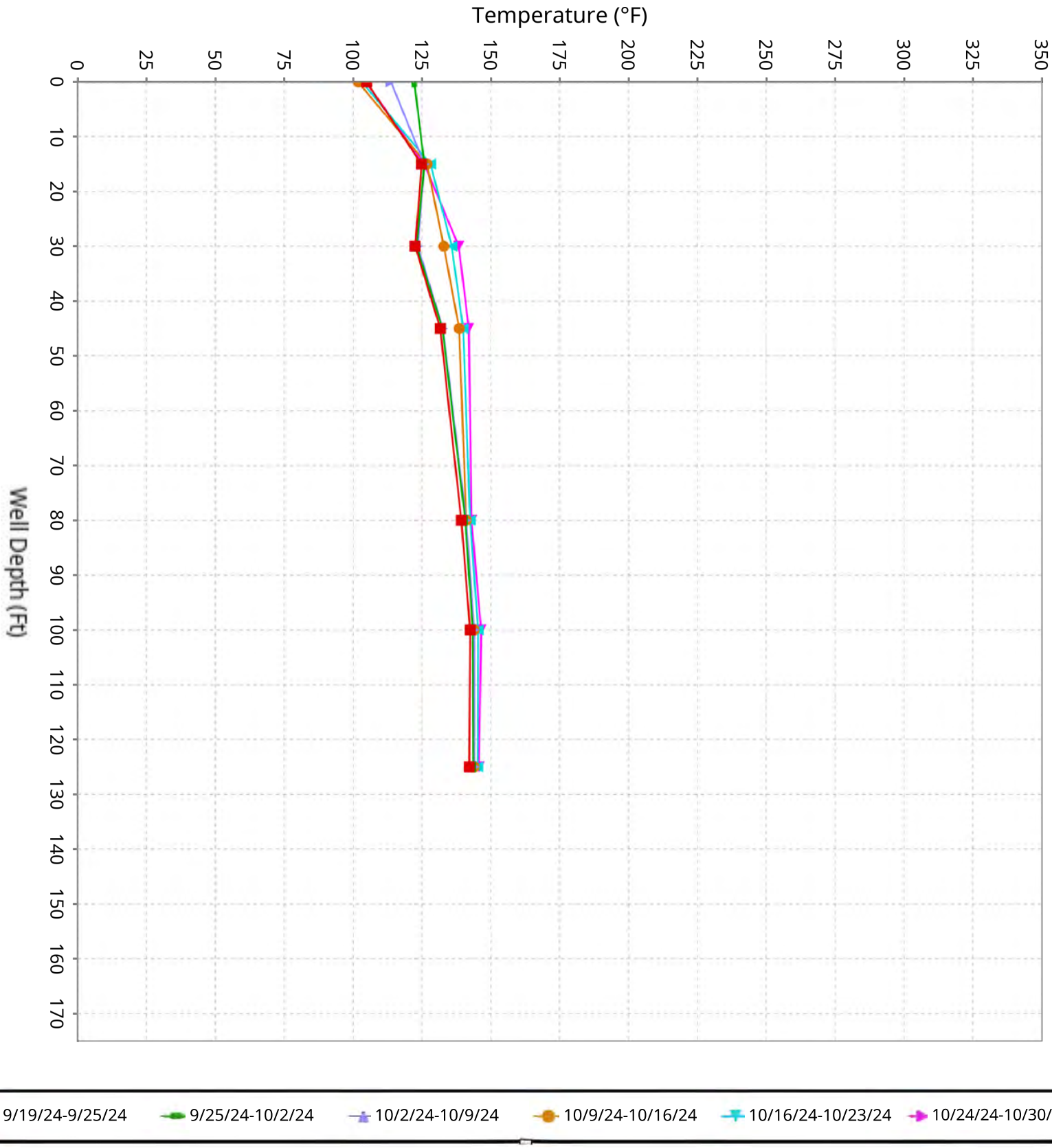
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-11

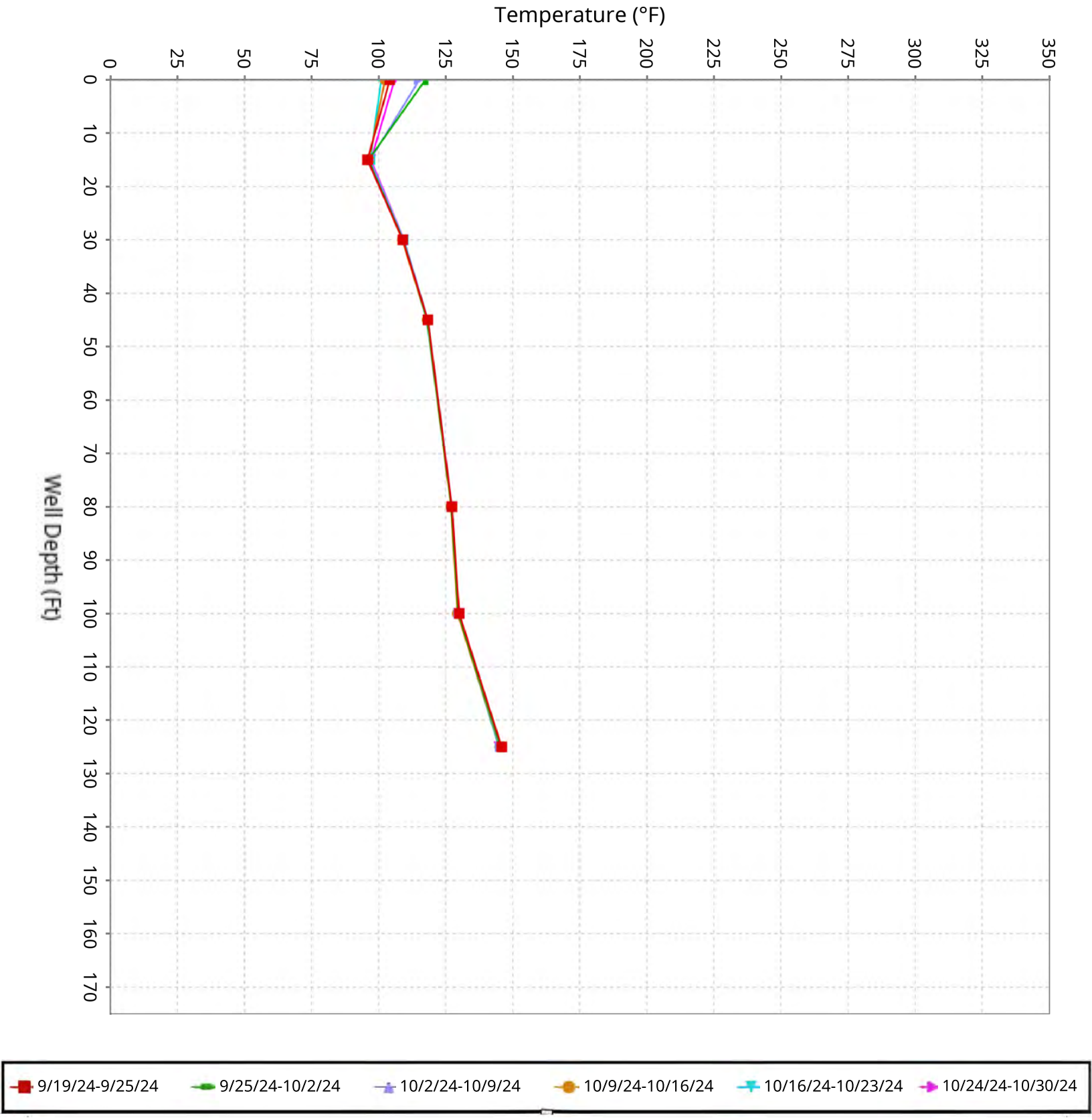
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-12

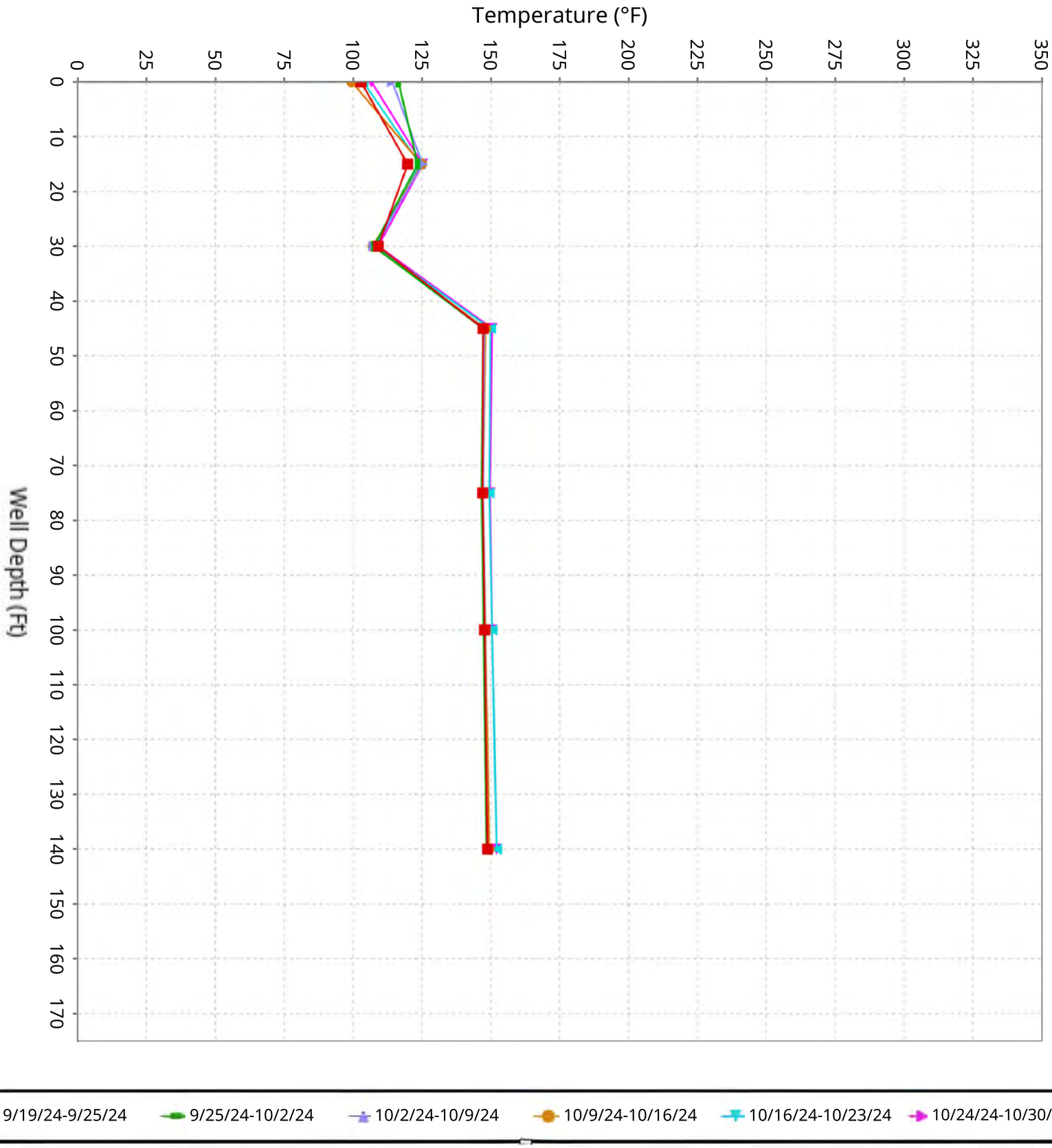
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-13

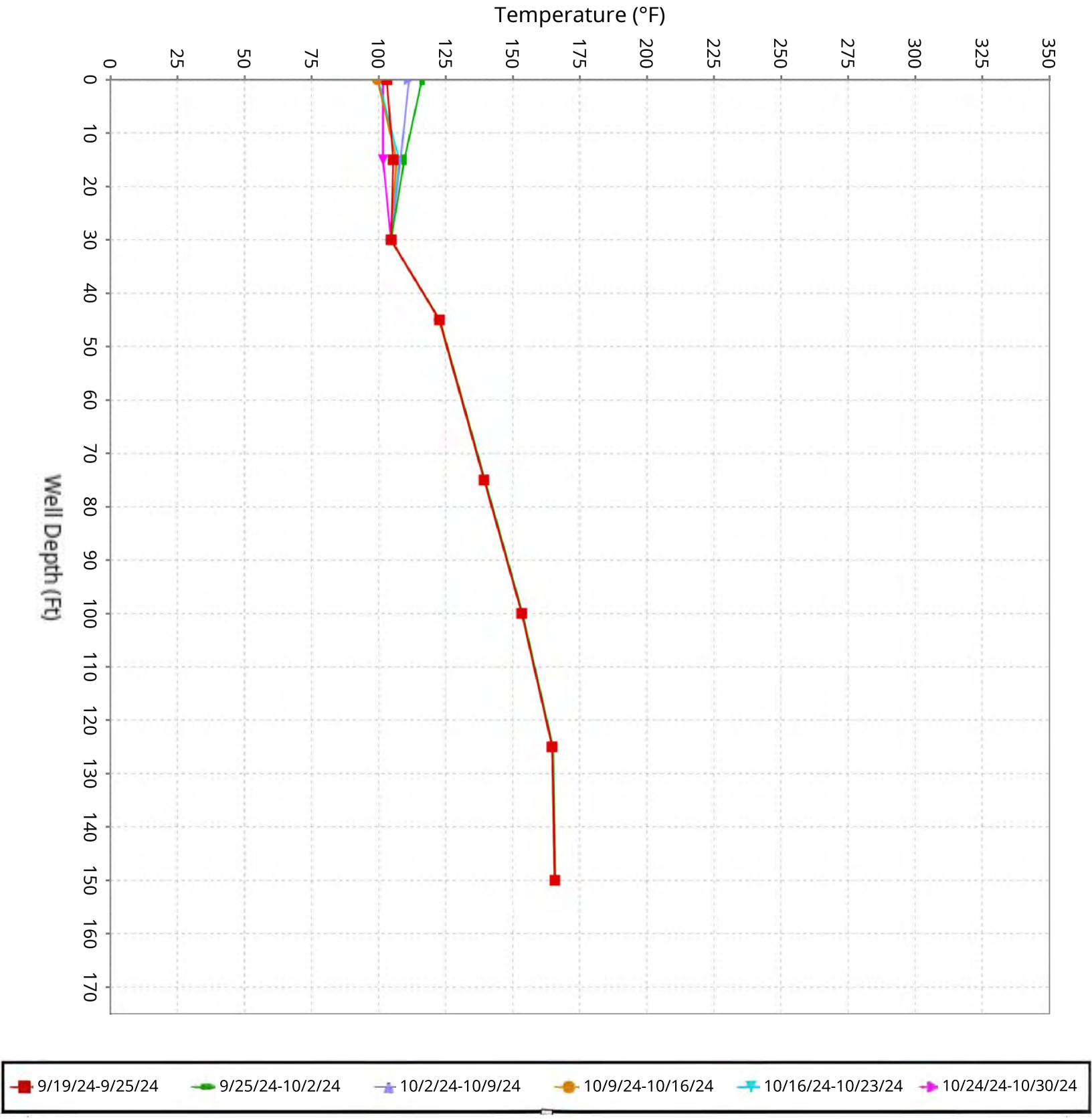
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-14

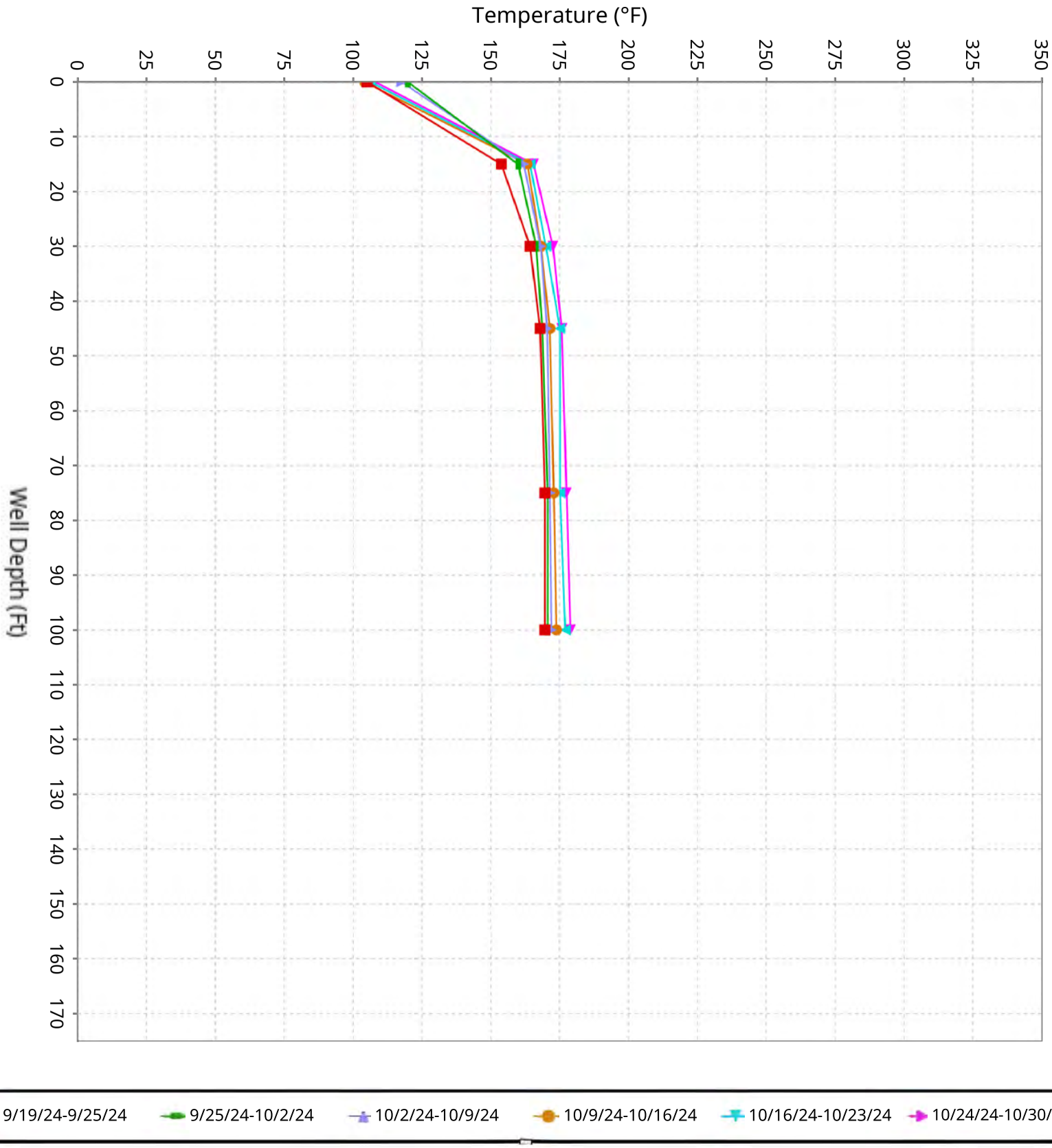
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-15

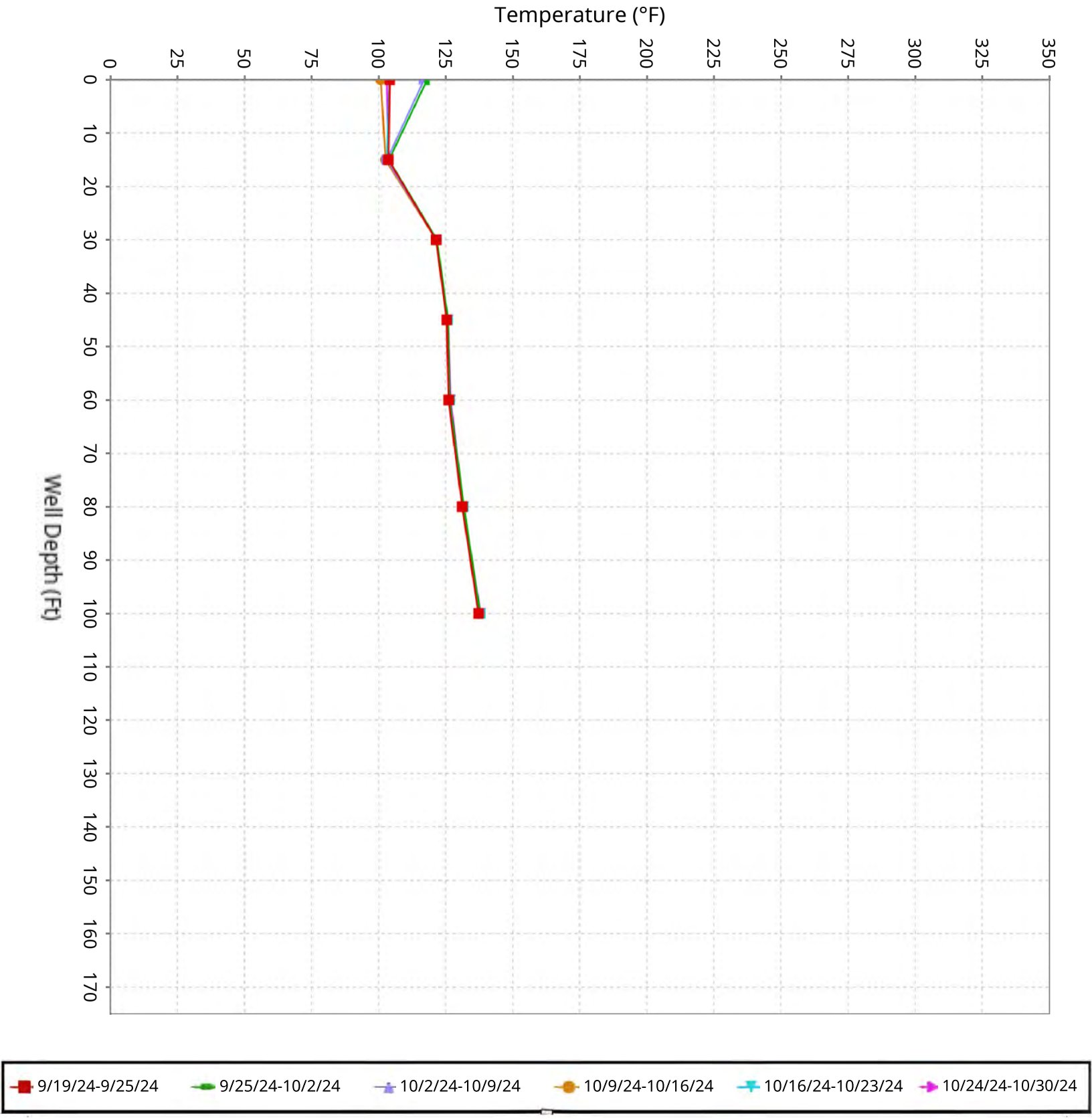
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-16

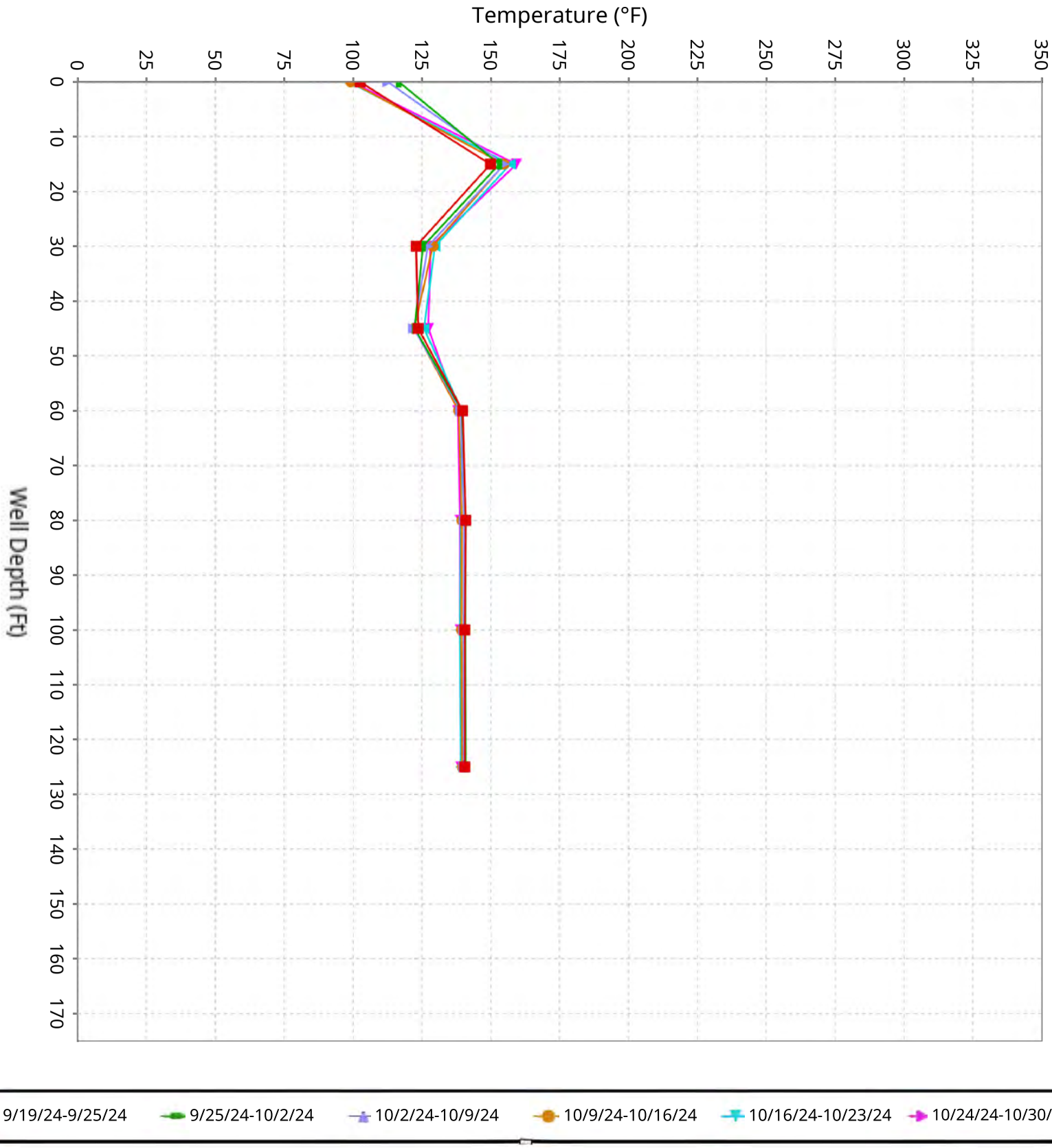
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-17

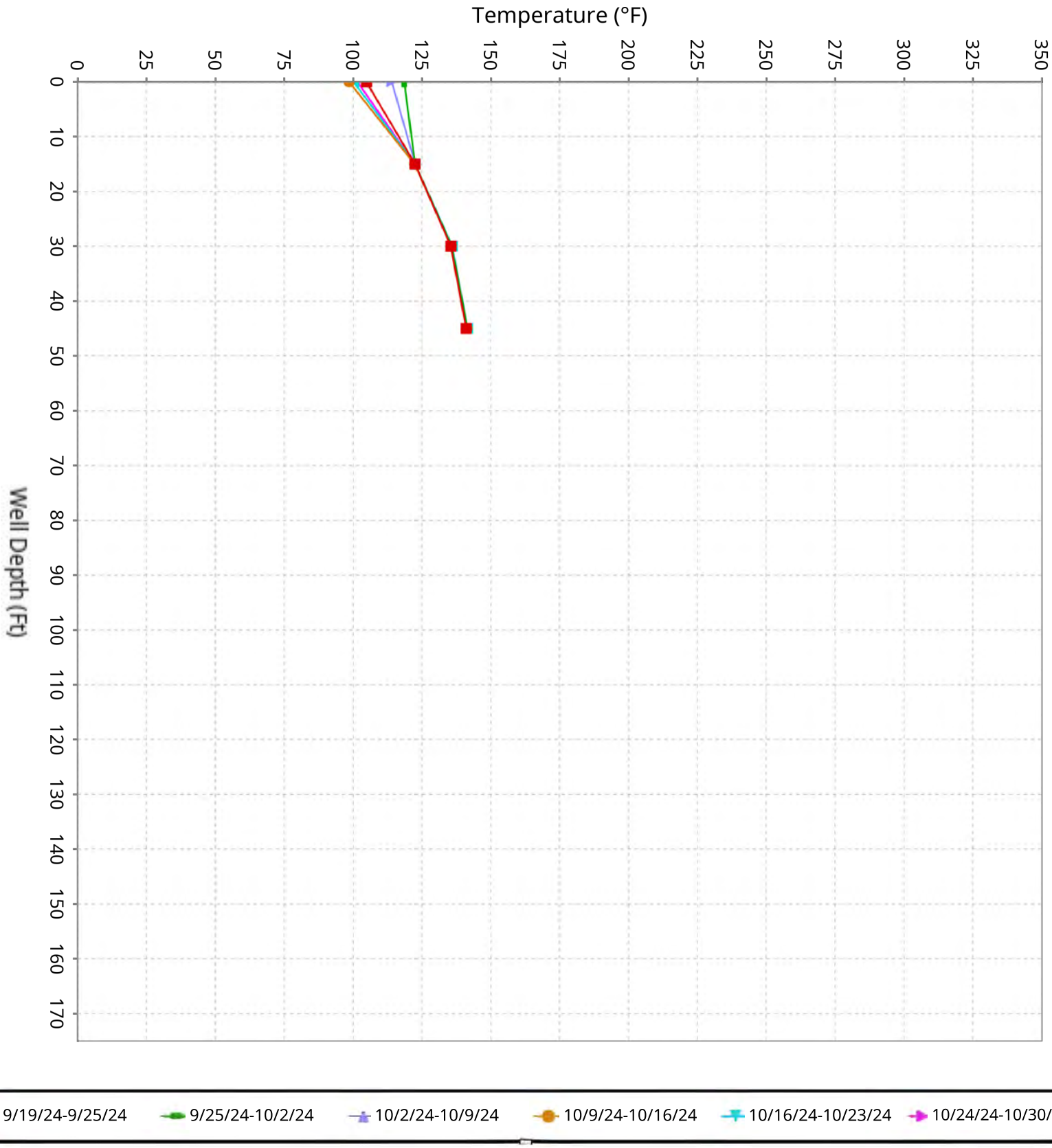
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-18

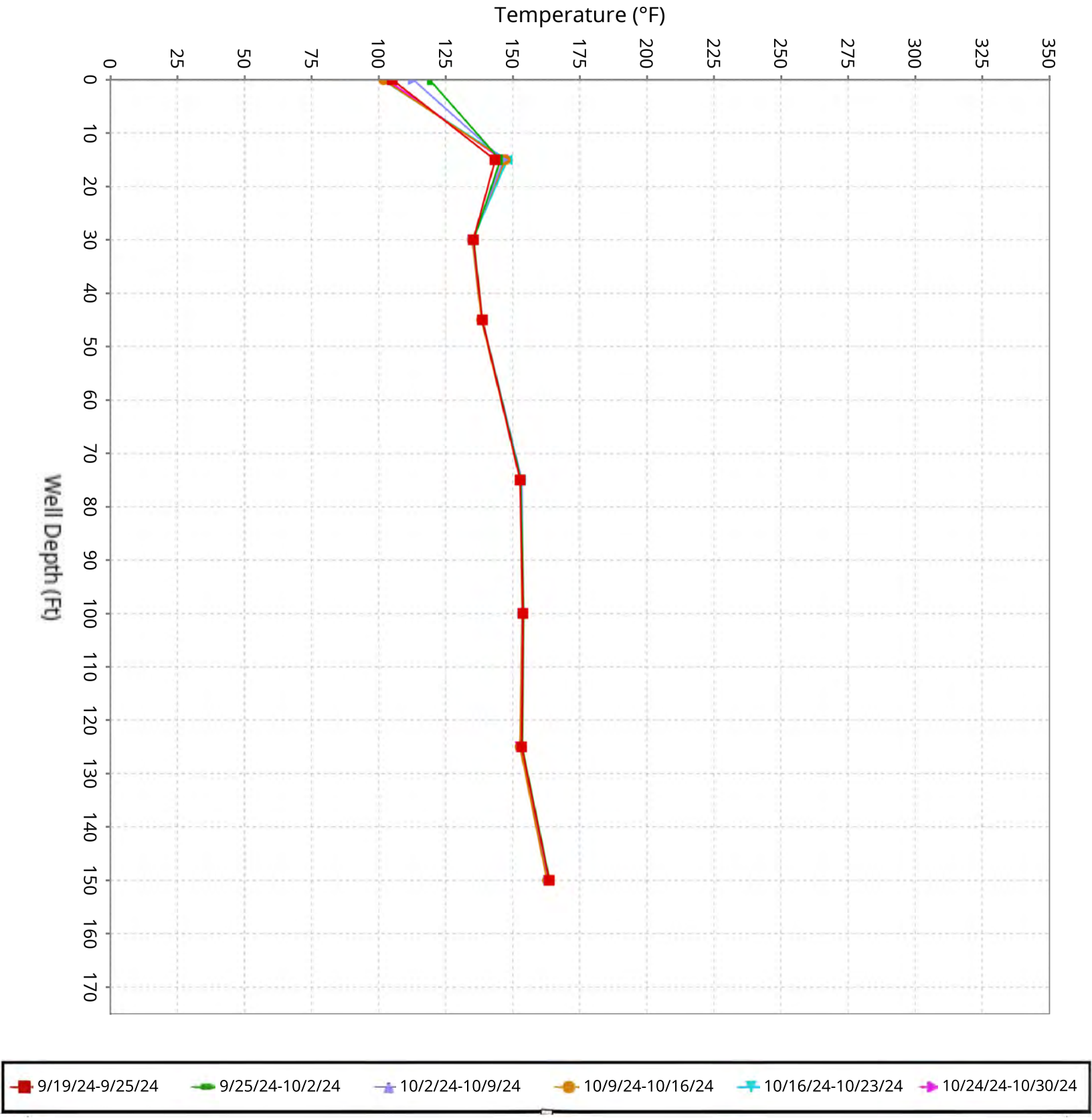
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-19

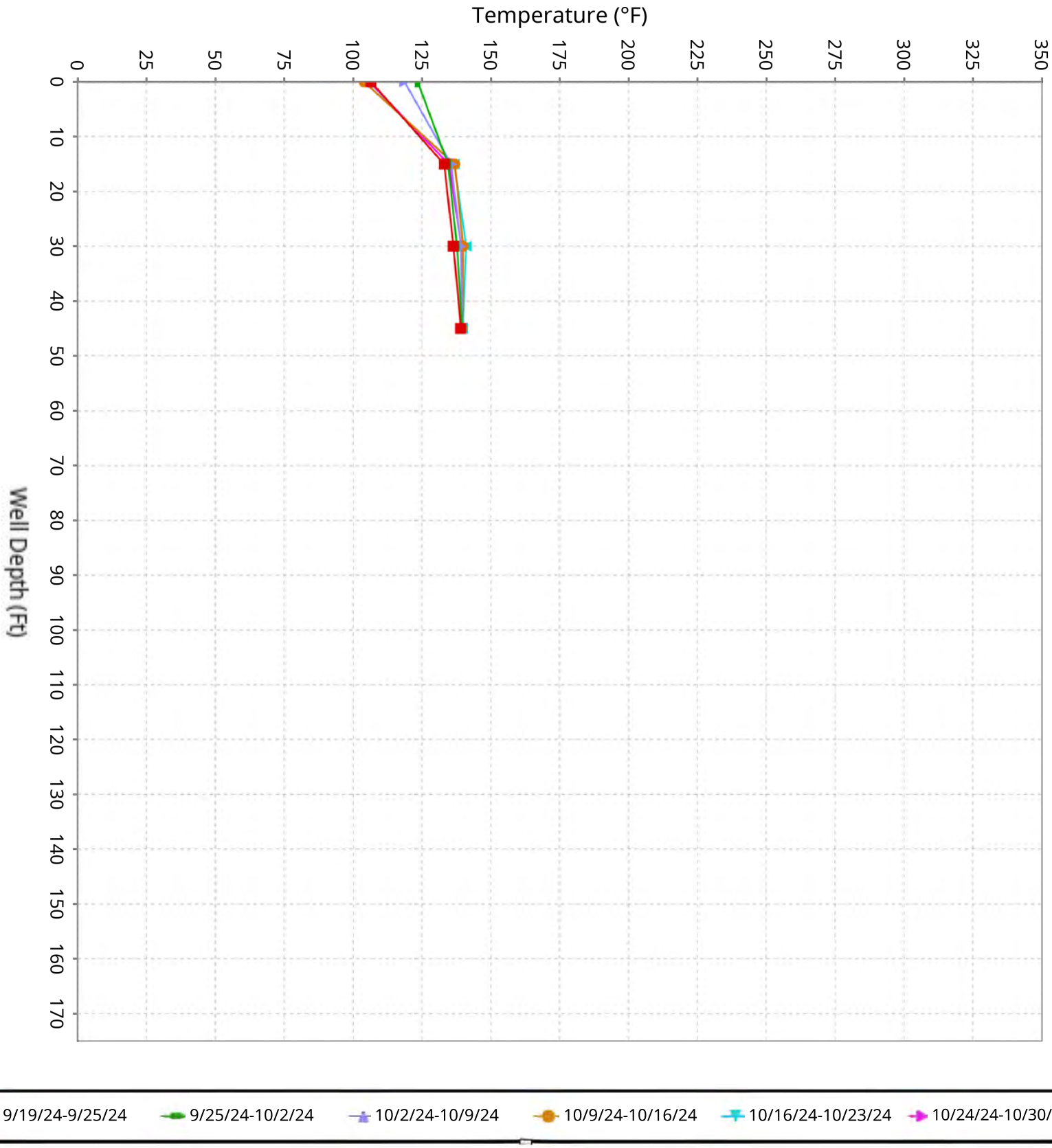
Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

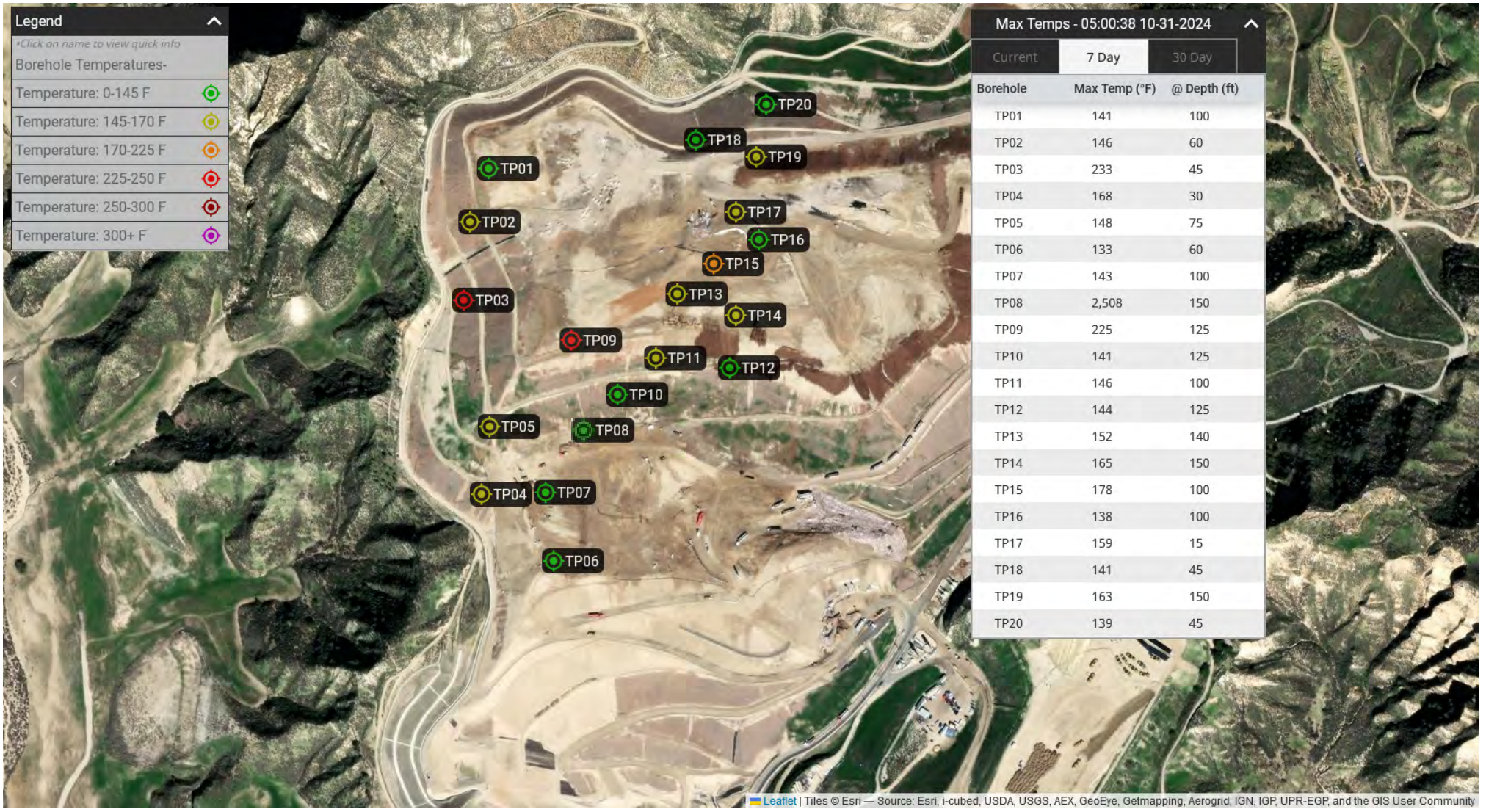
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-20

Maximum data for 9/19/2024 12:00 AM to 10/30/2024 11:59 PM



SCS ENGINEERS

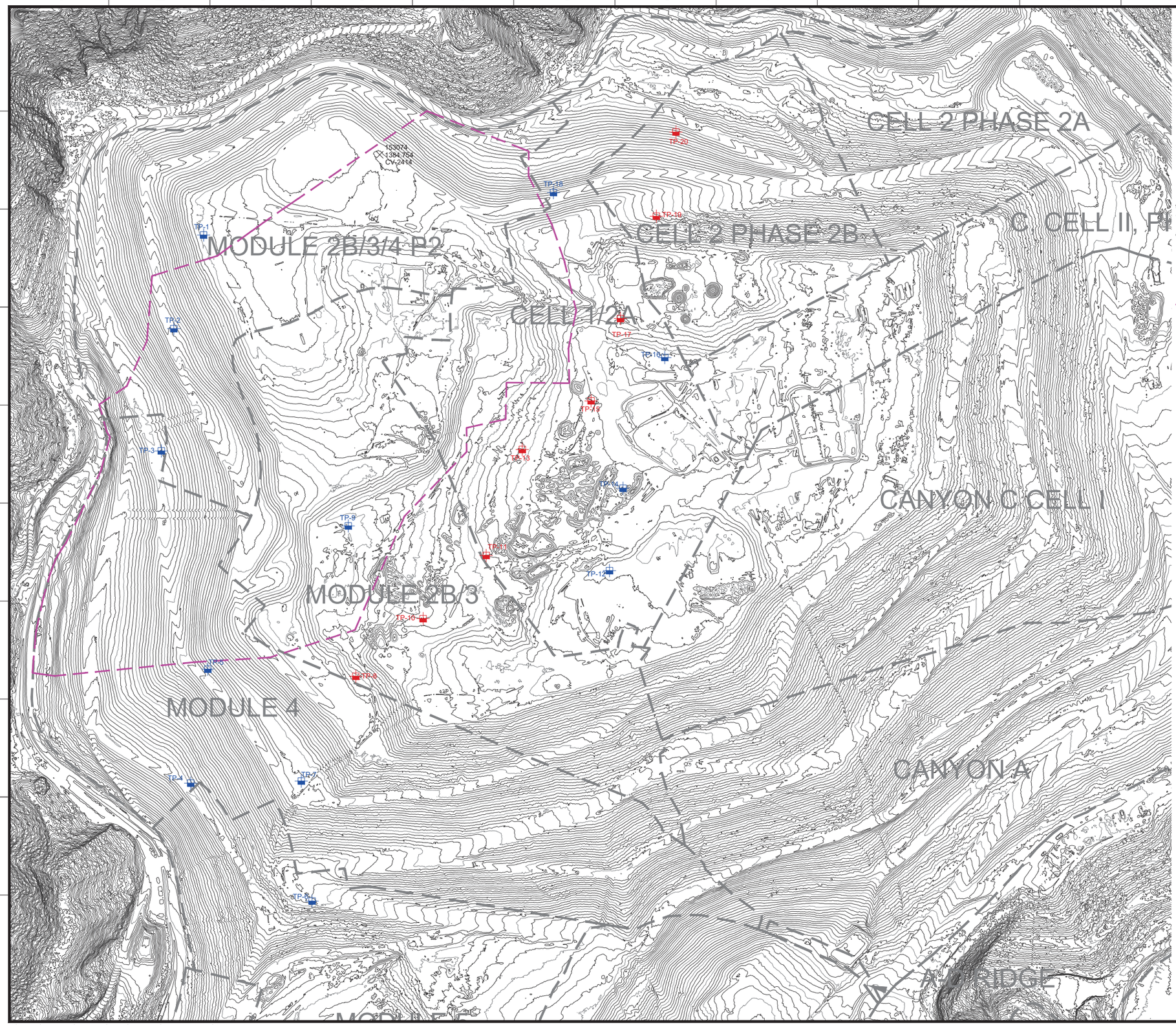
Maximum Vertical Temperature Map from Temperature Probes at Chiquita Landfill



Max Temps - 05:00:38 10-31-2024

Current | 7 Day | 30 Day

Borehole	Max Temp (°F)	@ Depth (ft)
TP01	141	100
TP02	146	60
TP03	233	45
TP04	168	30
TP05	148	75
TP06	133	60
TP07	143	100
TP08	2,508	150
TP09	225	125
TP10	141	125
TP11	146	100
TP12	144	125
TP13	152	140
TP14	165	150
TP15	178	100
TP16	138	100
TP17	159	15
TP18	141	45
TP19	163	150
TP20	139	45



N

GRAPHIC SCALE

130 65 0 130 260 390

SCALE: 1"=130'

LEGEND

- 1150 — EXISTING TOPOGRAPHIC CONTOUR
- EXISTING CELL LIMITS (APPROXIMATE)
- TP-XX — INSTALLED TEMPERATURE PROBES - STANDALONE
- TP-XX — INSTALLED TEMPERATURE PROBES INSTALLED WITHIN WELL CASING
- REACTION AREA BOUNDARY (APPROX) - BASED ON DATA REVIEW

GENERAL DRAWING NOTES:

1. EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN WAS PROVIDED BY PROPELLER. AERIAL PHOTOGRAPHY DATED JUNE 12, 2024.
2. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.

NO.	REVISION	DATE

SHEET TITLE: OVERALL INSTALLED TEMPERATURE PROBE SITE PLAN

PROJECT TITLE: TEMPERATURE PROBE INSTALLATION PROJECT CHIQUITA LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX. (562) 427-0805

PROJ. NO: 01204123.35 | DSN. BY: JH/SRM | DWN. BY: AEK | CHK. BY: WCH | ACAD VER: ENGINEERS | APP. BY: WCH

DATE: 06/14/2024

SCALE: AS SHOWN

SHEET: 1

C:\Users\akarram\Desktop\Work\Chiquita\Temp Probes\2024 CCLF Temp.Probe AK_2024-06-14.dwg Jun 14, 2024 - 11:49am By: akarram

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT D TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

December 10, 2024
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Modified Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of November 2024, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 12/6/24. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2, as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line.

The rationale that serve as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include the following:

- LFG wellhead temperatures in excess of approximately 160 degrees Fahrenheit.
- Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.
- The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.
- Accelerated settlement of the landfill surface, defined as approximately 18 inches or greater within a 60-day period, and cracks in landfill cover. This corresponds to a strain value (i.e., settlement rate) rate of 3 percent per year for areas with a 300-foot waste column depth, which we believe is a reasonable average depth in the subject area of interest.
- First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint (often described as "chemical-like" and distinctly different from typical LFG or landfill working face odors).

- Observations of subsurface waste conditions and characteristics as noted on borehole drilling logs for recently installed new wells and/or probes.

- Subsurface temperatures recorded at the in-situ waste temperature probes during November 2024.

- Subsurface temperatures and pressures noted during the sonic drilling of new waste temperature probes during November 2024.

ADJUSTMENTS TO THE ESTIMATED EXTENT OF ETLF CONDITIONS (DASHED MAGENTA LINE)

Near CV-2475 / TP-15

The alignment of the estimated extent of ETLF conditions (dashed magenta line) has been adjusted approximately 50 feet to the southeast to encompass extraction well CV-2475, which is co-located with temperature probe TP-15. The November data indicated that gas wellhead temperatures appeared to sustain an increase at CV-2475 (compared to measurements recorded during the previous six months) and that methane concentrations remained suppressed. Also, the temperatures recorded at the 45-foot, 75-foot, and 100-foot intervals in TP-15 demonstrate an increasing trend compared to measurements recorded during the previous six months.

The Reaction Committee has identified potential causes of this trend. Specifically, well CV-2475 is positioned immediately adjacent to an old, deep horizontal collector (H-59 at an elevation of 1280 feet) that extends hundreds of feet into the reaction area, so it is possible that the source of the heat and reaction gas at this vertical well is offset some distance away and is being conveyed toward CV-2475 through H-59's piping and trench. In addition, CV-2475 is equipped with a dedicated dewatering pump, so the recent increase in temperatures and the presence of increased reaction gas (as opposed to typical landfill gas) may be attributable to the lowering of perched leachate levels in this vicinity, which is enabling movement of heat and gas through the void spaces.

The November data recorded at adjacent wells CV-2463 and CV-2464, which are 100 feet and 75 feet (horizontally) from CV-2475, respectively, indicates normal gas wellhead temperature ranges for anaerobic digestion and methanogenesis. The gas composition data at CV-2464 indicates that, while methane content is lower than normal, this appears to be attributable to a moderate amount of air intrusion more so than ETLF conditions. The oxygen concentrations remain relatively low (between 1 and 4 percent) and wellhead adjustments performed as part of routine tuning and balancing are intended to reduce air intrusion and achieve equilibrium in order to prevent potential subsurface oxidation. The hydrogen concentrations measured at both of these wells are lower than typical reaction gas wells and carbon monoxide content, is below 700 ppm, and thereby inconsistent with reaction area levels. Thus, it appears the ETLF conditions in this vicinity are limited to only a small, discrete area near CV-2475/TP-15.

Accordingly, despite the potential that ETLF characteristics being observed at well CV-2475 and probe TP-15 are attributable to conditions within the reaction area, as delineated during the prior month, the Reaction Committee believes it is prudent to institute this slight adjustment of this data-driven boundary.

Near CV-2449

The alignment of the estimated extent of ETLF conditions (dashed magenta line) has been adjusted approximately 30 feet to the east to encompass extraction well CV-2449. The November data indicates that gas wellhead temperatures had increased at CV-2449 (compared to measurements recorded during the previous six months), and that methane concentrations had decreased while hydrogen is elevated.

Similar to well CV-2475, well CV-2449 is positioned in close proximity to two old, deep horizontal collectors (H-56 at an elevation of 1240 feet, and H-60 at an elevation of 1225 feet). H-56 extends along the reaction area boundary in a north-south direction, whereas H-60 extends hundreds of feet to the west into the reaction area, so it is possible that the source of the heat and reaction gas at this vertical well is offset some distance away and is being conveyed toward CV-2449 through the H-56's piping and trenches. Furthermore, CV-2449 is equipped with a dedicated dewatering pump, so the recent increase in temperatures and the presence of increased reaction gas (as opposed to typical landfill gas) may be attributable to the lowering of perched leachate levels in this vicinity, which is enabling movement of heat and gas through the void spaces.

The November data recorded at adjacent wells CV-2455 and CV-24126, which are 70 feet and 140 feet from CV-2449, respectively, indicates normal gas wellhead temperature ranges for anaerobic digestion and methanogenesis. The gas composition data at CV-2455 indicates that, while methane content is lower than normal, this appears to be attributable to a moderate amount of air intrusion more so than ETLF conditions. The oxygen concentrations remain relatively low and wellhead adjustments performed as part of routine tuning and balancing are intended to reduce air intrusion and achieve equilibrium in order to prevent potential subsurface oxidation. The hydrogen concentrations measured at CV-2455 are lower than typical reaction gas wells and carbon monoxide content is below 250 ppm; such readings are inconsistent with reaction area levels. Thus, it appears the ETLF conditions in this vicinity are limited to only a small, discrete area at CV-2449.

Accordingly, despite the potential that ETLF characteristics being observed at well CV-2449 are attributable to conditions within the reaction area as delineated during the prior month, the Reaction Committee believes it is prudent to institute this slight adjustment of this data-driven boundary.

Near CV-1901

The alignment of the estimated extent of ETLF conditions (dashed magenta line) has been adjusted approximately 130 feet to the southeast to exclude extraction well CV-1901. The data recorded during the past year indicates no evidence of ETLF conditions at this extraction well (i.e., temperatures, pressures, and gas composition are typical for anaerobic digestion and methanogenesis). Thus, the Reaction Committee believes it is prudent to institute this slight contraction of this data-driven boundary.

Near CV-2349

The alignment of the estimated extent of ETLF conditions (dashed magenta line) has been adjusted approximately 70 feet to the north to exclude extraction well CV-2349. The data recorded during the past year indicates no evidence of ETLF conditions at this extraction well (i.e., temperatures, pressures, and gas composition are typical for anaerobic digestion and methanogenesis). Thus, the

Reaction Committee believes it is prudent to institute this slight contraction of this data-driven boundary.

The Reaction Committee reviewed the temperature measurements recorded during November 2024 by the in-situ temperature monitoring probes. For the past six months, three (3) of the twenty (20) probes (TP-2, 3, and 9) are located within the estimated extent of ETLF conditions (dashed magenta line), and thirteen (13) probes are positioned adjacent to (within 200 feet) of this boundary. As noted above, the delineation of ETLF conditions is being modified to encompass TP-15. It is the Committee's opinion that the temperatures recorded by the 12 probes outside of the boundary during November 2024 are not indicative of a subsurface reaction and do not substantiate a decision to adjust the boundary of the reaction area (beyond the adjustments described above) at this time.

The Reaction Committee also evaluated the concentration of hydrogen in landfill gas (LFG) during November 2024. Recall that certain wells positioned to the south and east of the reaction area boundary (where dewatering pumping was reactivated) had demonstrated some increased hydrogen content in the LFG during the Reaction Committee's review of the data in previous months; however, based on the November data, only two of these wells (CV-2312 and CV-2333) have sustained hydrogen concentrations greater than 2 percent for at least three months. The Reaction Committee noted in its review of the data that these two wells did not exhibit elevated temperatures, such that there was no evidence of the increased heat that is typical with ETLF conditions present at these wells. The Committee suspects this increased hydrogen content may be attributable to wells believed to be intercepting gas collected from within the reaction area by existing horizontal collectors in close proximity. In the case of well CV-2333, the extensive dewatering efforts that have occurred over the past several months may be contributing to movement of LFG with elevated hydrogen from the adjacent reaction area. Also, the wells positioned around CV-2312 do not contain hydrogen greater than 2 percent, nor heat or poor gas quality. Thus, the presence of elevated hydrogen in these two locations, in isolation, does not suggest that ETLF conditions are expanding south and east of the delineated boundary. Accordingly, the Reaction Committee does not believe an adjustment to the boundary of the reaction area (beyond the adjustments described above) is merited at this time.

As presented on the Drawing included as **Attachment A**, the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Because the ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell, the Reaction Committee finds no basis to modify the Reaction Area boundary as prescribed in Condition 9a at this time.

There was no dissenting opinion among the Reaction Committee members regarding this monthly determination. Supporting data is presented on the Drawing included as **Attachment A.** The maximum temperature measurements recorded at the 20 in-situ waste temperature monitoring probes during October are presented in **Attachment B** in graphical format. The landfill gas wellhead temperatures recorded at the extraction wells in the vicinity of the data-driven reaction area boundary are reflected on the isothermal gradient range map present as **Attachment C**. The carbon monoxide (CO) concentrations measured at the landfill gas wellheads are depicted on the range map presented as **Attachment D**. The electronic database and recordkeeping platform enables these measurements to be downloaded into a tabular spreadsheet format, which can be submitted to the South Coast Air Quality Management District under separate cover, if requested.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

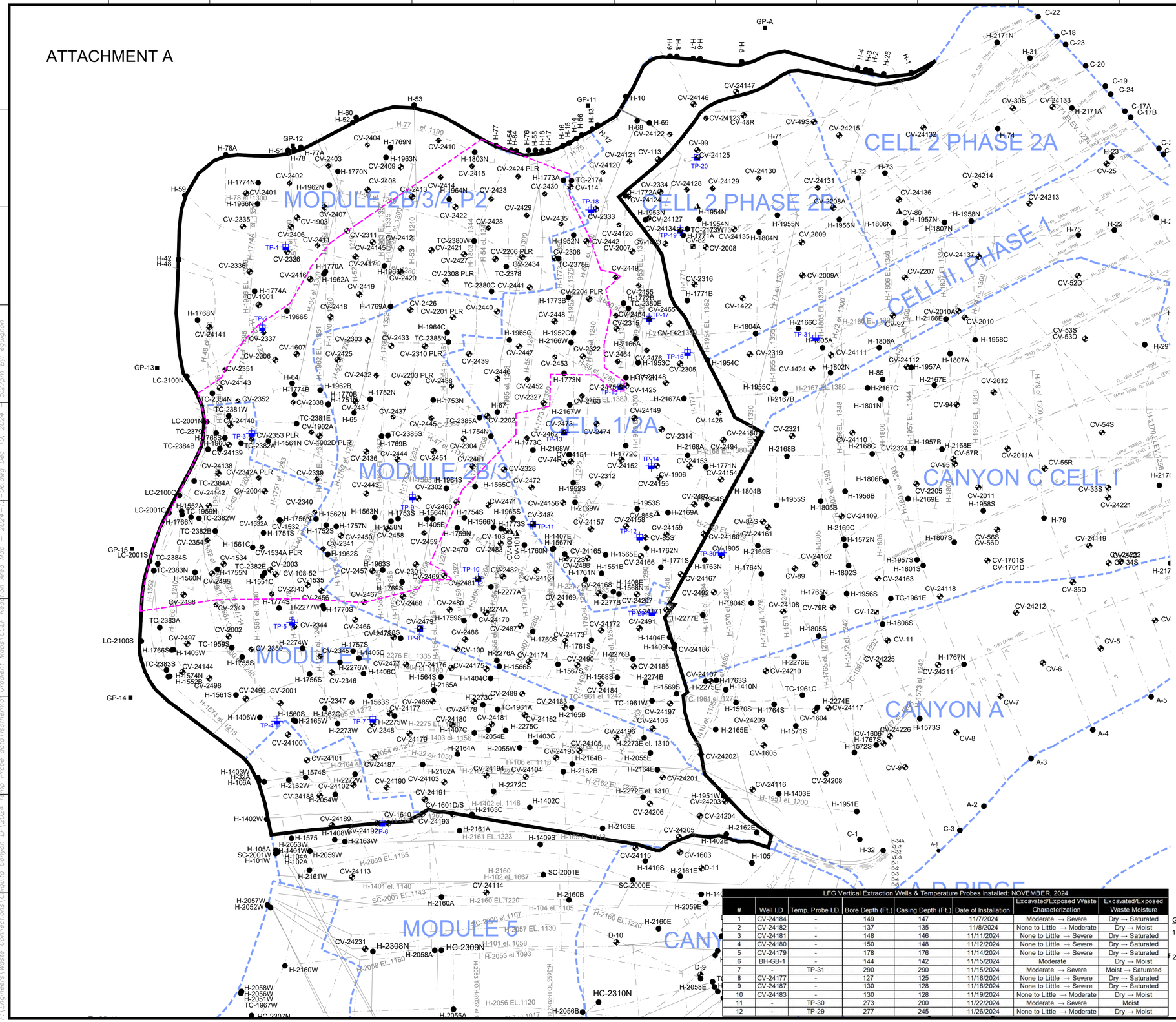
RED/PSS

cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Richard Pleus, PhD, Intertox
Srividhya Viswanathan, PE, SCS Engineers

Enclosures:

Attachment A – Reaction Area Map
Attachment B – In-Situ Waste Temperature Monitoring Probe Data
Attachment C – Isothermal Gradient Range Map
Attachment D – Wellhead Carbon Monoxide Range Map

ATTACHMENT A



LFG Vertical Extraction Wells & Temperature Probes Installed: NOVEMBER, 2024

#	Well I.D	Temp. Probe I.D.	Bore Depth (Ft.)	Casing Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Characterization	Excavated/Exposed Waste Moisture
1	CV-24184	-	149	147	11/7/2024	Moderate → Severe	Dry → Saturated
2	CV-24182	-	137	135	11/8/2024	None to Little → Moderate	Dry → Moist
3	CV-24181	-	148	146	11/11/2024	None to Little → Severe	Dry → Saturated
4	CV-24180	-	150	148	11/12/2024	None to Little → Severe	Dry → Saturated
5	CV-24179	-	178	176	11/14/2024	None to Little → Severe	Dry → Saturated
6	BH-GB-1	-	144	142	11/15/2024	Moderate	Dry → Moist
7	-	TP-31	290	290	11/15/2024	Moderate → Severe	Moist → Saturated
8	CV-24177	-	127	125	11/16/2024	None to Little → Severe	Dry → Saturated
9	CV-24187	-	130	128	11/18/2024	None to Little → Severe	Dry → Saturated
10	CV-24183	-	130	128	11/19/2024	None to Little → Moderate	Dry → Moist
11	-	TP-30	273	200	11/22/2024	Moderate → Severe	Moist
12	-	TP-29	277	245	11/26/2024	None to Little → Moderate	Dry → Moist

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE / REVISION / NO.

SHEET TITLE: REACTION AREA MAP NOVEMBER, 2024

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX: (562) 427-0805

ACAD FILE: -
DWN. BY: SRM
CHK. BY: WCH
APP. BY: WCH
PROJ. NO. 01204123.35
DSN. BY: -

DATE: 12/06/2024

SCALE: AS SHOWN

SHEET: 1

ATTACHMENT B

Solid Waste Borehole Maximum Temperature Profiles Over 6 Weeks

for 10/24/2024 to 12/4/2024

From November 28, 2024, through December 4, 2024, there was only one recorded temperature increase that triggered the notification limits set forth in the LEA's October 4, 2024 letter, 2 temperature decreases within the notification limits, and all other temperature probes remained consistent with previous readings.

Chiquita provides the following updates:

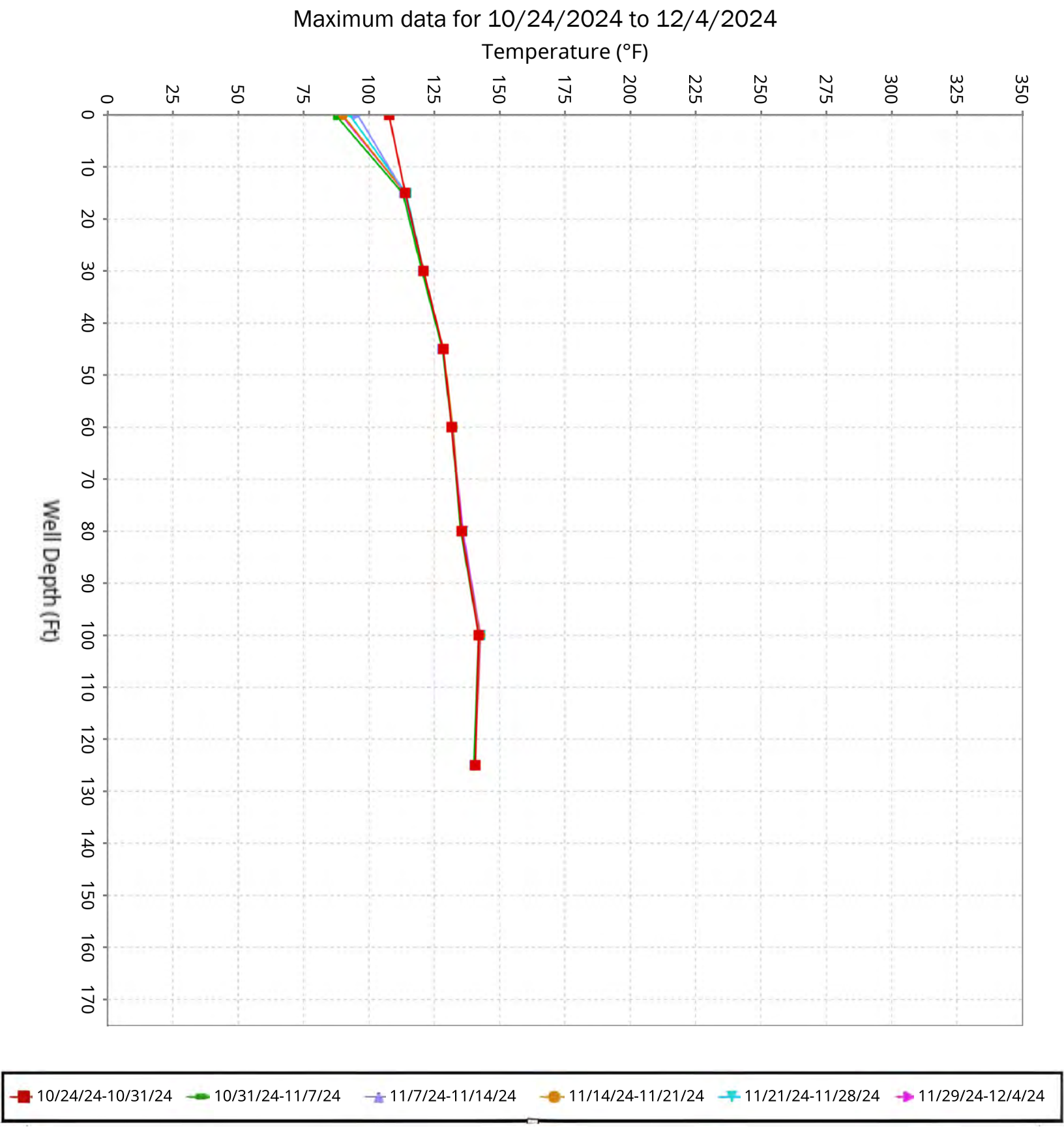
- TP-08
  - TP-8 was taken offline on October 3rd for filling operations related to the west toe excavation, and offline thermocouples read a default maximum possible temperature of 2,508°F.
- TP-10
  - 30-foot thermocouple showed a decrease in maximum temperature of 17.7°F from 133.7°F to 116.0°F from December 2nd to December 4th.
  - 45-foot thermocouple showed a decrease in maximum temperature of 11.1°F from 134.2°F to 123.1°F from December 2nd to December 4th.
- TP-14
  - 30-foot thermocouple showed an increase in maximum temperature of 24.8°F from 108.3°F to 133.1°F from November 27th to December 4th.

SCS ENGINEERS

07224053.00 | December 5, 2024

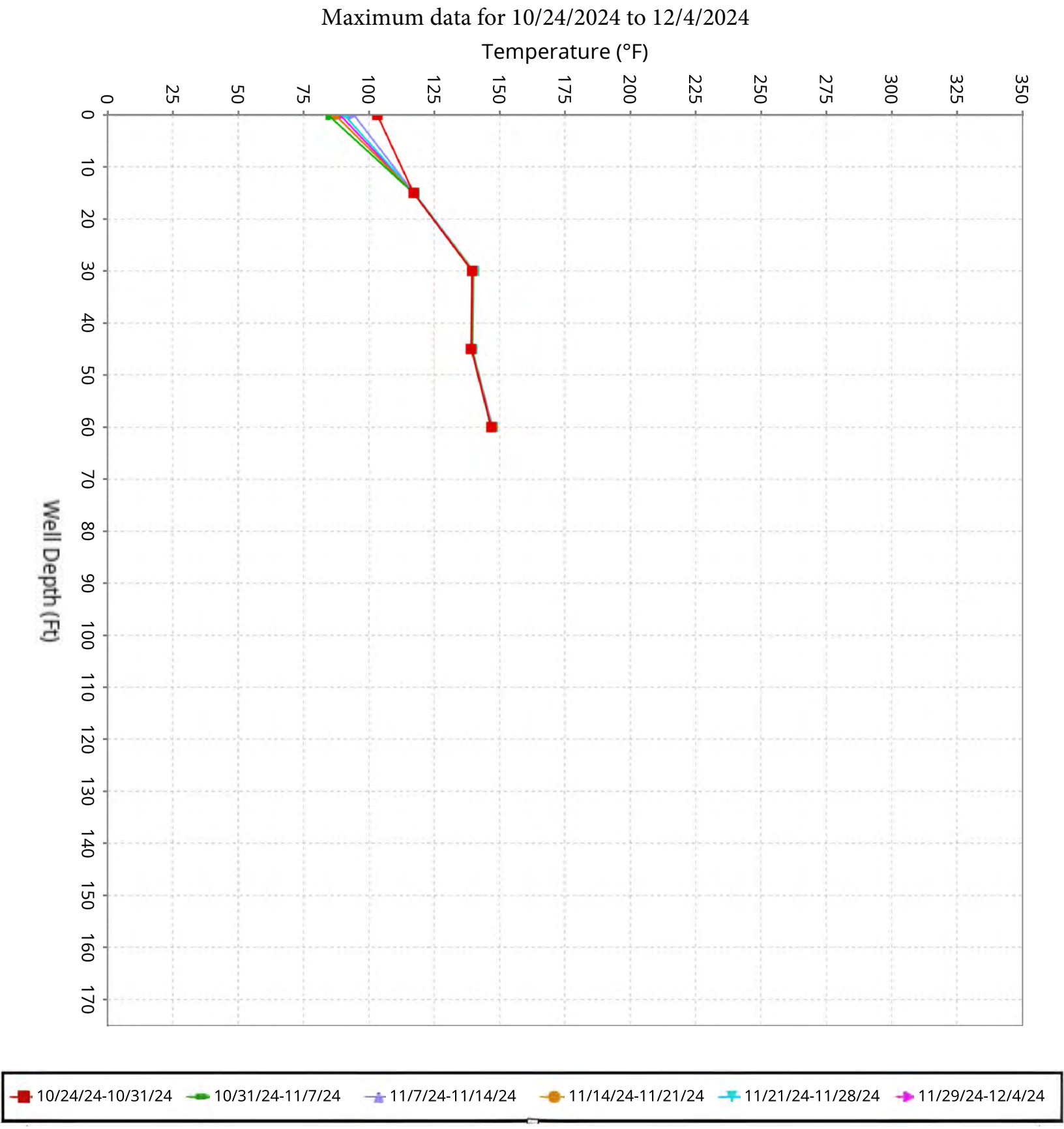
274 Granite Run Drive
Lancaster, PA 17601
717-550-6330

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-1



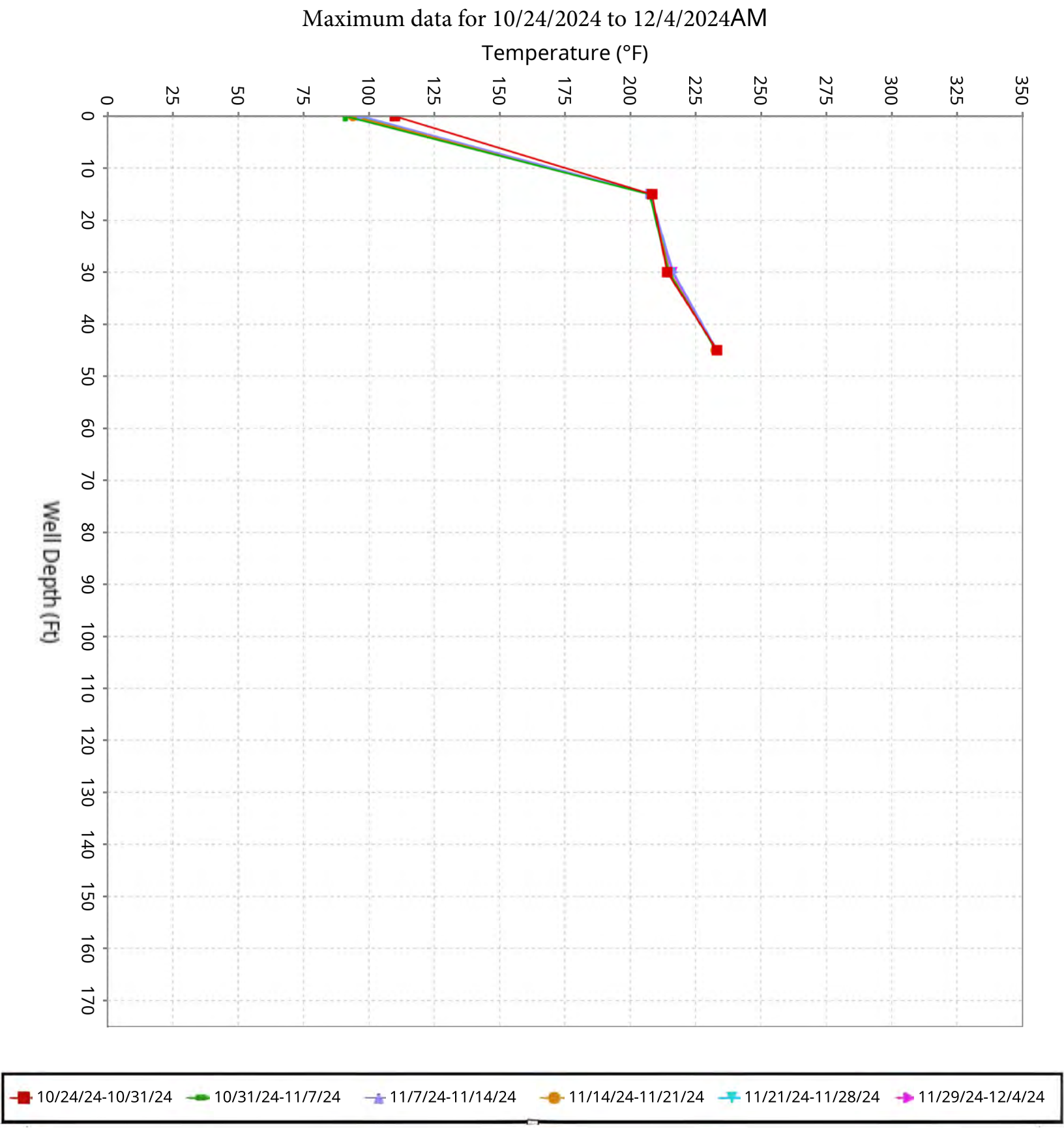
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-2



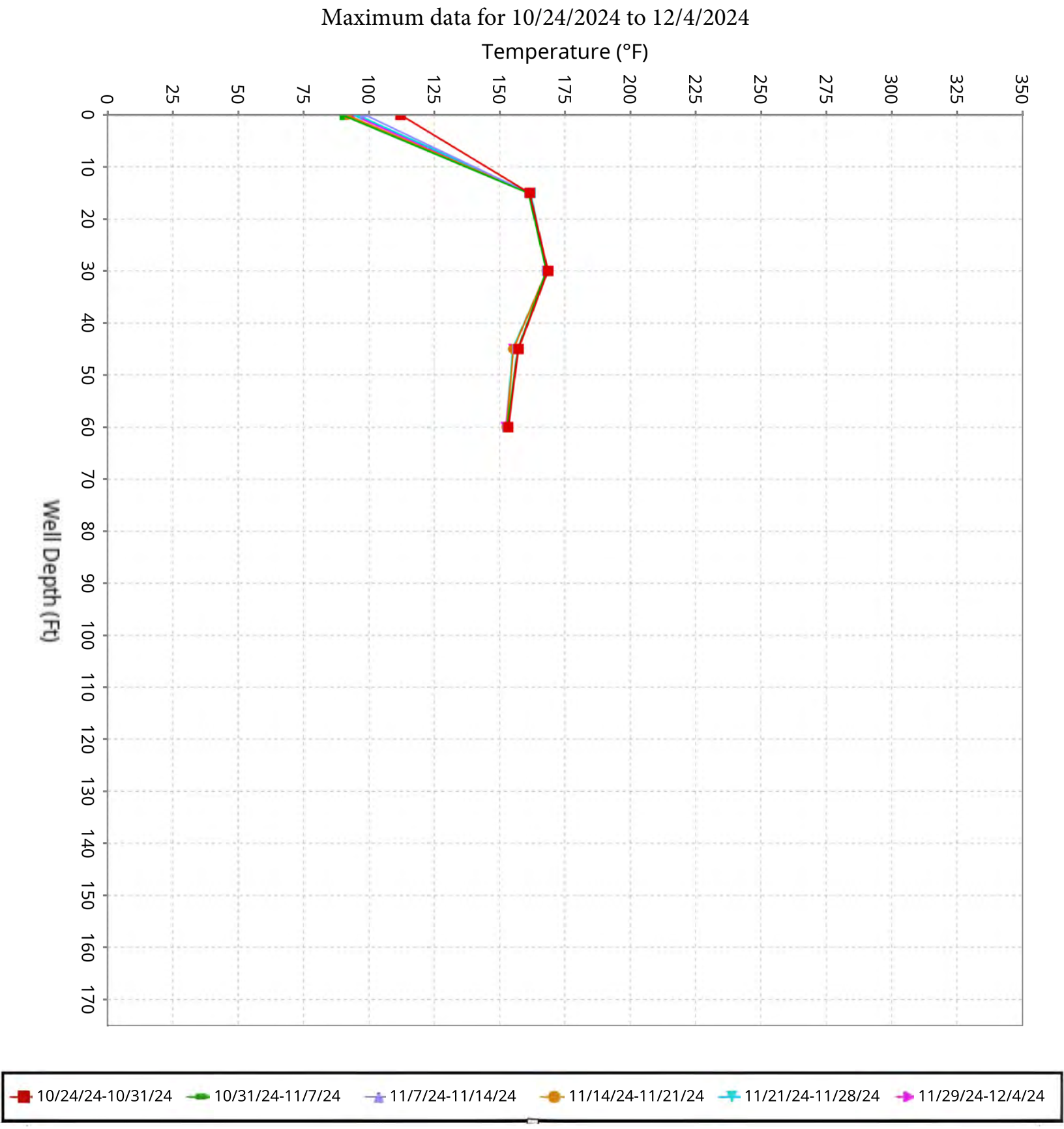
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-3



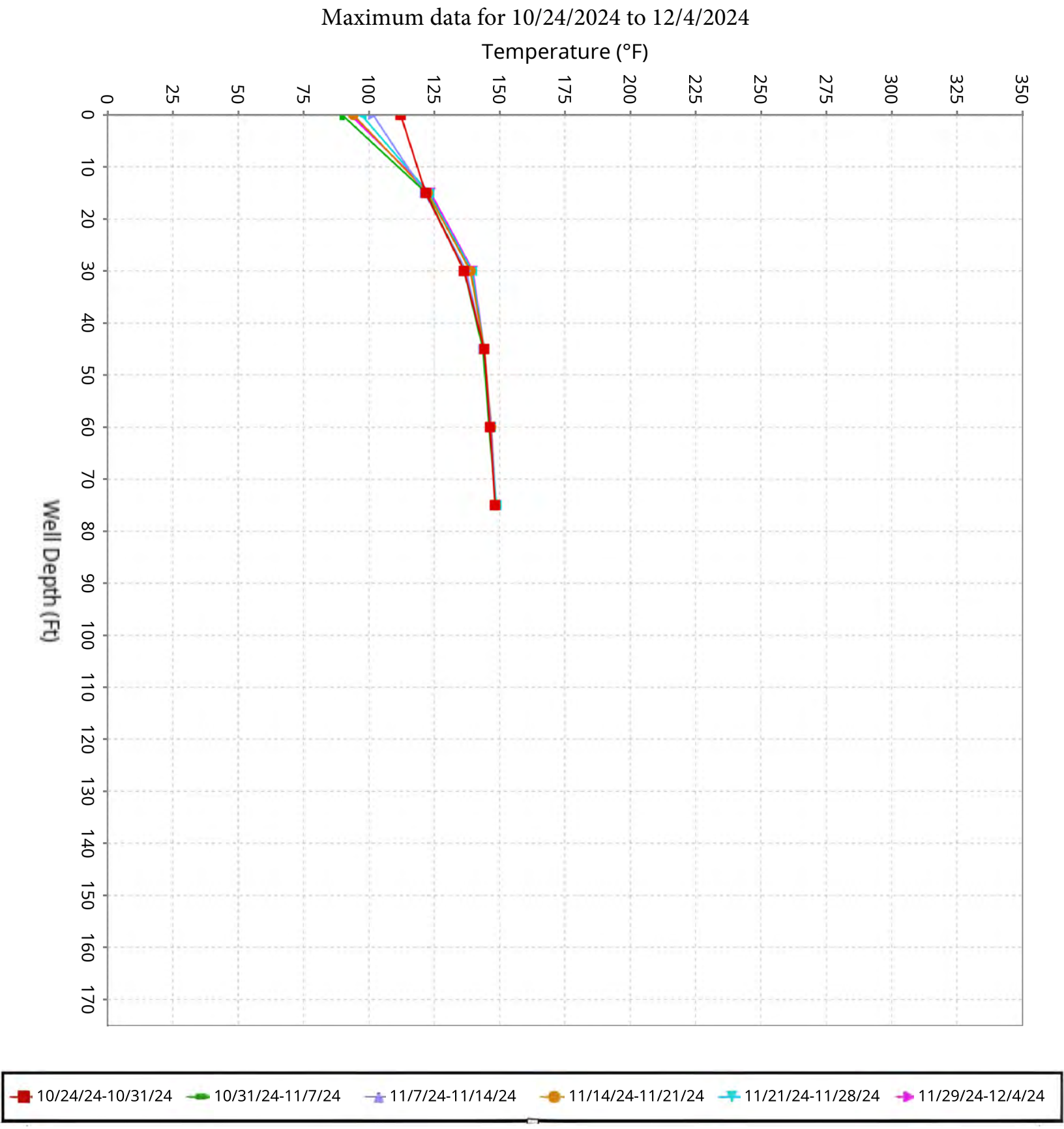
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-4



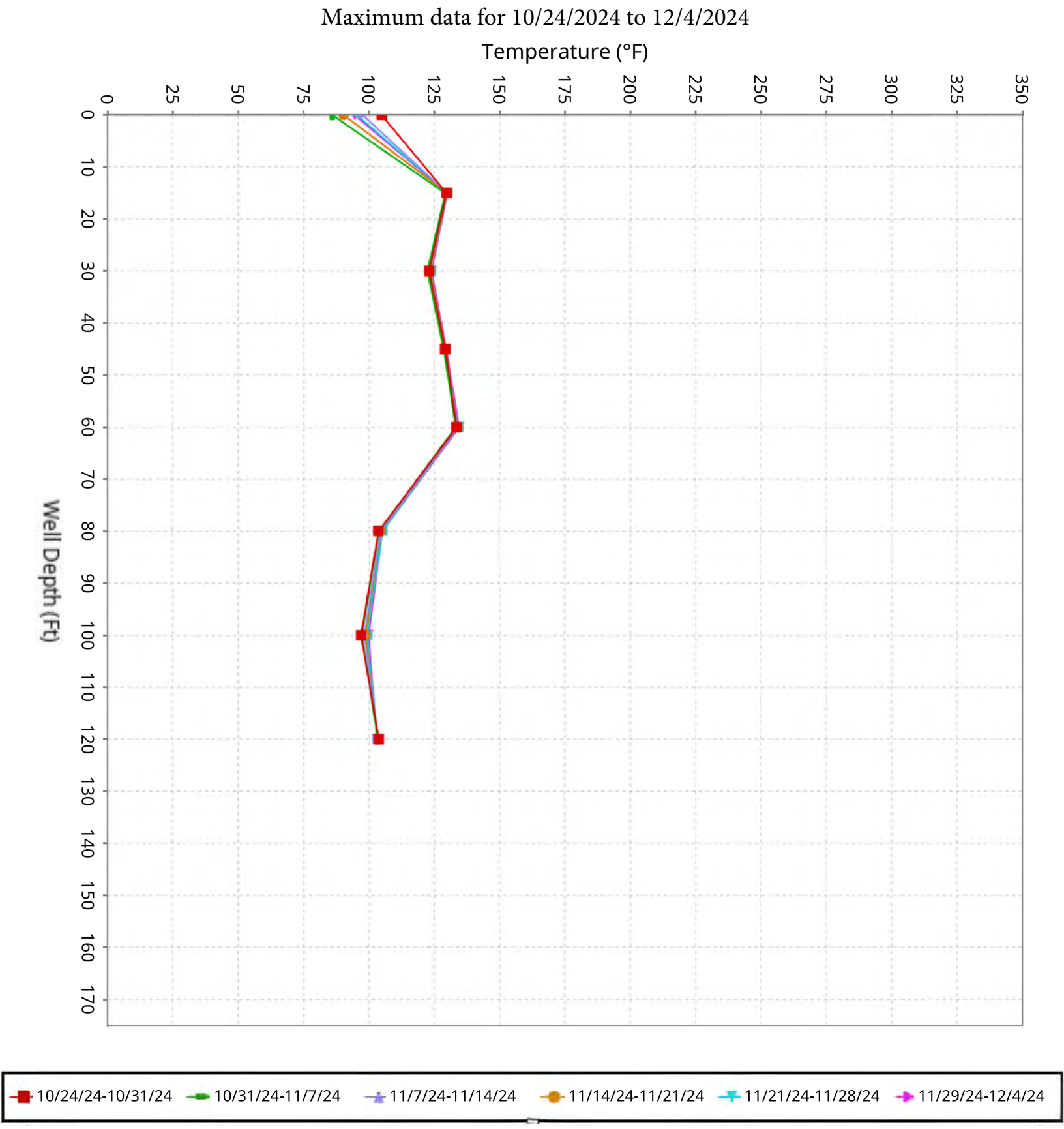
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-5



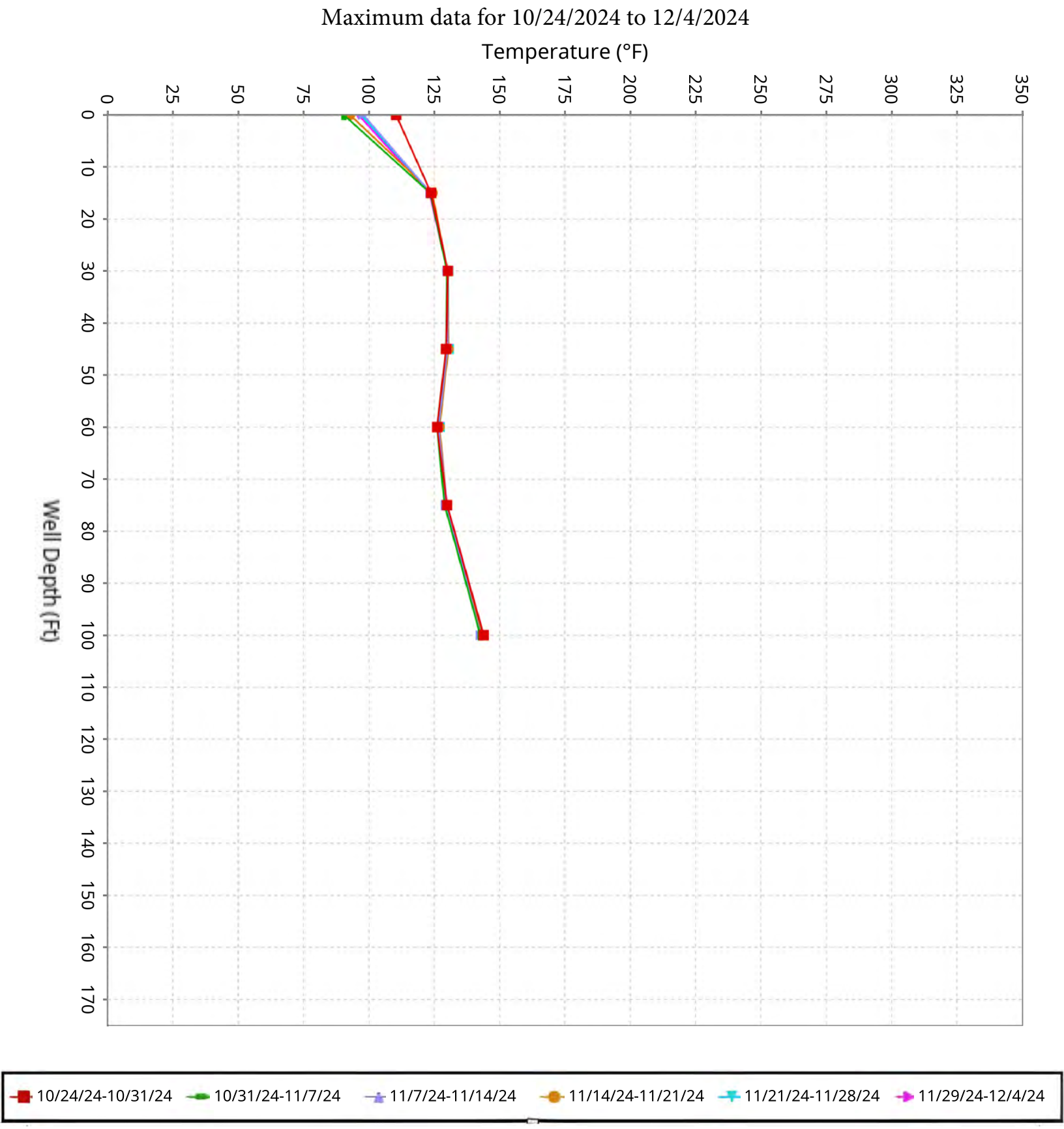
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-6



SCS ENGINEERS

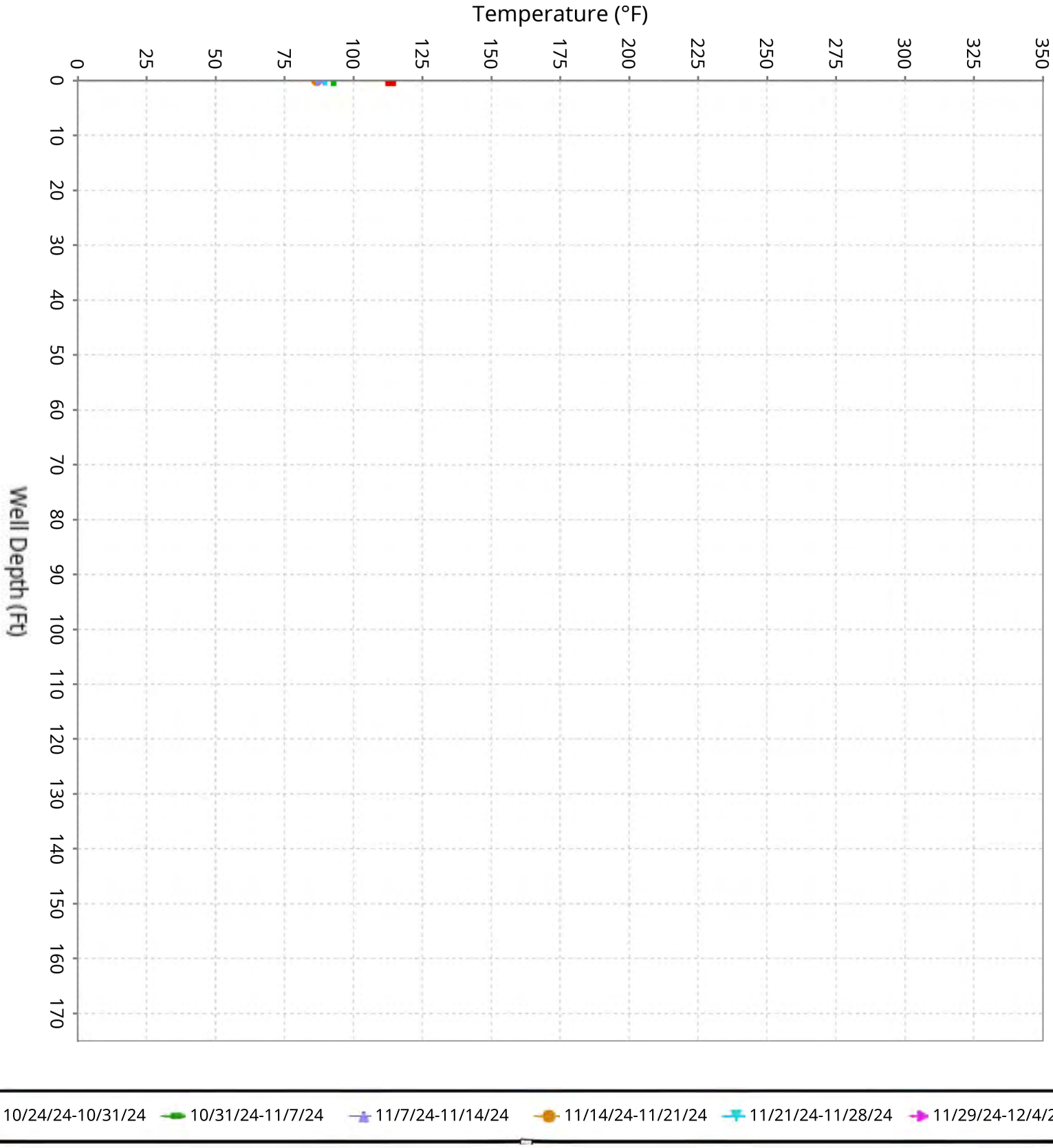
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-7



SCS ENGINEERS

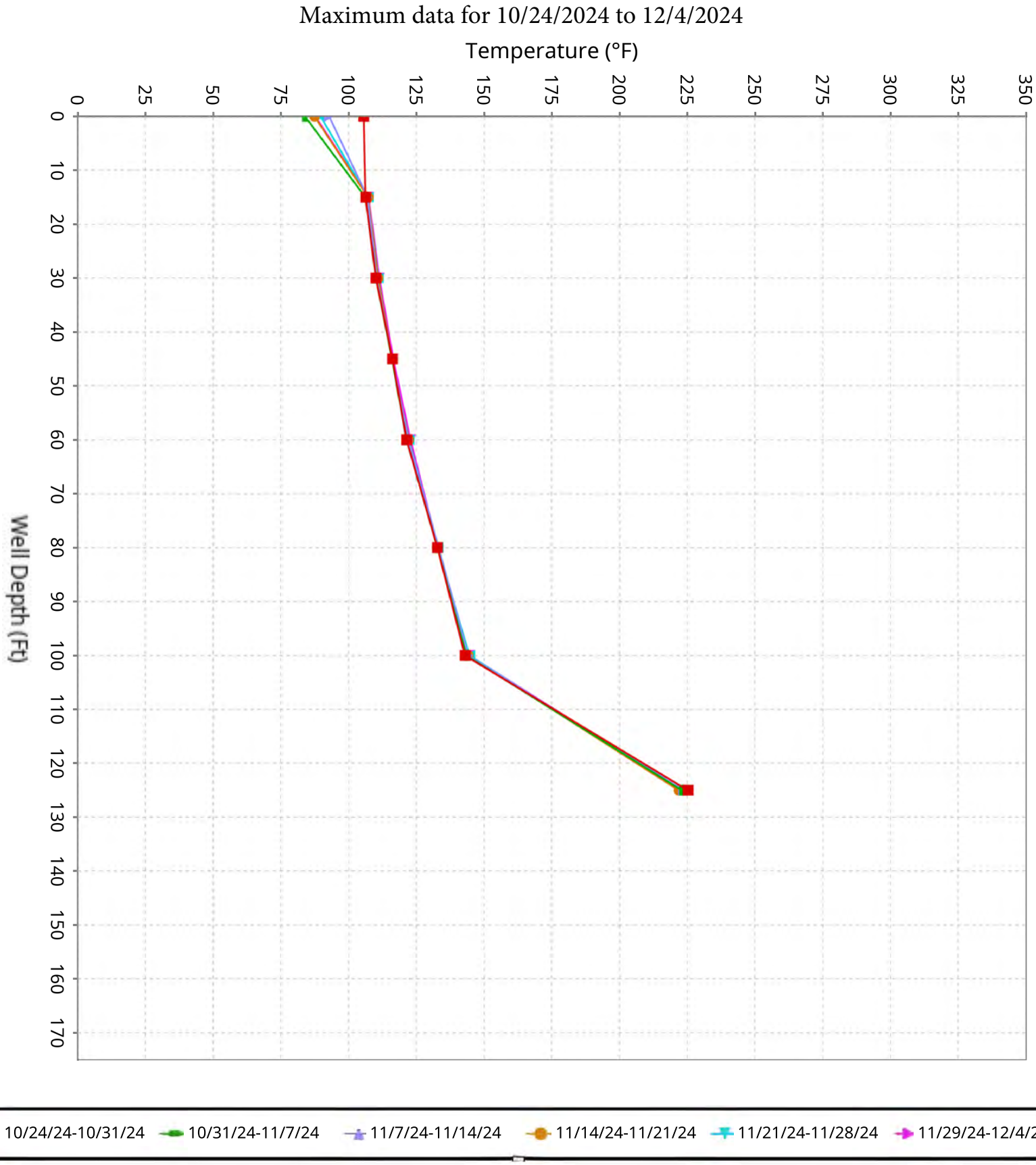
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-8

Maximum data for 10/24/2024 to 12/4/2024



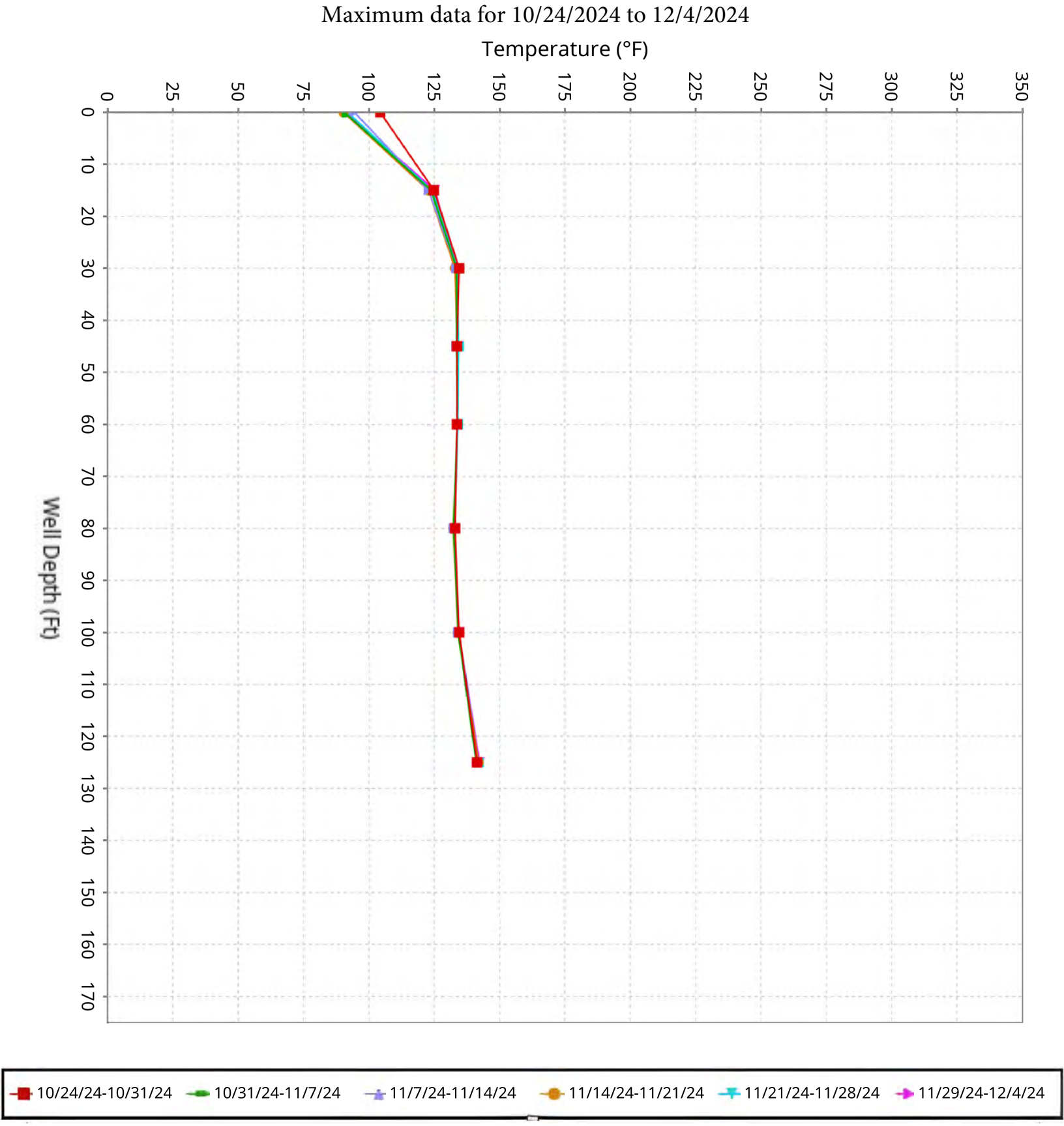
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-9



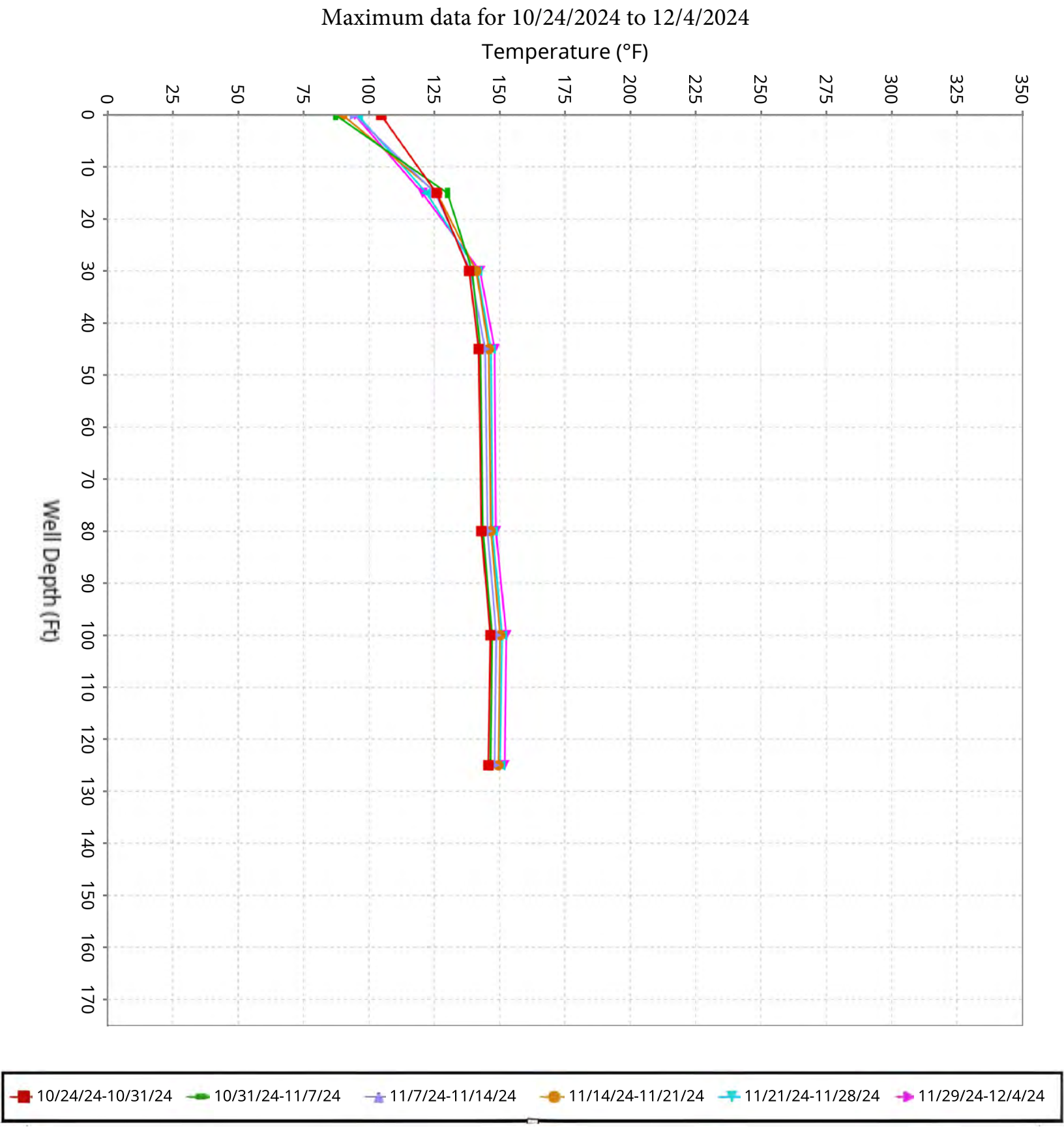
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-10



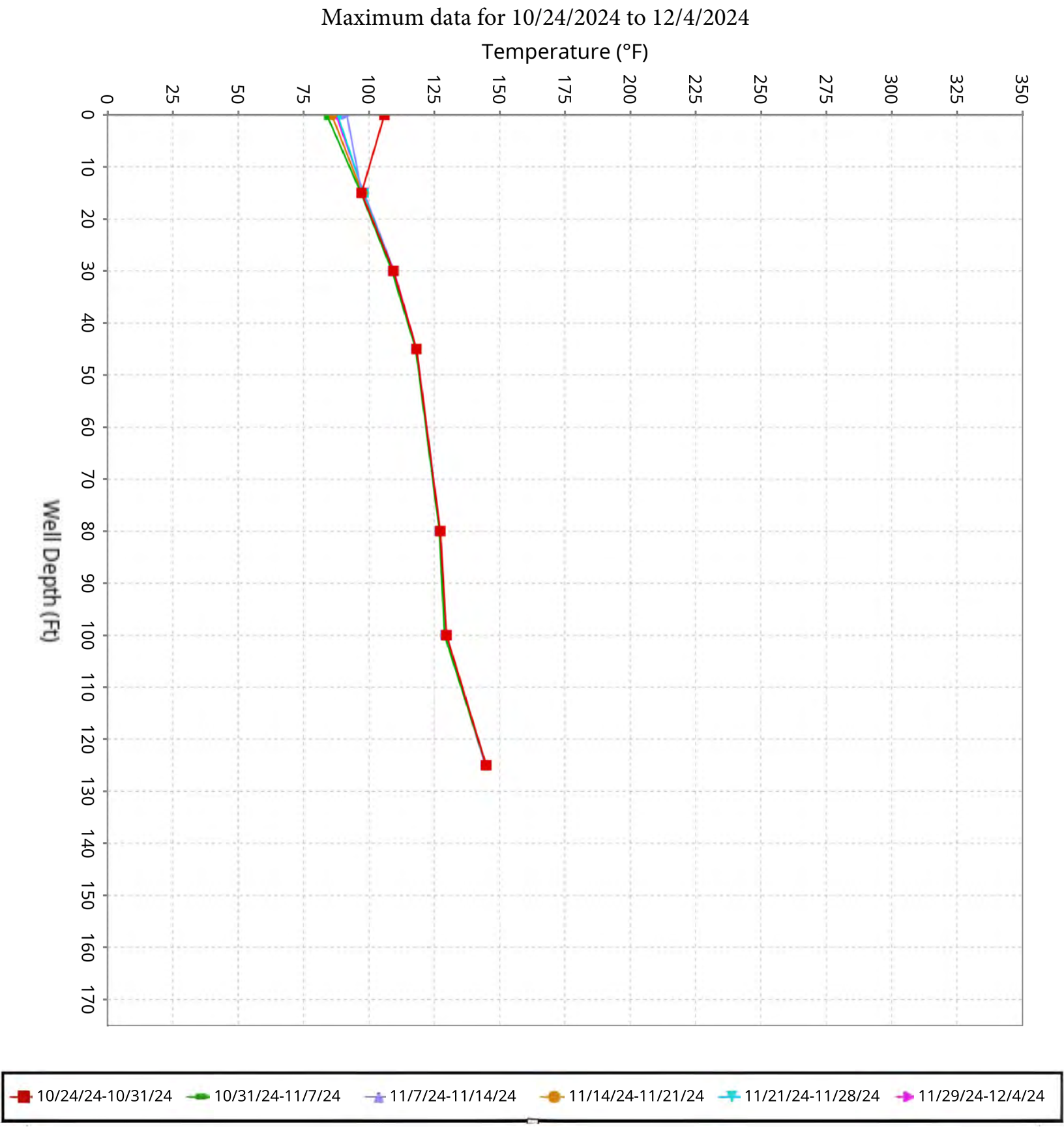
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-11



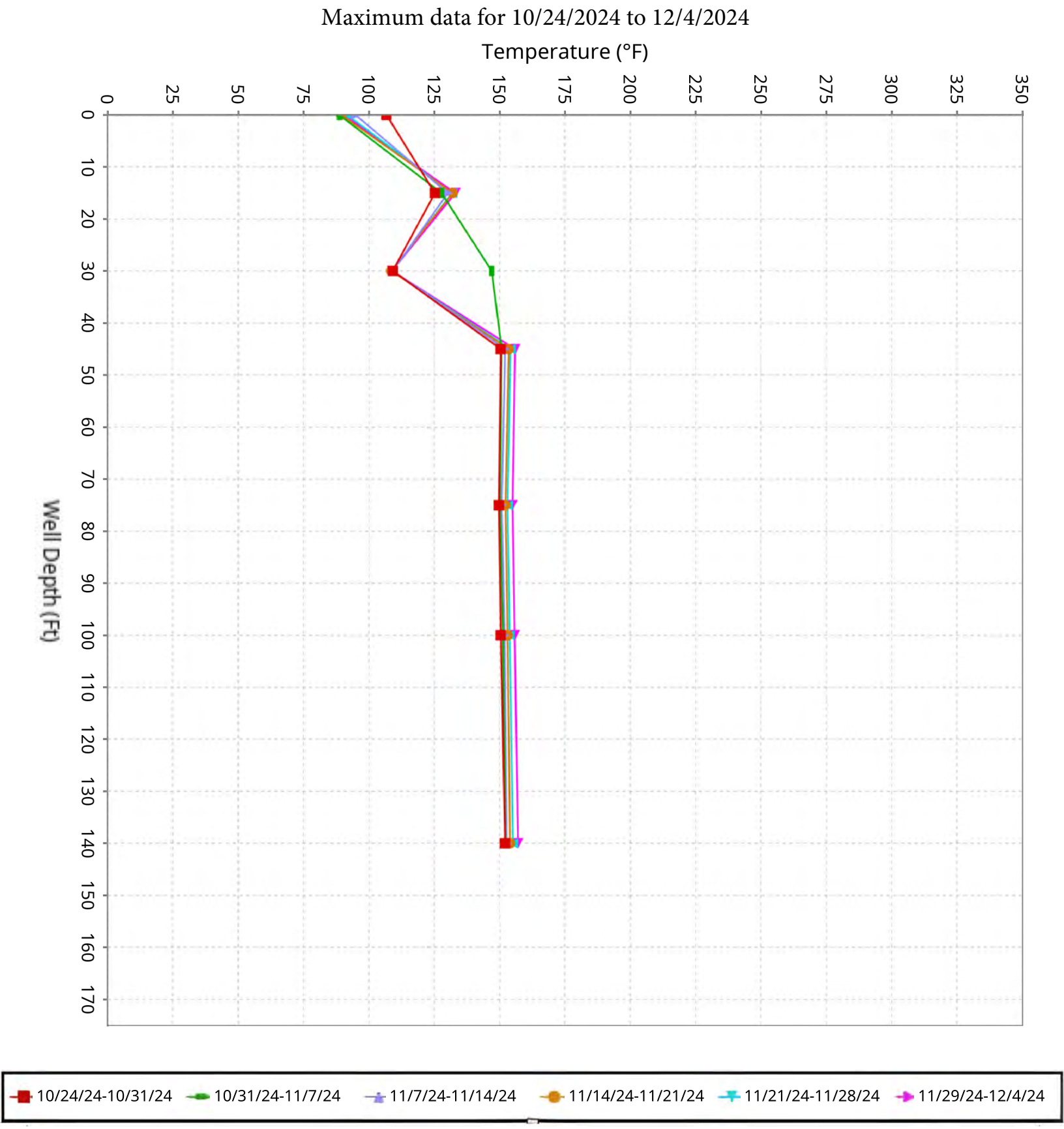
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-12



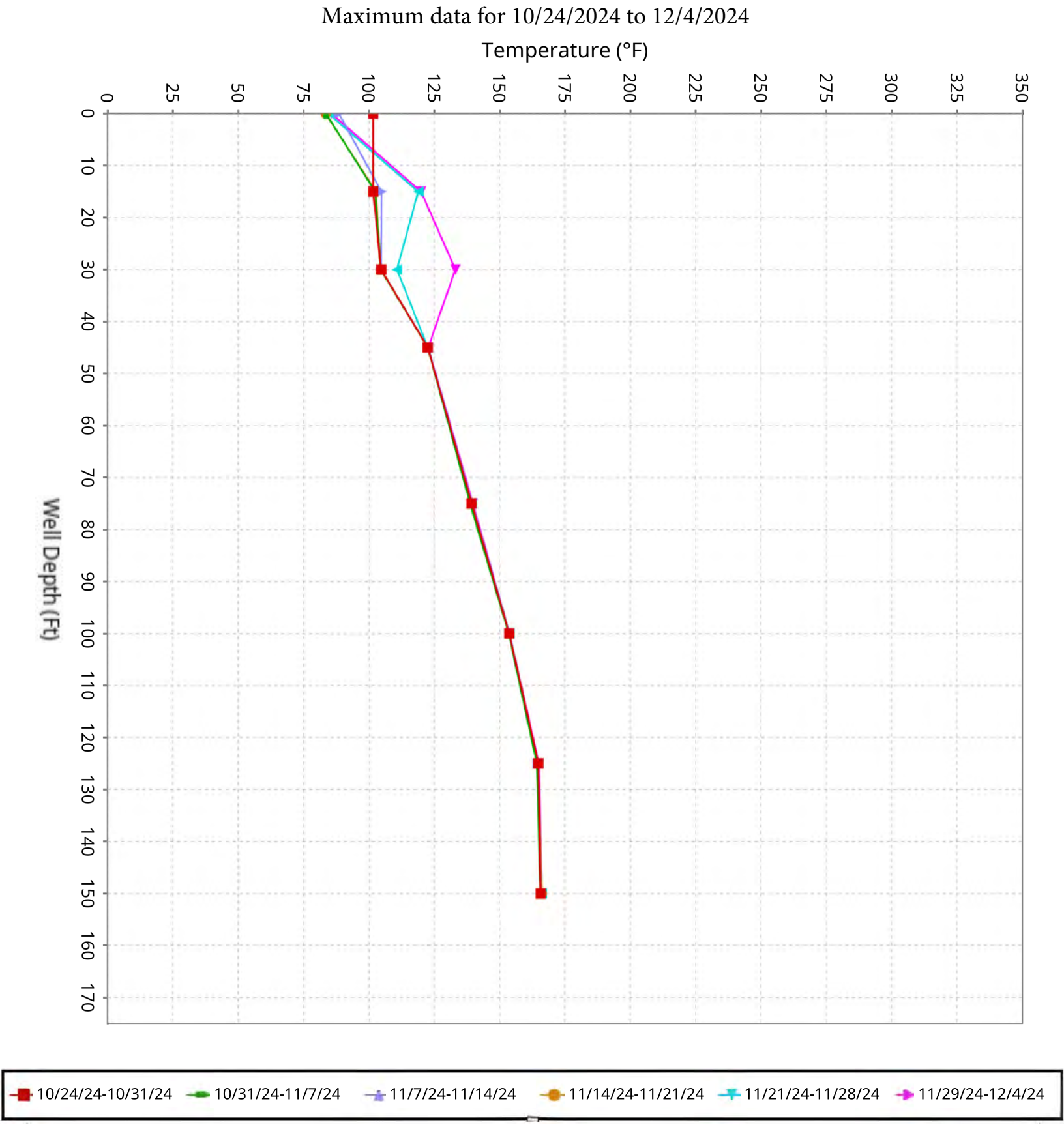
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-13



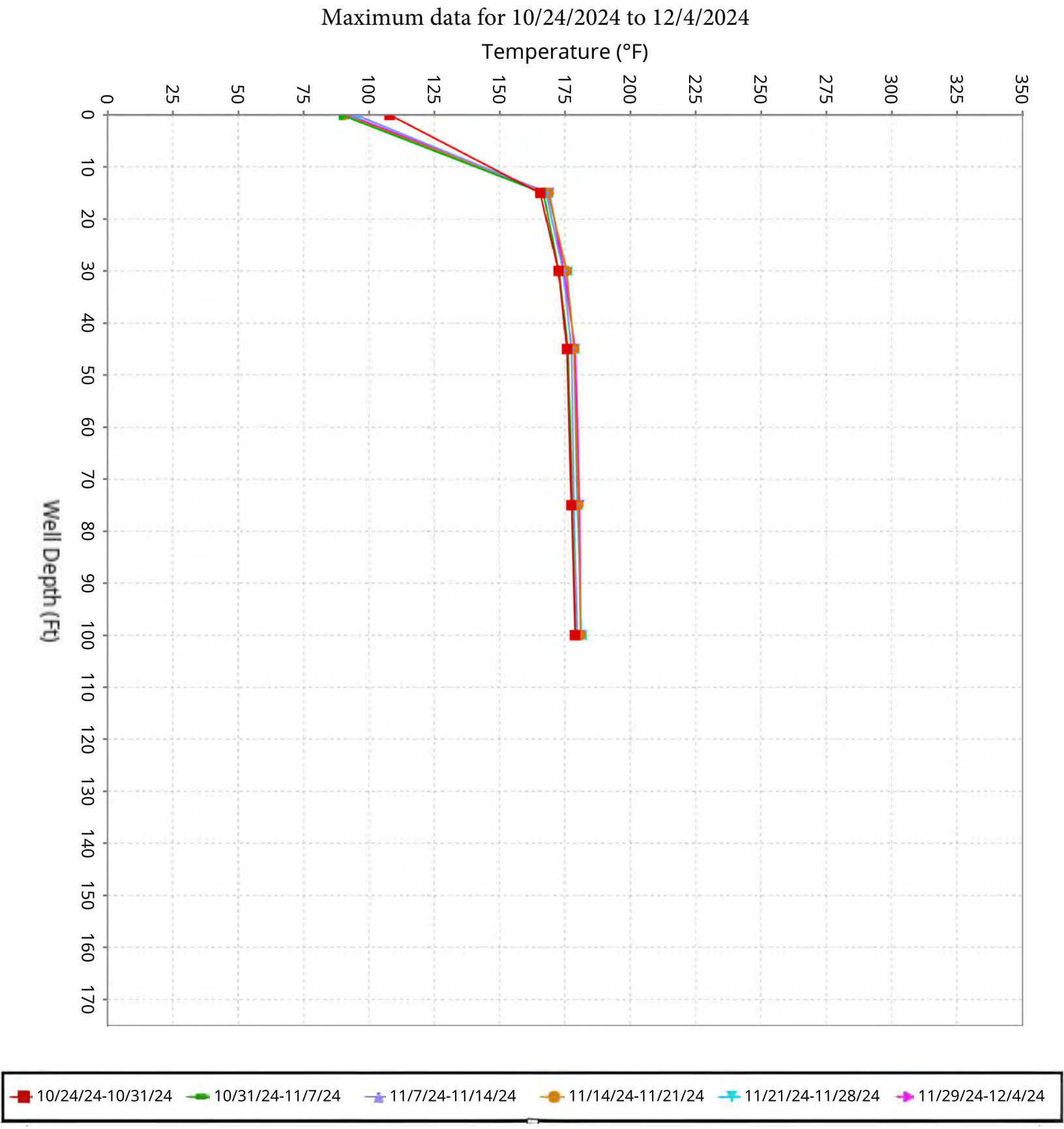
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-14



SCS ENGINEERS

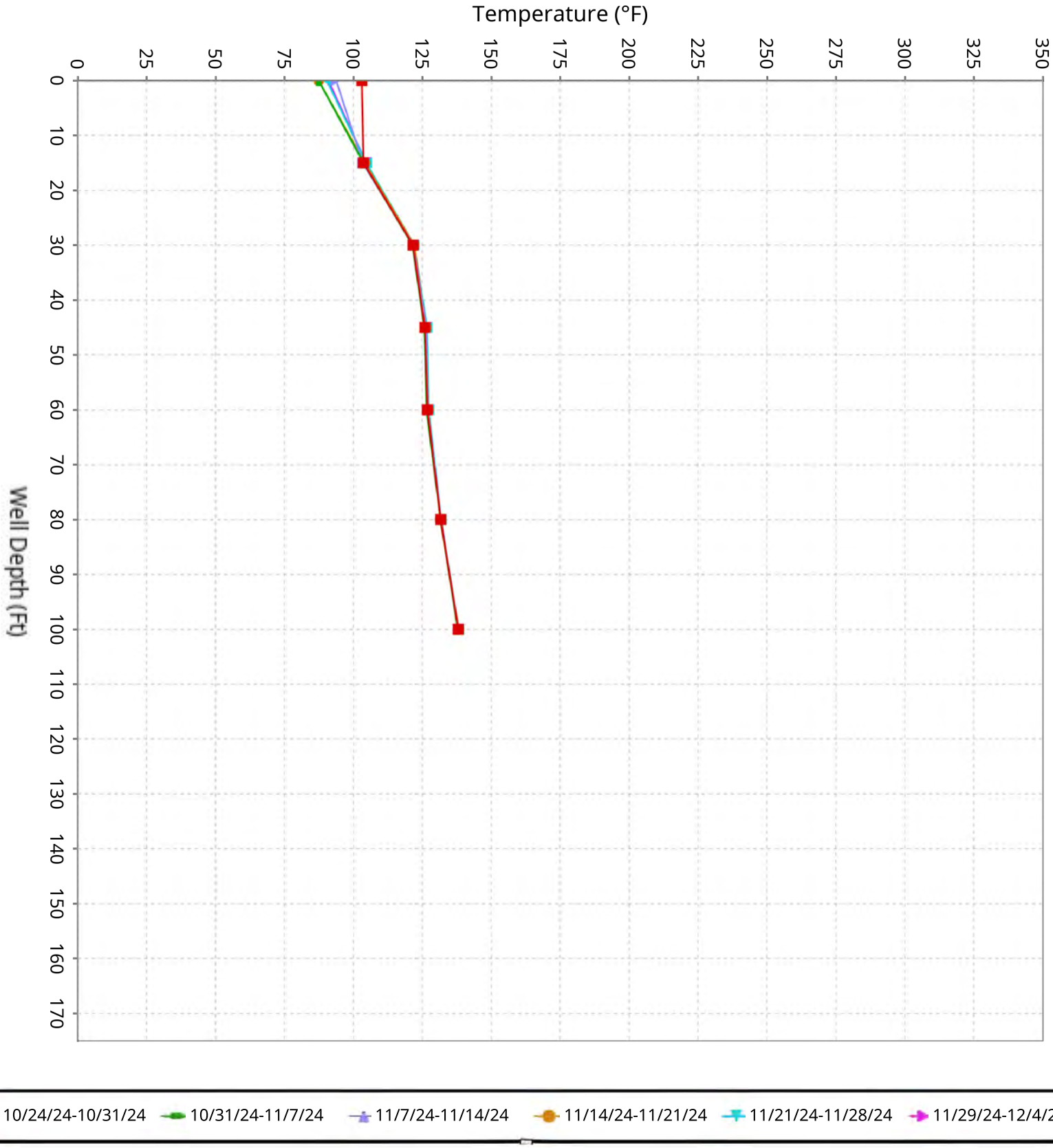
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-15



SCS ENGINEERS

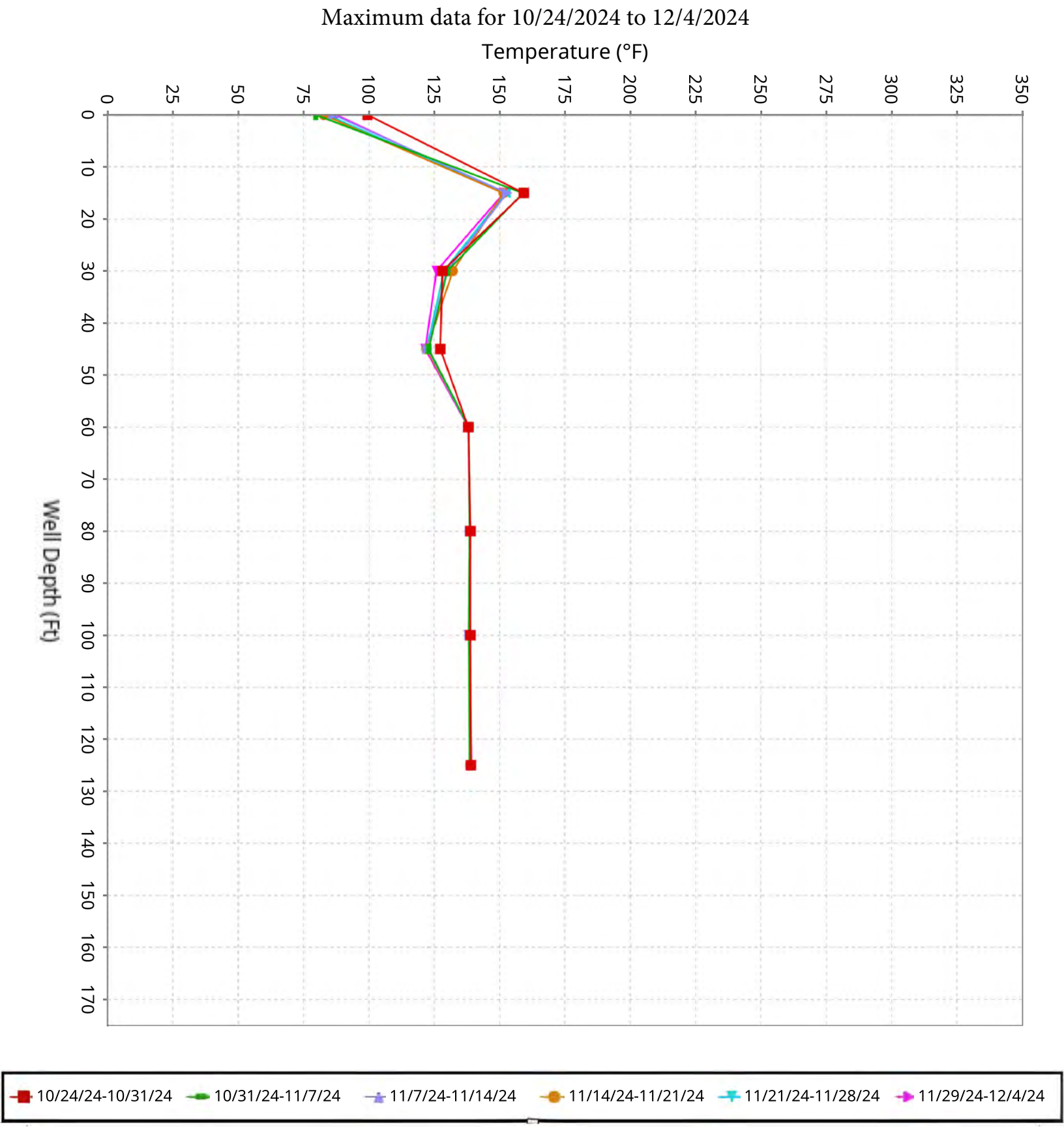
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-16

Maximum data for 10/24/2024 to 12/4/2024



SCS ENGINEERS

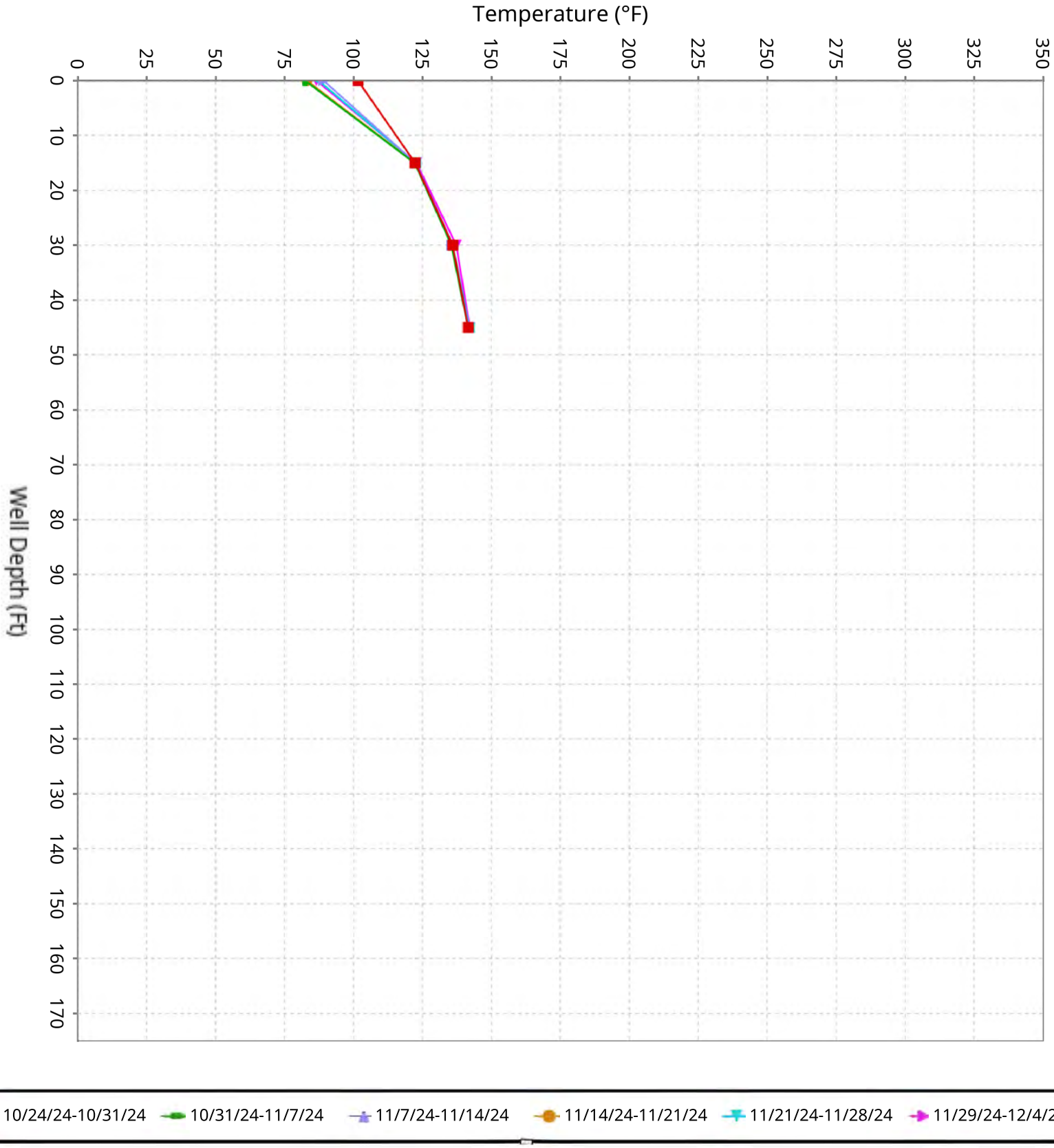
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-17



SCS ENGINEERS

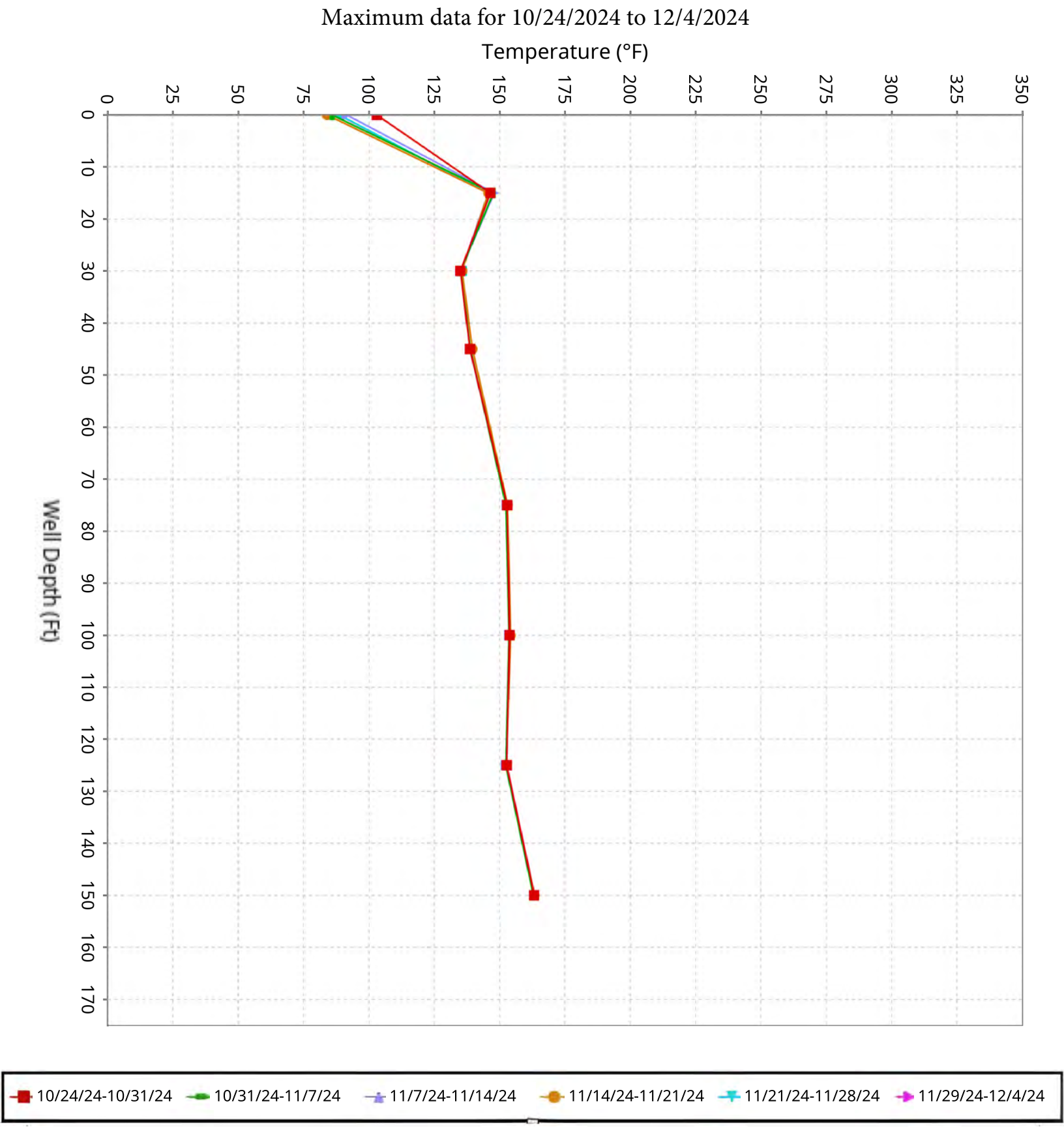
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-18

Maximum data for 10/24/2024 to 12/4/2024



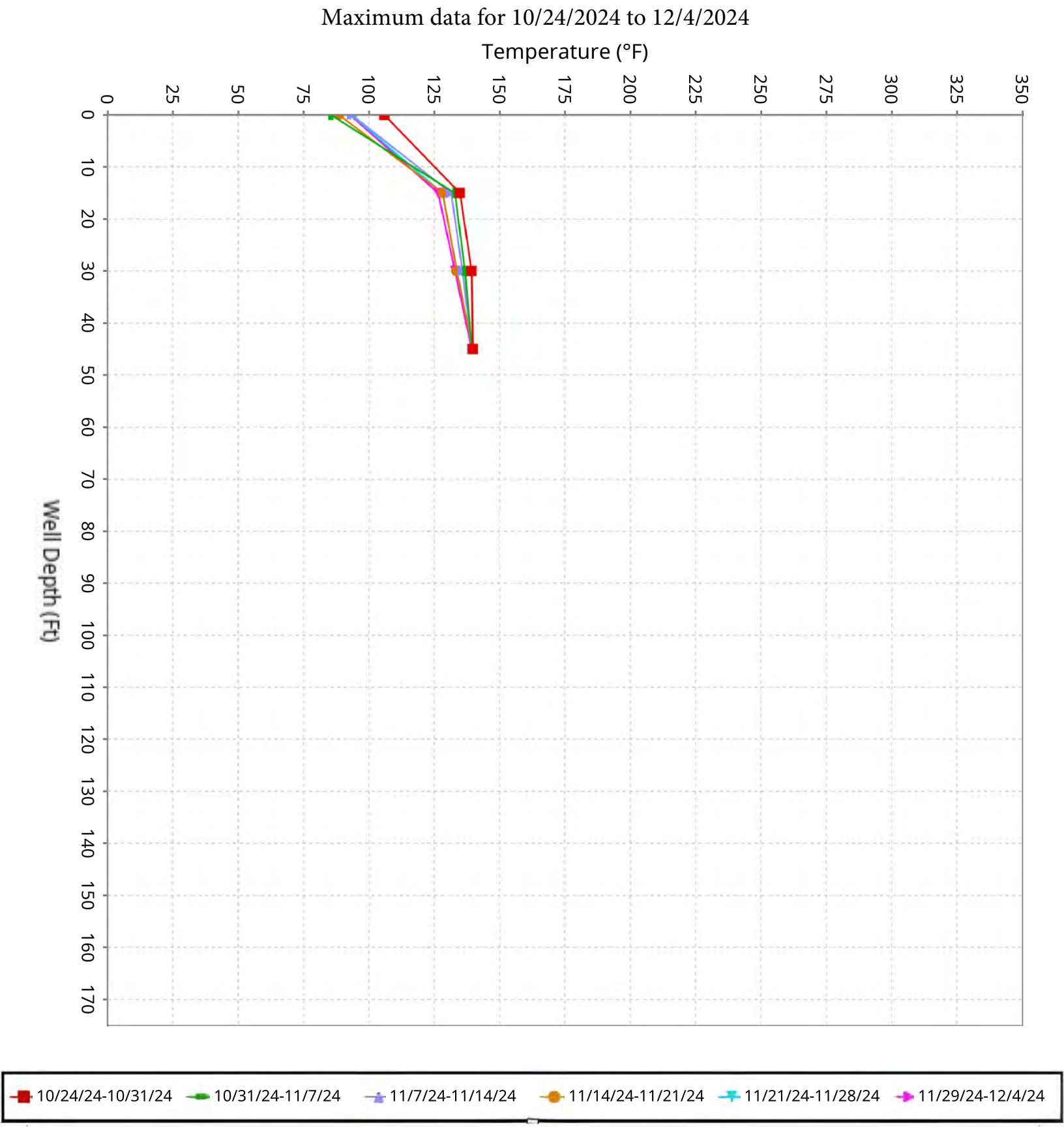
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-19



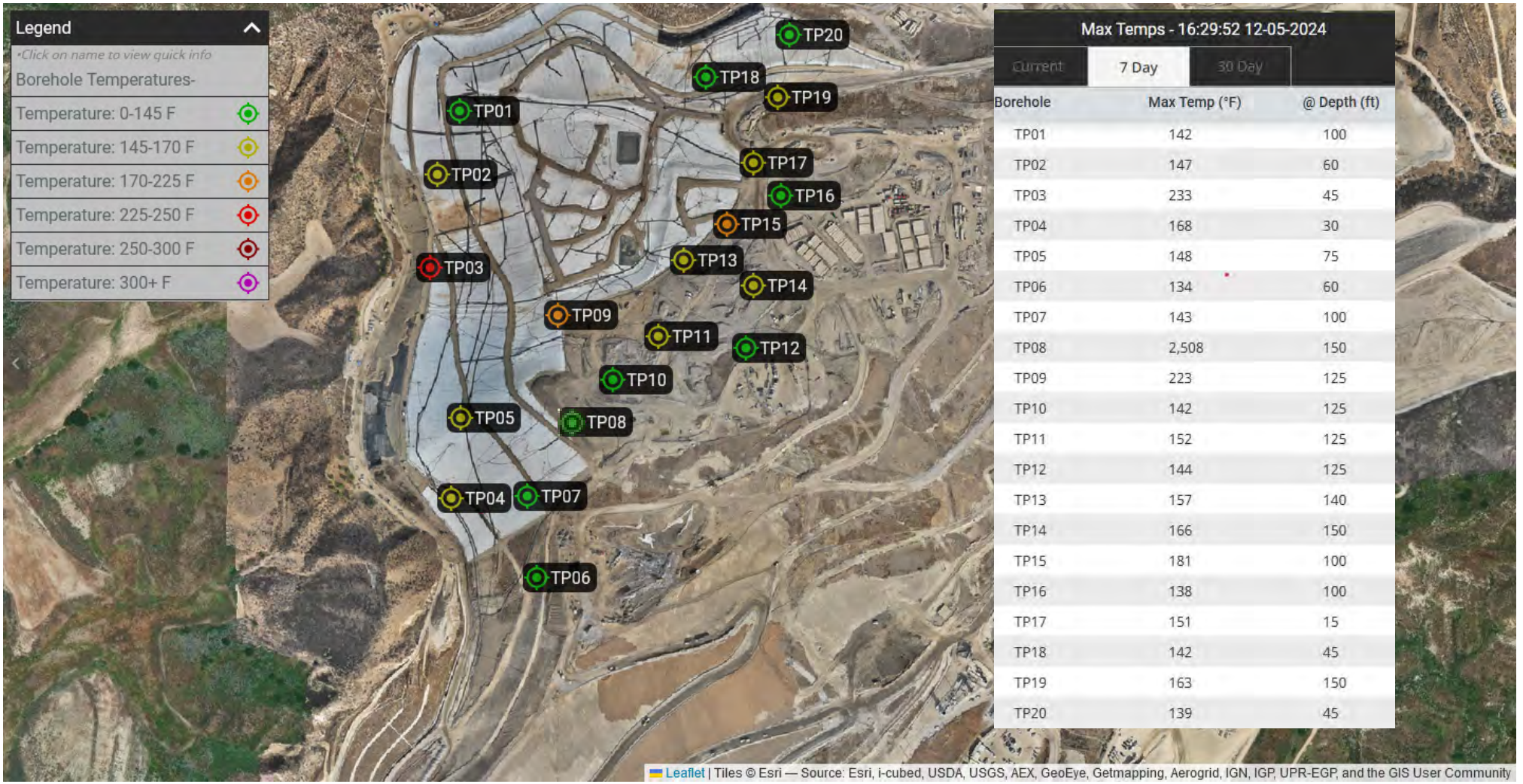
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-20



SCS ENGINEERS

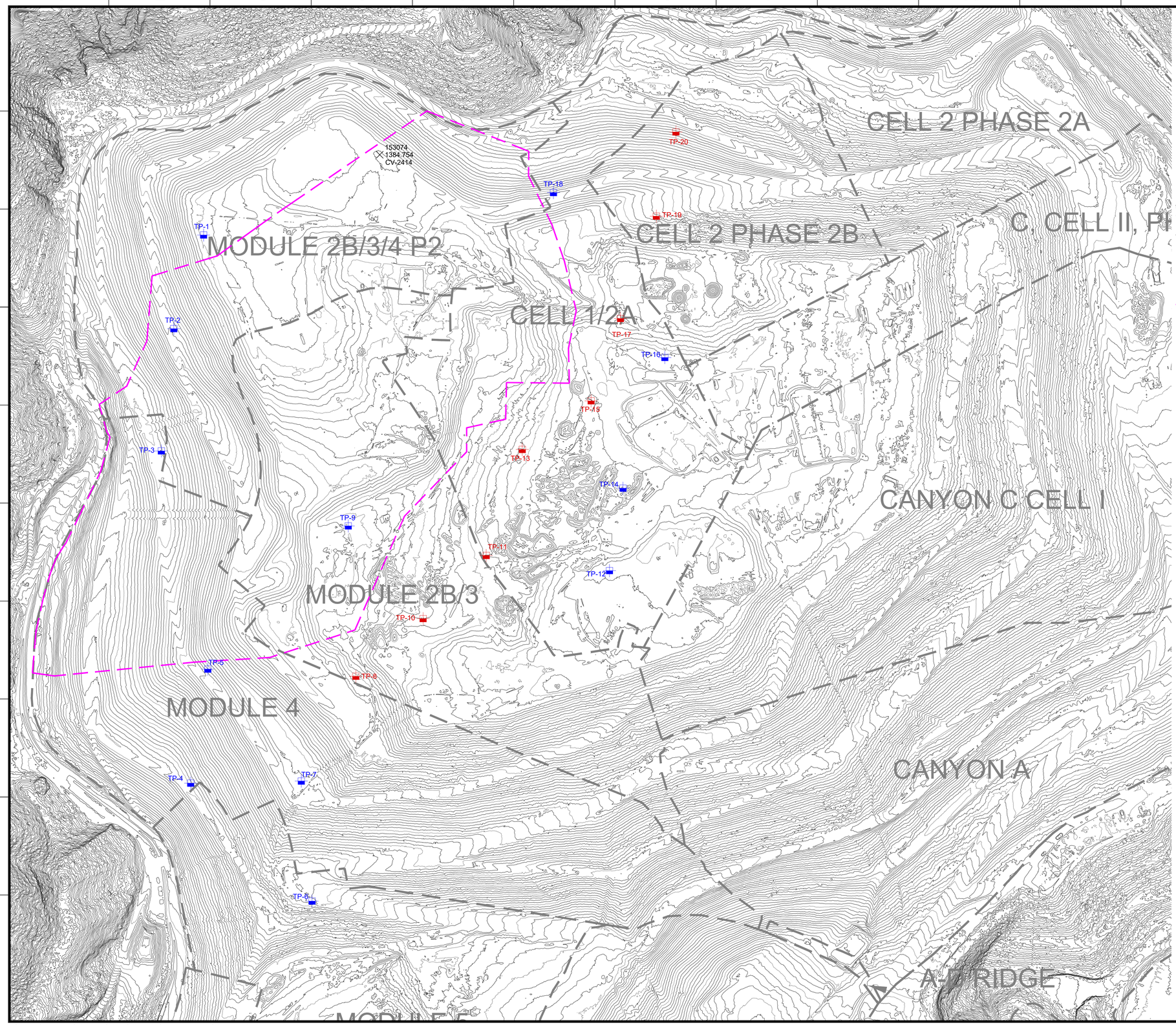
Maximum Vertical Temperature Map from Temperature Probes at Chiquita Landfill



Max Temps - 16:29:52 12-05-2024

Current | 7 Day | 30 Day

Borehole	Max Temp (°F)	@ Depth (ft)
TP01	142	100
TP02	147	60
TP03	233	45
TP04	168	30
TP05	148	75
TP06	134	60
TP07	143	100
TP08	2,508	150
TP09	223	125
TP10	142	125
TP11	152	125
TP12	144	125
TP13	157	140
TP14	166	150
TP15	181	100
TP16	138	100
TP17	151	15
TP18	142	45
TP19	163	150
TP20	139	45



N

GRAPHIC SCALE

130 65 0 130 260 390

SCALE: 1"=130'

LEGEND

1150	EXISTING TOPOGRAPHIC CONTOUR
	EXISTING CELL LIMITS (APPROXIMATE)
TP-XX	INSTALLED TEMPERATURE PROBES - STANDALONE
TP-XX	INSTALLED TEMPERATURE PROBES INSTALLED WITHIN WELL CASING
	REACTION AREA BOUNDARY (APPROX) - BASED ON DATA REVIEW

GENERAL DRAWING NOTES:

1. EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN WAS PROVIDED BY PROPELLER. AERIAL PHOTOGRAPHY DATED JUNE 12, 2024.
2. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.

DATE

REVISION

NO.

SHEET TITLE: OVERALL INSTALLED TEMPERATURE PROBE SITE PLAN

PROJECT TITLE: TEMPERATURE PROBE INSTALLATION PROJECT CHIQUITA LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

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ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX. (562) 427-0805

PROJ. NO: 01204123.35 | DSN. BY: JH/SRM | DWN. BY: AEK | CHK. BY: WCH | ACAD FILE: ENGINEERS | APP. BY: WCH

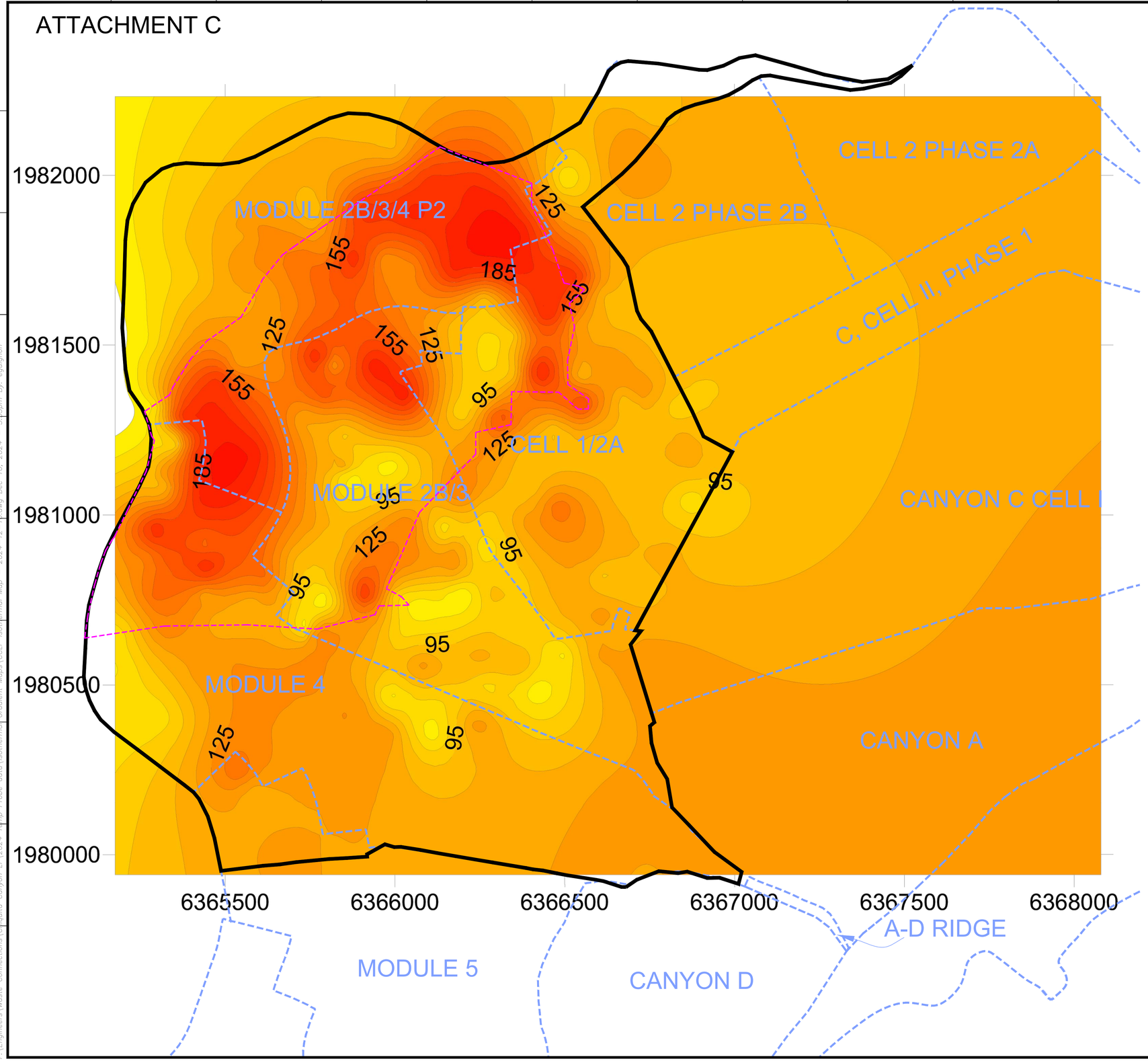
DATE: 06/14/2024

SCALE: AS SHOWN

SHEET: 1

C:\Users\akarram\Desktop\Work\Chiquita\Temp Probes\2024 CCLF Temp.Probe AK_2024-06-14.dwg Jun 14, 2024 - 11:49am By: akarram

ATTACHMENT C



N

GRAPHIC SCALE

150 75 0 150 300 450

SCALE: 1"=150'

195
185
175
165
155
145
135
125
115
105
95
85
75
65

LEGEND

- EXISTING CELL LIMITS (APPROXIMATE)
- GP-XX EXISTING PERIMETER MIGRATION PROBE
- TP-XX EXISTING TEMPERATURE PROBE
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
- REACTION AREA BOUNDARY - CONDITION 9A

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE

REVISION

NO.

SHEET TITLE: ISOTHERMAL GRADIENT MAP NOVEMBER, 2024

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-3500 FAX: (562) 427-0805

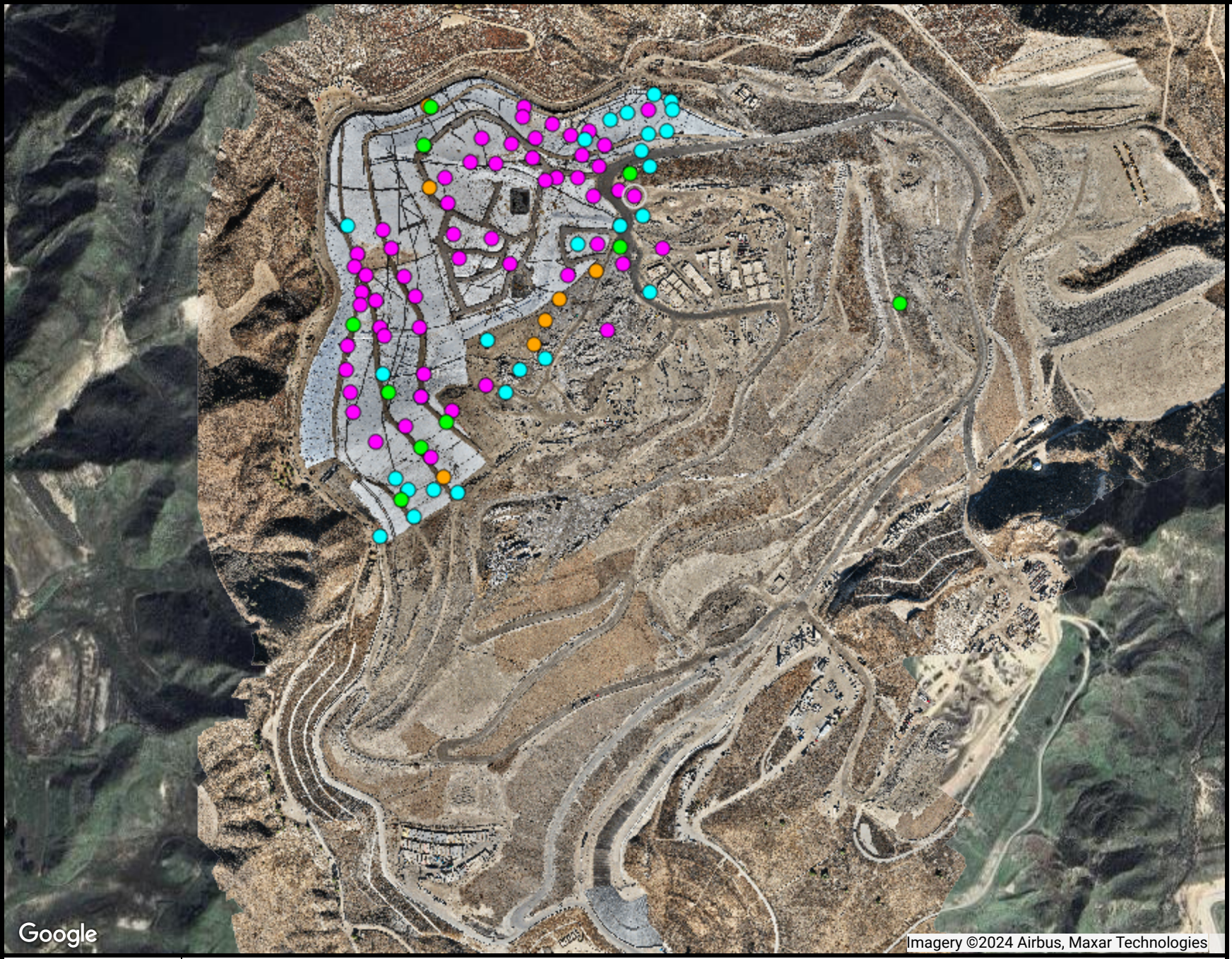
PROJ. NO. 01204123.35 | DWN. BY: ETG | CHK. BY: WCH | APP. BY: WCH | ACAD FILE: ENGINEERS

DSN. BY: -

DATE: 12/10/2024

SCALE: AS SHOWN

SHEET: 1



Ranges Mapped

	# Points
>= 0 and < 100	27
>= 100 and < 500	10
>= 500 and < 1000	7
>= 1000 and < 1000000	56

Point Type Legend

- well
- Inactive Points

N

SCSeTools

Chiquita Canyon Landfill

Range Map

Parameter: CO (mid range)

Analysis Method: Average

Date Range: 11/01/2024 - 11/30/2024

Map generation date : 12/10/2024

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT E TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

January 10, 2024
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Modified Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of December 2024, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 1/8/25. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2, as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line.

The rationale that serves as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include the following:

- LFG wellhead temperatures in excess of approximately 160 degrees Fahrenheit.
- Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.
- The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.
- Accelerated settlement of the landfill surface, defined as approximately 18 inches or greater within a 60-day period, and cracks in landfill cover. This corresponds to a strain value (i.e., settlement rate) rate of 3 percent per year for areas with a 300-foot waste column depth, which we believe is a reasonable average depth in the subject area of interest.
- First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint (often described as "chemical-like" and distinctly different from typical LFG or landfill working face odors).

- Observations of subsurface waste conditions and characteristics as noted on borehole drilling logs for recently installed new wells and/or probes.

- Subsurface temperatures recorded at the in-situ waste temperature probes during December 2024.

- Subsurface temperatures and pressures noted during the sonic drilling of new waste temperature probes during December 2024.

ADJUSTMENTS TO THE ESTIMATED EXTENT OF ETLF CONDITIONS (DASHED MAGENTA LINE)

Near CV-2328

The alignment of the estimated extent of ETLF conditions (dashed magenta line) has been adjusted approximately 40 feet to the southeast to encompass extraction well CV-2328. December data indicated that, while gas wellhead temperatures at CV-2328 fluctuated between 146 and 164 degrees Fahrenheit, the temperature demonstrated an increasing trend in the later portion of the month. The methane concentrations fluctuated between 15 and 49 percent and demonstrated a decreasing trend during the later portion of the month. The oxygen concentrations remained less than 1 percent.

The Reaction Committee has identified potential causes of this trend. Specifically, well CV-2475 is positioned immediately adjacent to a confluence of old, deep horizontal collectors (for example, H-47 at an elevation of 1175 feet) that extends hundreds of feet into the reaction area, so it is possible that the source of the heat and reaction gas at this vertical well is offset some distance away and is being conveyed toward CV-2328 through the horizontal collectors' piping and trench. In addition, CV-2328 is equipped with a dedicated dewatering pump, so the recent increase in temperatures and the presence of increased reaction gas (as opposed to typical landfill gas) may be attributable to the lowering of perched leachate levels in this vicinity, which is enabling movement of heat and gas through the void spaces.

The December data recorded at adjacent wells CV-2471 and CV-2472, which are 100 feet and 80 feet (horizontally) from CV-2328, respectively, indicates gas wellhead temperatures less than 130 degrees Fahrenheit, which is within normal ranges for anaerobic digestion and methanogenesis. These wells did exhibit relatively low methane concentrations but it does not appear to be attributed to heat inhibition.

Accordingly, despite the potential that ETLF characteristics being observed at well CV-2328 are attributable to conditions within the reaction area, as delineated during the prior month, the Reaction Committee believes it is prudent to institute this slight adjustment of this data-driven boundary. However, the Reaction Committee does not believe that the 40-foot adjustment to the estimated extent of ETLF conditions in this discrete location necessarily signals an expansion of the subsurface reaction being experienced in the northwest portion of the Landfill.

Near CV-2315

The alignment of the estimated extent of ETLF conditions (dashed magenta line) has been adjusted approximately 20 feet to the east to encompass extraction well CV-2315. The December data indicates that gas wellhead temperatures at CV-2315 were sustained between 162 and 165 degrees Fahrenheit, and that methane concentrations remained suppressed below 15 percent.

Similar to well CV-2328, well CV-2449 is positioned in close proximity to three old, deep horizontal collectors (H-56 at an elevation of 1240 feet, H-1772 at an elevation of 1353 feet, and H-60 at an elevation of 1225 feet). H-56 and H-1772 extend along the reaction area boundary in a north-south direction, whereas H-60 extends hundreds of feet to the west into the reaction area, so it is possible that the source of the heat and reaction gas at this vertical well is offset some distance away and is being conveyed toward CV-2315 through the horizontal collectors' piping and trenches. Furthermore, CV-2315 is equipped with a dedicated dewatering pump, so the recent increase in temperatures and the presence of increased reaction gas (as opposed to typical landfill gas) may be attributable to the lowering of perched leachate levels in this vicinity, which is enabling movement of heat and gas through the void spaces.

The December data recorded at adjacent wells CV-2454 and CV-2455, which are 30 feet and 100 feet from CV-2315, respectively, indicates normal gas wellhead temperature ranges for anaerobic digestion and methanogenesis. While the gas composition data at CV-2454 indicates that methane content is lower than normal, the methane content at CV-2455 was between 33 and 43 percent, which suggests ETLF conditions are not present in these adjacent wells.

Accordingly, despite the potential that ETLF characteristics being observed at well CV-2315 are attributable to conditions within the reaction area as delineated during the prior month, the Reaction Committee believes it is prudent to institute this slight adjustment of this data-driven boundary. However, for the reasons discussed in greater depth below, the Reaction Committee does not believe that the 20-foot adjustment to the estimated extent of ETLF conditions in this discrete location necessarily signals an expansion of the subsurface reaction being experienced in the northwest portion of the Landfill.

The Reaction Committee reviewed the temperature measurements recorded during November 2024 by the in-situ temperature monitoring probes. As of December 2024, four (4) of the twenty (20) probes (TP-2, 3, 9, and 15) are located within the estimated extent of ETLF conditions (dashed magenta line), and twelve (12) probes are positioned adjacent to (within 200 feet) of this boundary. It is the Committee's opinion that the temperatures recorded by the 12 probes outside of the boundary during December 2024 are not indicative of a subsurface reaction and do not substantiate a decision to adjust the boundary of the reaction area (beyond the adjustments described above) at this time.

The Reaction Committee also evaluated the concentration of hydrogen in landfill gas (LFG) during November 2024. Recall that certain wells positioned to the south and east of the reaction area boundary (where dewatering pumping was reactivated) have periodically demonstrated some increased hydrogen content in the LFG during the Reaction Committee's review of the data in previous months, which similarly was the case for the December data. The Reaction Committee noted in its review of the data that these wells did not exhibit elevated temperatures, such that there was no evidence of the increased heat that is typical with ETLF conditions present at these wells. The Committee suspects this increased hydrogen content may be attributable to wells believed to be

intercepting gas collected from within the reaction area by existing horizontal collectors in close proximity. Thus, the presence of elevated hydrogen in these isolated locations does not suggest that ETLF conditions are expanding south and east of the delineated boundary. Accordingly, the Reaction Committee does not believe an adjustment to the boundary of the reaction area (beyond the adjustments described above) is merited at this time.

As presented on the Drawing included as **Attachment A**, the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Because the ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell, the Reaction Committee finds no basis to modify the Reaction Area boundary as prescribed in Condition 9a at this time.

There was no dissenting opinion among the Reaction Committee members regarding this monthly determination. Supporting data is presented on the Drawing included as **Attachment A.** The maximum temperature measurements recorded at the 20 in-situ waste temperature monitoring probes during October are presented in **Attachment B** in graphical format. The landfill gas wellhead temperatures recorded at the extraction wells in the vicinity of the data-driven reaction area boundary are reflected on the isothermal gradient range map present as **Attachment C**. The carbon monoxide (CO) concentrations measured at the landfill gas wellheads are depicted on the range map presented as **Attachment D**. The electronic database and recordkeeping platform enables these measurements to be downloaded into a tabular spreadsheet format, which can be submitted to the South Coast Air Quality Management District under separate cover, if requested.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

RED/PSS

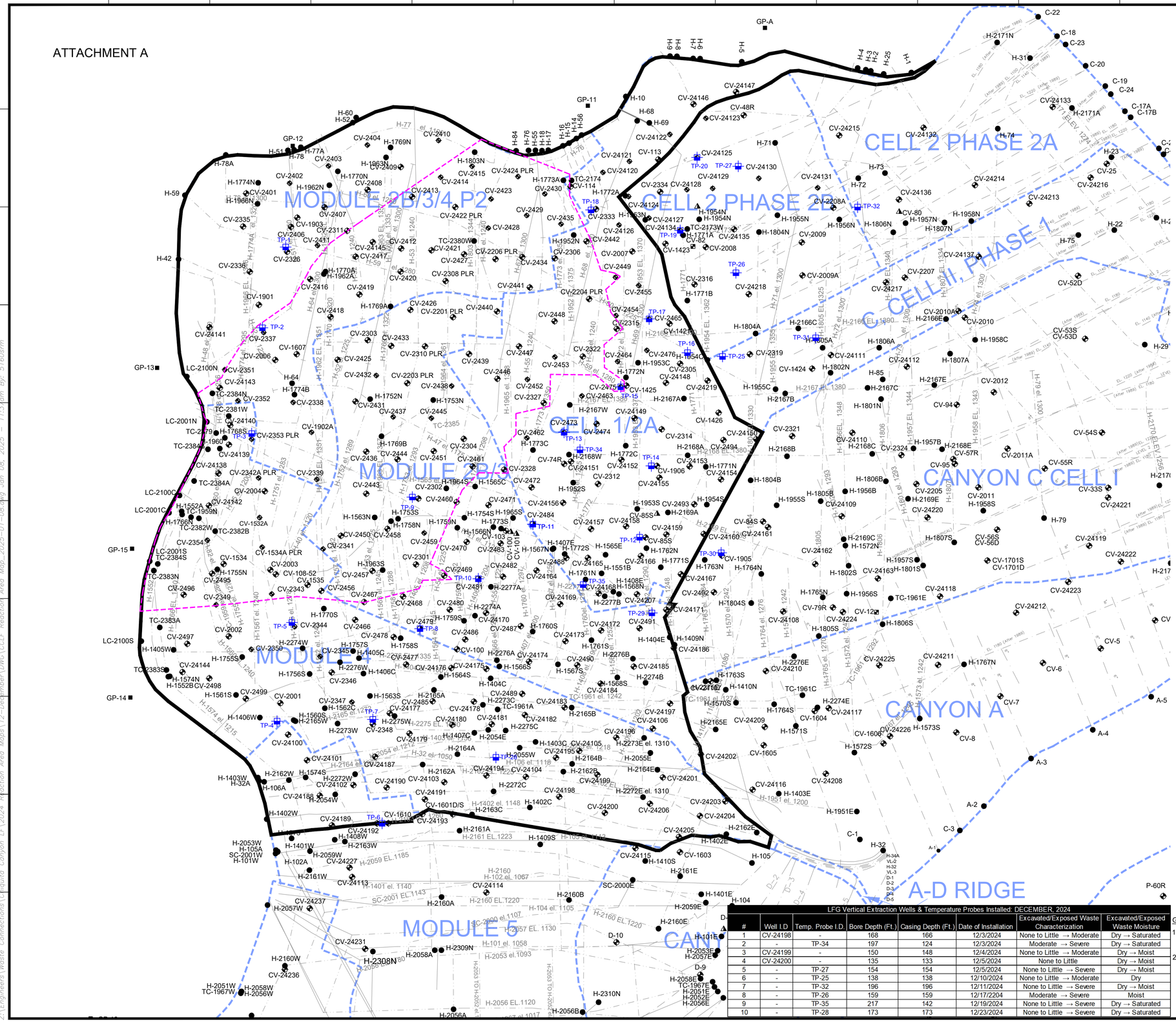
cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Richard Pleus, PhD, Intertox
Srividhya Viswanathan, PE, SCS Engineers

Enclosures:

Attachment A – Reaction Area Map
Attachment B – In-Situ Waste Temperature Monitoring Probe Data

Attachment C – Isothermal Gradient Range Map
Attachment D – Wellhead Carbon Monoxide Range Map

ATTACHMENT A



LEGEND

- EXISTING CELL LIMITS (APPROXIMATE)
- CV-XX EXISTING VERTICAL WELLS
- CV-XX PLR EXISTING VERTICAL WELL - PRESSURIZED LEACHATE RELEASE
- CV-XX EXISTING VERTICAL WELLS BELOW-GRADE
- H-XX EXISTING HORIZONTAL WELLS
- CV-XX EXISTING REMOTE VERTICAL WELLHEAD
- GP-XX EXISTING PERIMETER MIGRATION PROBE
- TP-XX EXISTING TEMPERATURE PROBE
- EXISTING HORIZONTAL COLLECTOR - SOLID
- EXISTING HORIZONTAL COLLECTOR - PERFORATED
- EXISTING HISTORIC HORIZONTAL COLLECTOR
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
- REACTION AREA BOUNDARY - CONDITION 9A

LFG Vertical Extraction Wells & Temperature Probes Installed: DECEMBER, 2024

#	Well I.D	Temp. Probe I.D.	Bore Depth (Ft.)	Casing Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Characterization	Excavated/Exposed Waste Moisture
1	CV-24198	-	168	166	12/3/2024	None to Little → Moderate	Dry → Saturated
2		TP-34	197	124	12/3/2024	Moderate → Severe	Dry → Saturated
3	CV-24199	-	150	148	12/4/2024	None to Little → Moderate	Dry → Moist
4	CV-24200	-	135	133	12/5/2024	None to Little	Dry → Moist
5	-	TP-27	154	154	12/5/2024	None to Little → Severe	Dry → Moist
6	-	TP-25	138	138	12/10/2024	None to Little → Moderate	Dry
7	-	TP-32	196	196	12/11/2024	None to Little → Severe	Dry → Moist
8	-	TP-26	159	159	12/17/2204	Moderate → Severe	Moist
9	-	TP-35	217	142	12/19/2024	None to Little → Severe	Dry → Saturated
10	-	TP-28	173	173	12/23/2024	None to Little → Severe	Dry → Saturated

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE / REVISION / NO.

SHEET TITLE: REACTION AREA MAP DECEMBER, 2024

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX: (562) 427-0805

ACAD FILE: -
DWN. BY: SRM
CHK. BY: WCH
APP. BY: WCH
PROJ. NO. 012041123.35
DSN. BY: -

DATE: 01/08/2025

SCALE: AS SHOWN

SHEET: 1

Z:\Engineers\Waste Connections\Chiquita Canyon LF\2024 Reaction Area Maps\12-December\DWG\CCLF Reaction Area Map_2025-01-08.dwg Jan 08, 2025 - 11:13am By: 5160rm

ATTACHMENT B

Solid Waste Borehole Maximum Temperature Profiles Over 6 Weeks

for 11/14/2024 to 12/25/2024

From December 19, 2024, through December 25, 2024, there were recorded temperature increases and decreases that triggered the notification limits set forth in the LEA's October 4, 2024 letter, all associated with the same TMP (TP-15).

Chiquita provides the following updates:

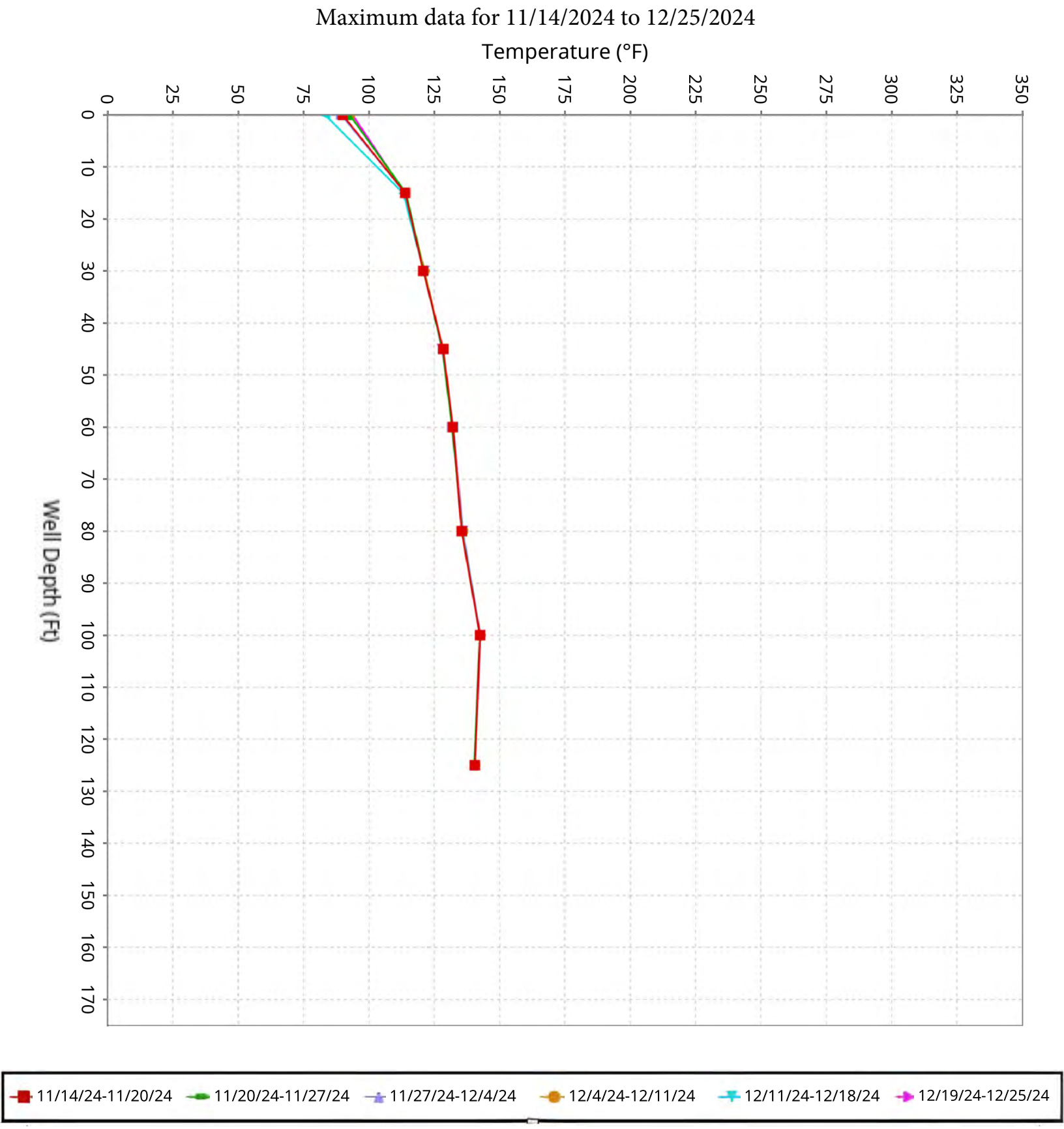
- TP-08
  - TP-8 was taken offline on October 3rd for filling operations related to the west toe excavation, and offline thermocouples read a default maximum possible temperature of 2,508°F.
- TP-10
  - 30-foot thermocouple remained consistent with the prior weeks temperature change notification.
- TP-14
  - 30-foot thermocouple showed an additional small decrease below the LEA reporting limits.
- TP-15
  - 30-foot thermocouple showed an increase in maximum temperature of 14°F from 163°F to 177°F from December 18th to December 20th, then a decrease of 12°F from 177°F to 165°F from December 20th to December 22nd, then an increase of 11°F from 165°F to 176°F from December 22nd to December 23rd, and then a decrease of 15°F from 176°F to 161°F from December 23rd to December 25th. Resulting in an overall decrease of 2°F.

SCS ENGINEERS

07224053.00 | December 30, 2024

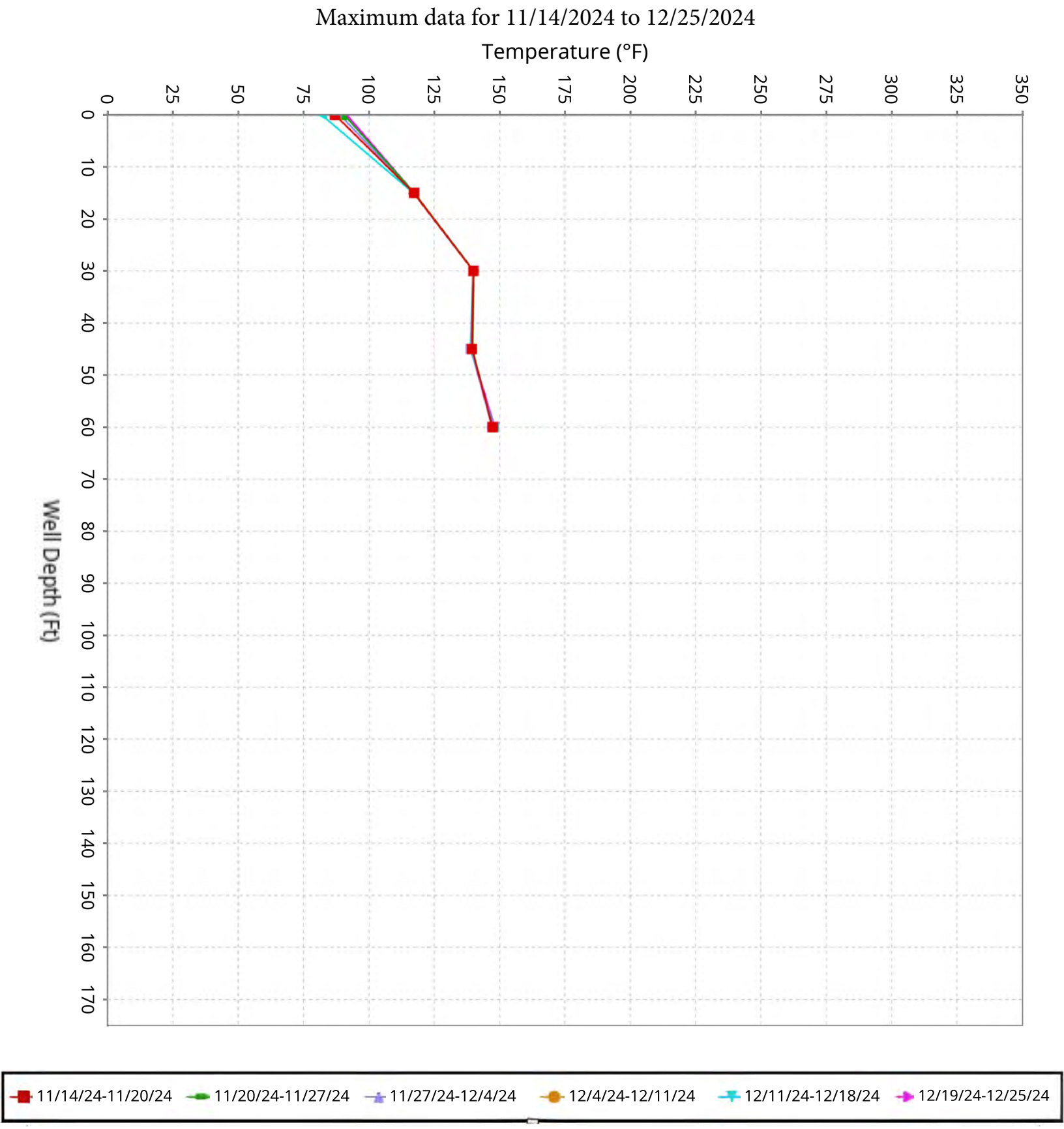
274 Granite Run Drive
Lancaster, PA 17601
717-550-6330

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-1



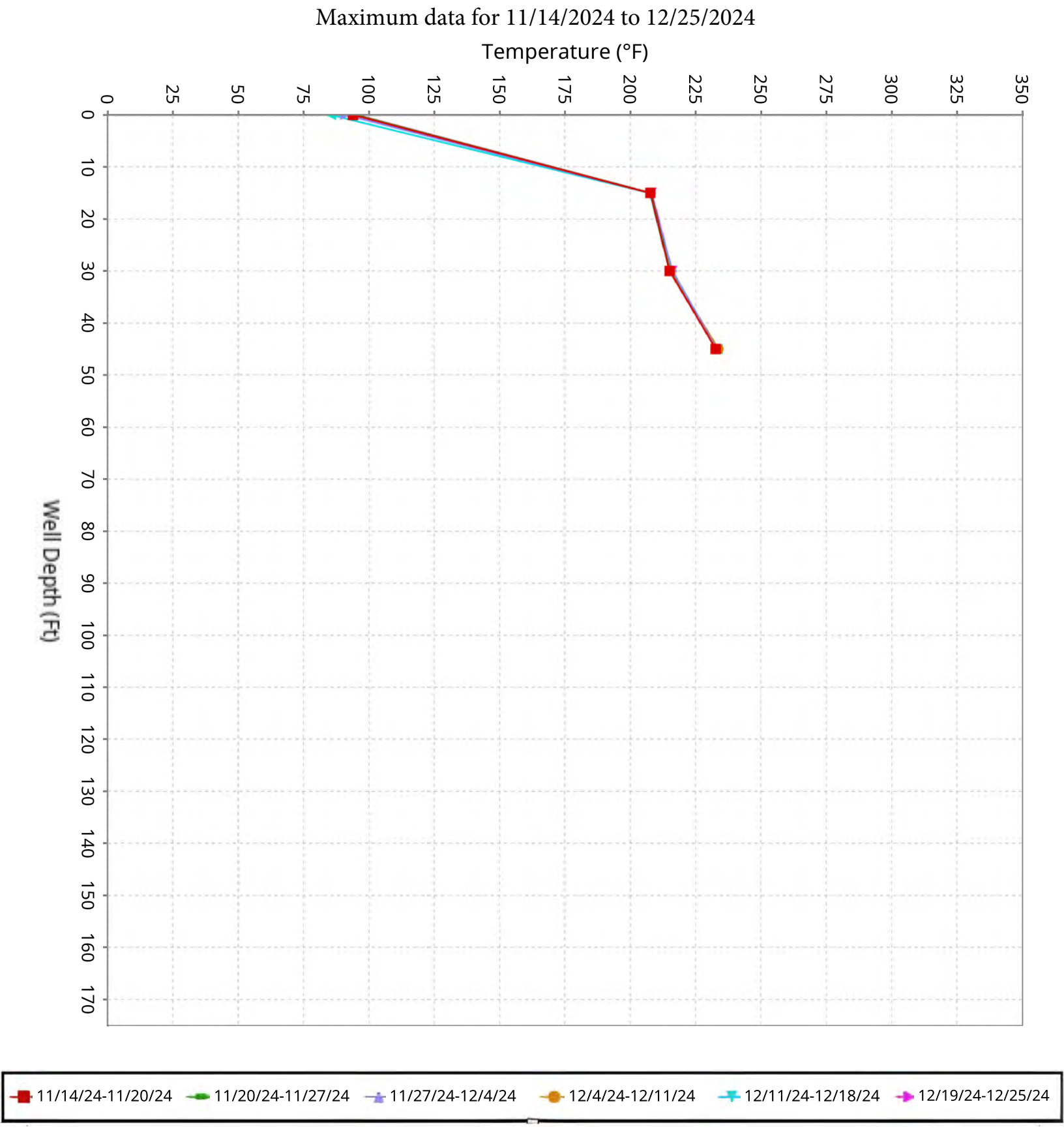
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-2



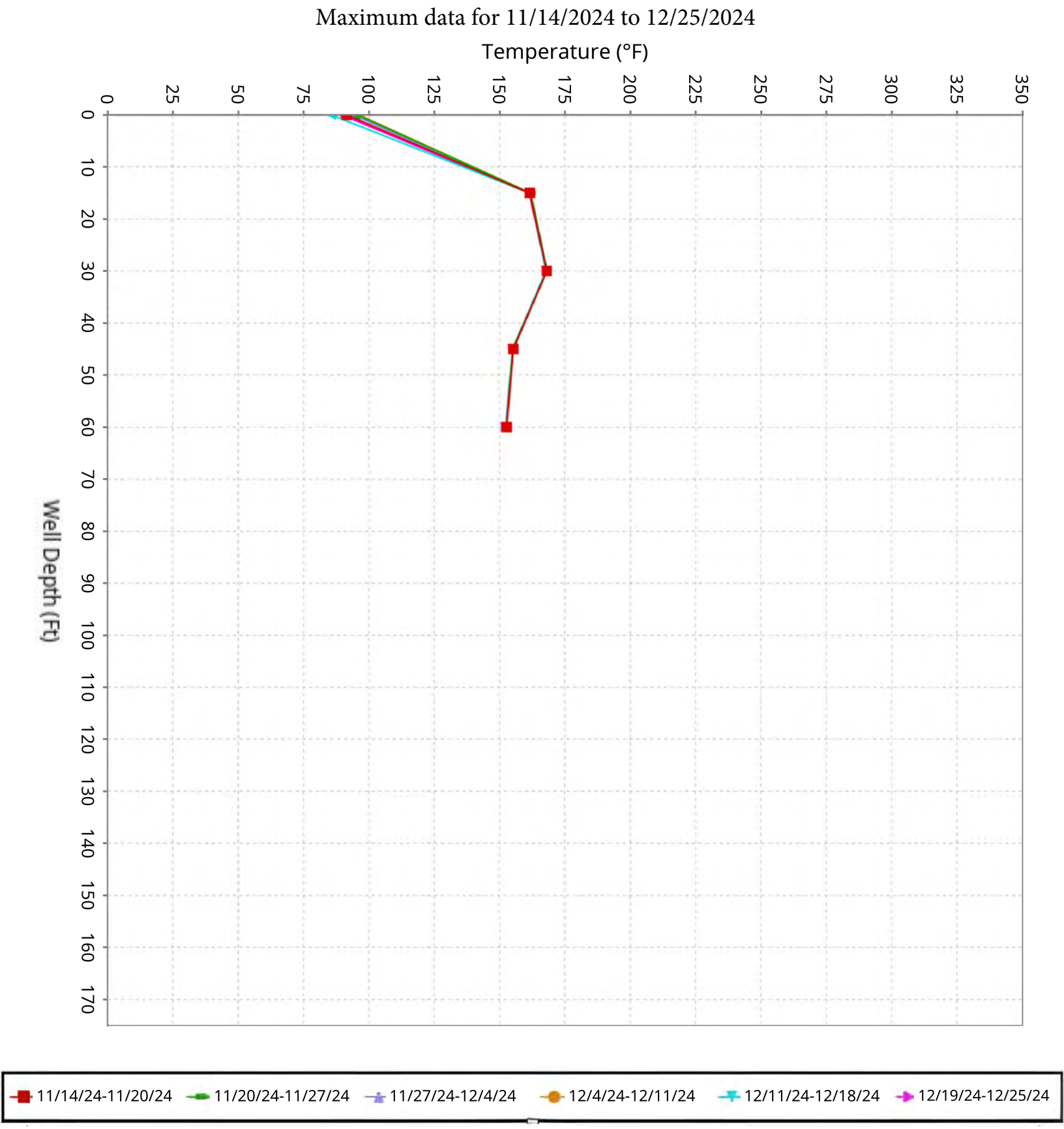
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-3



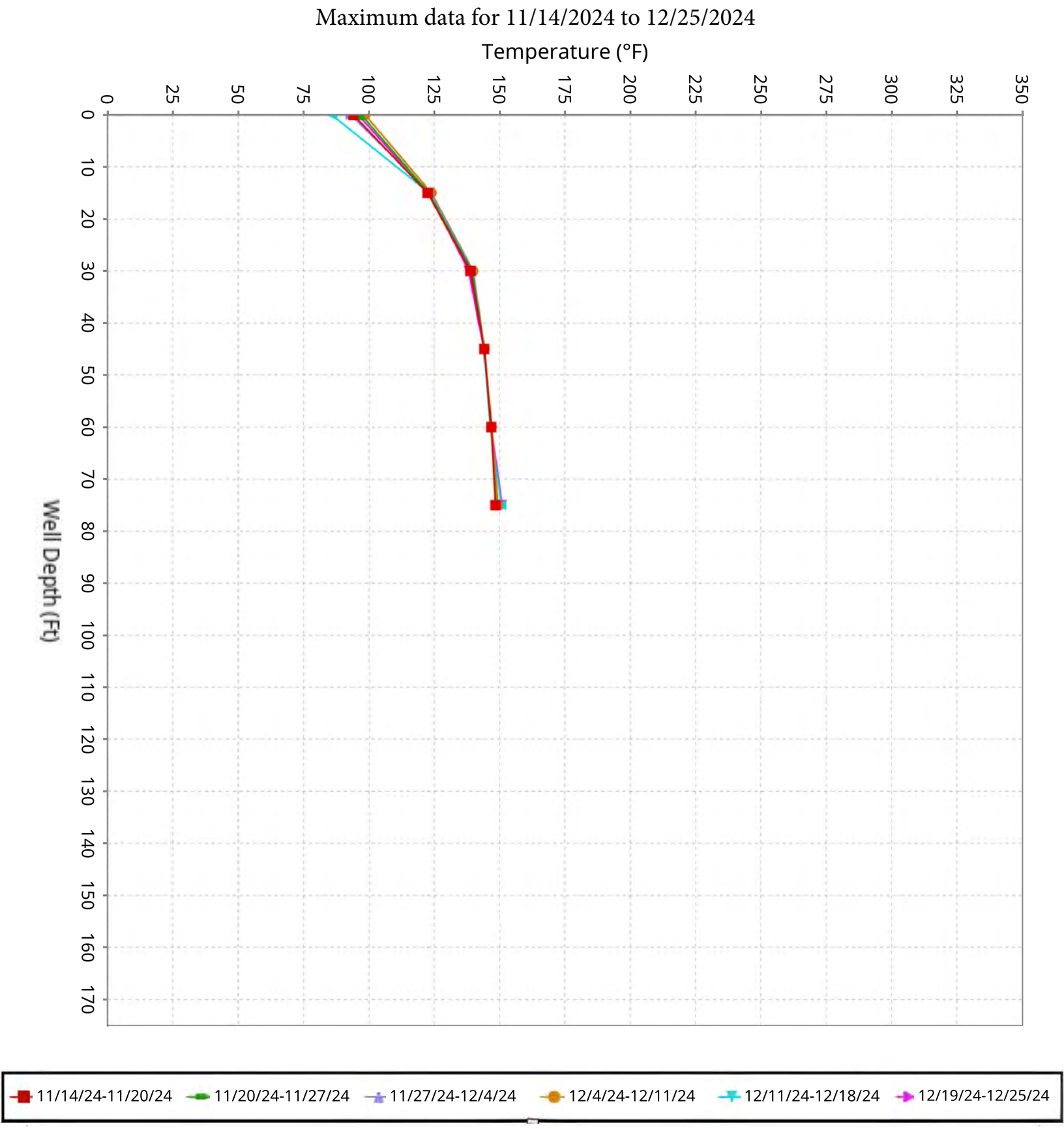
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-4



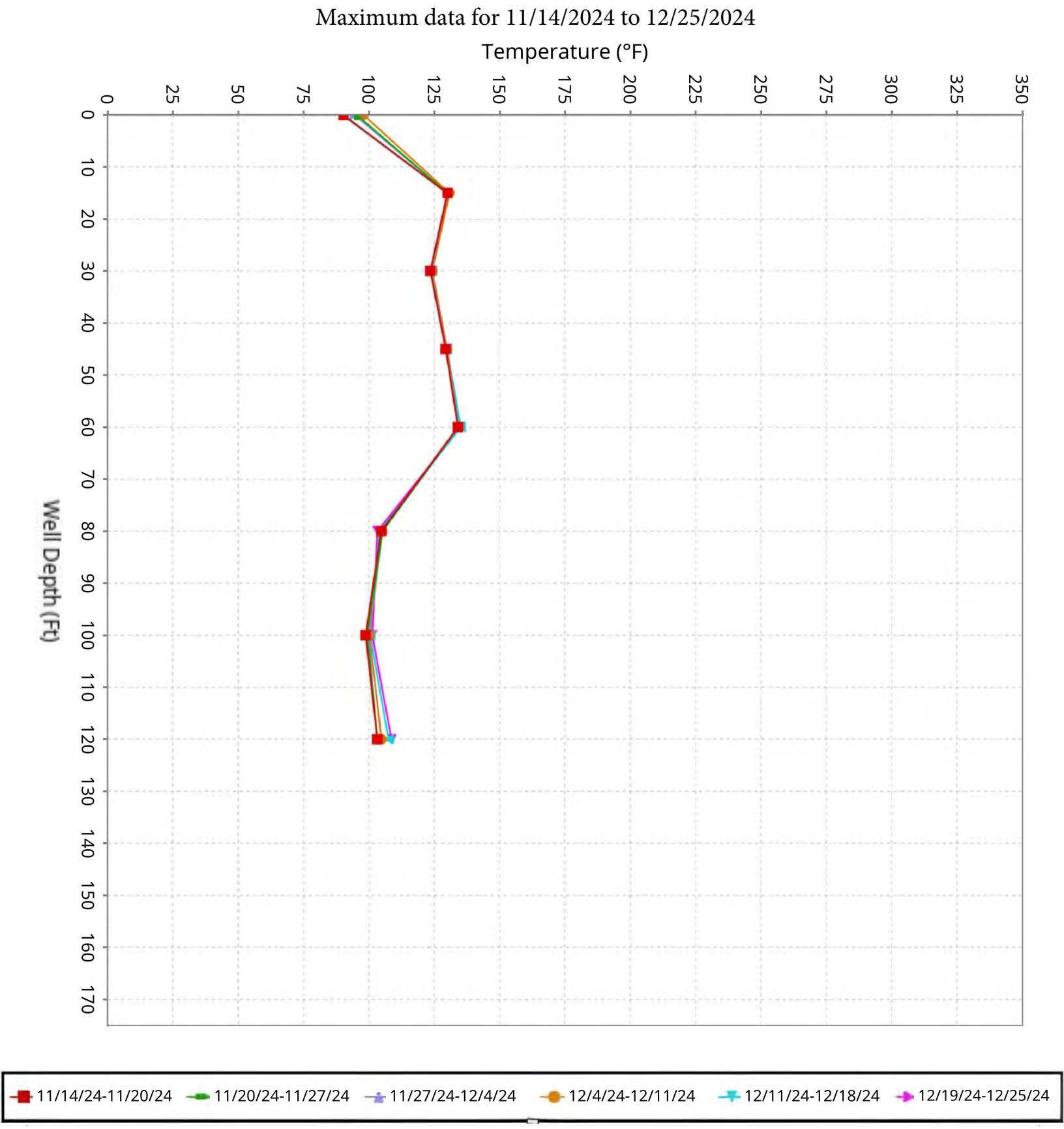
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-5



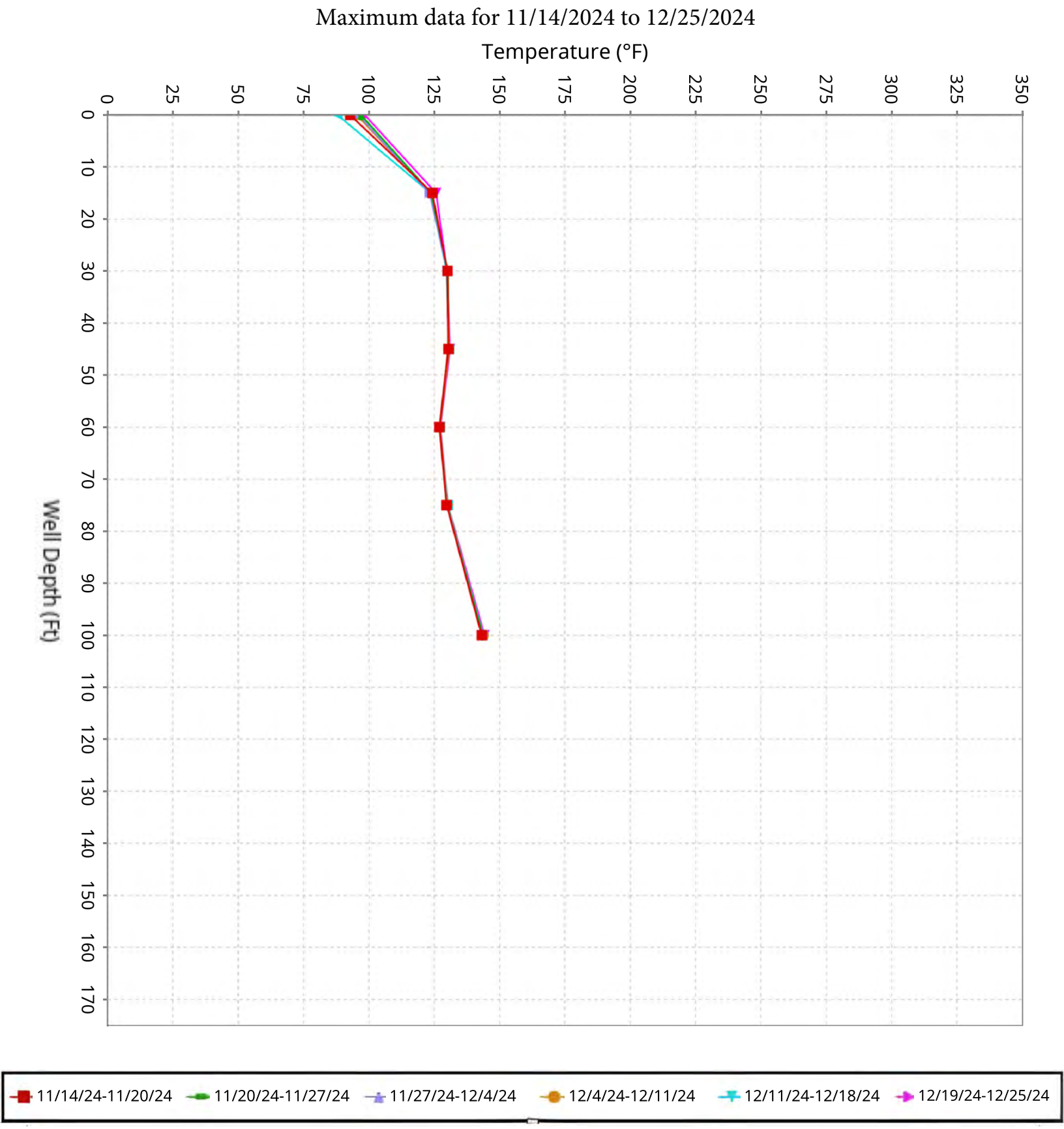
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-6



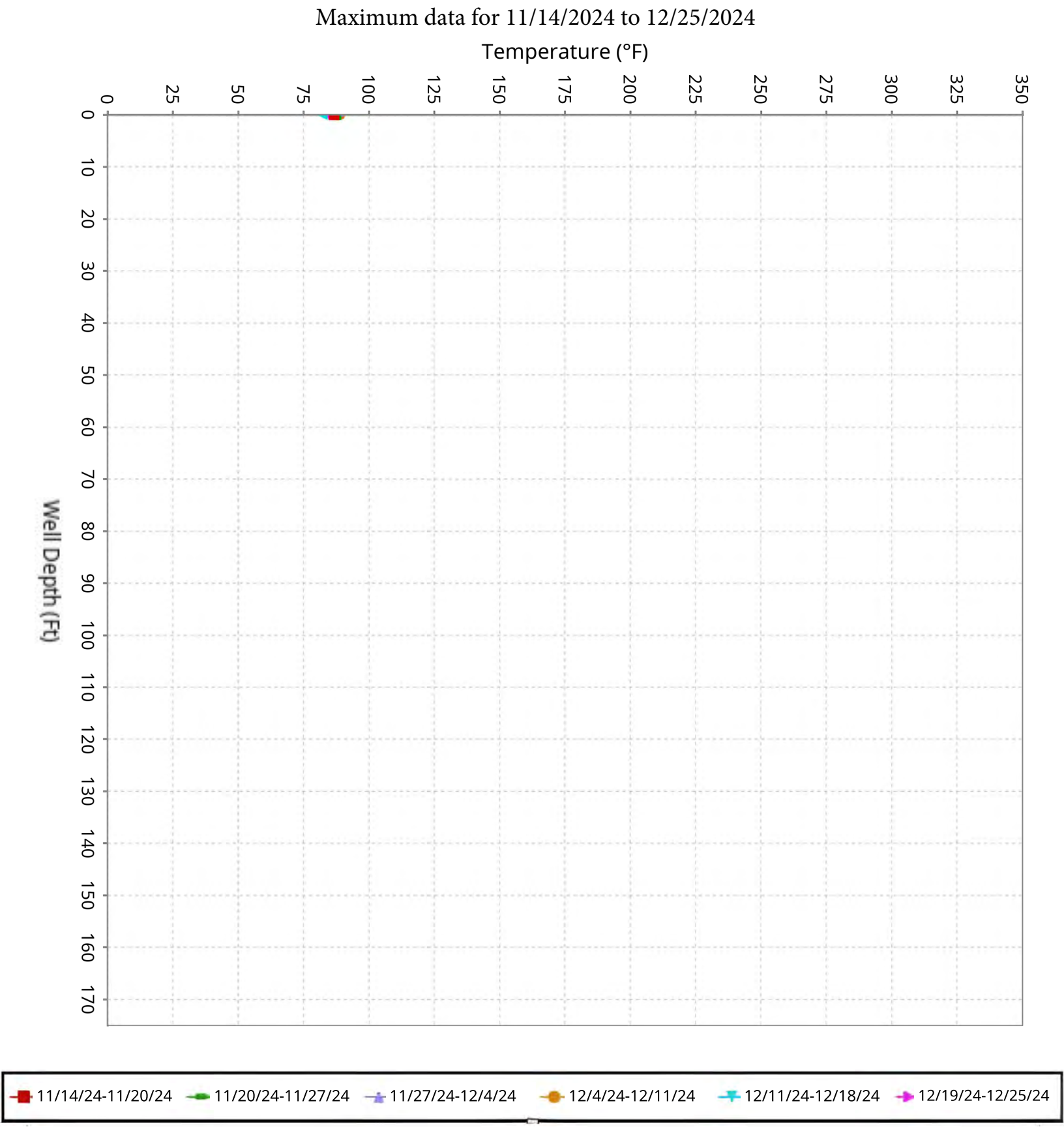
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-7



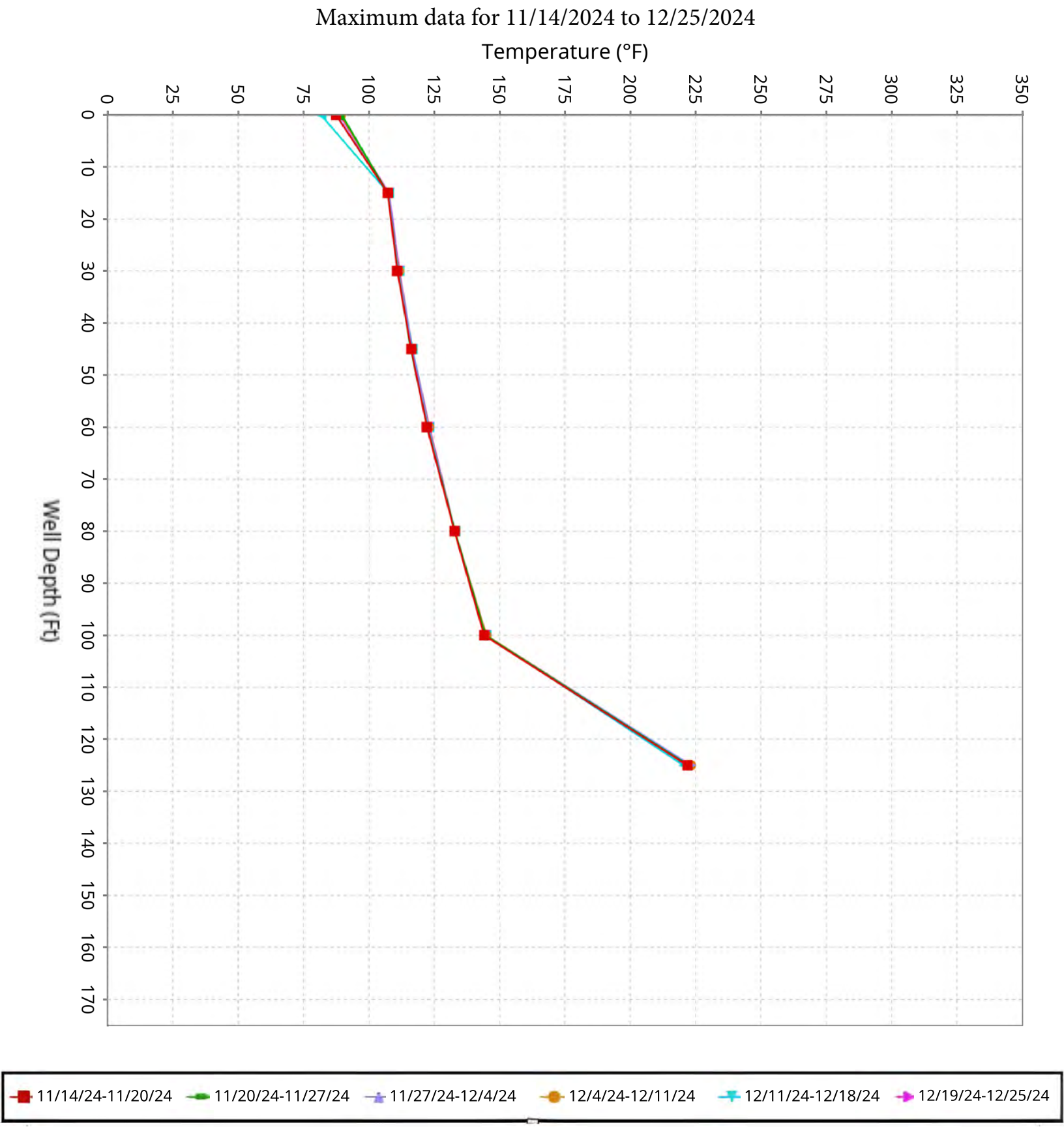
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-8



SCS ENGINEERS

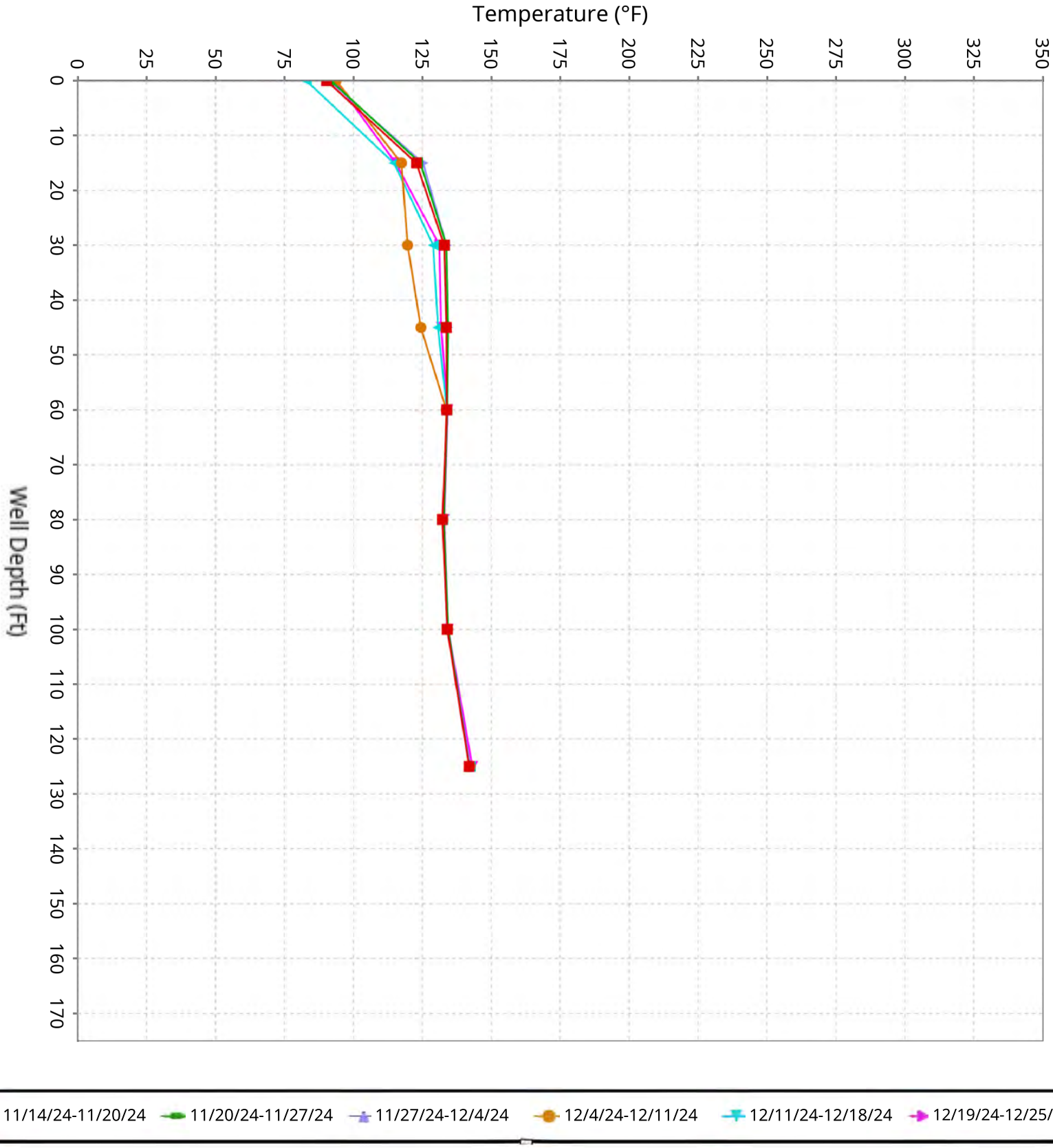
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-9



SCS ENGINEERS

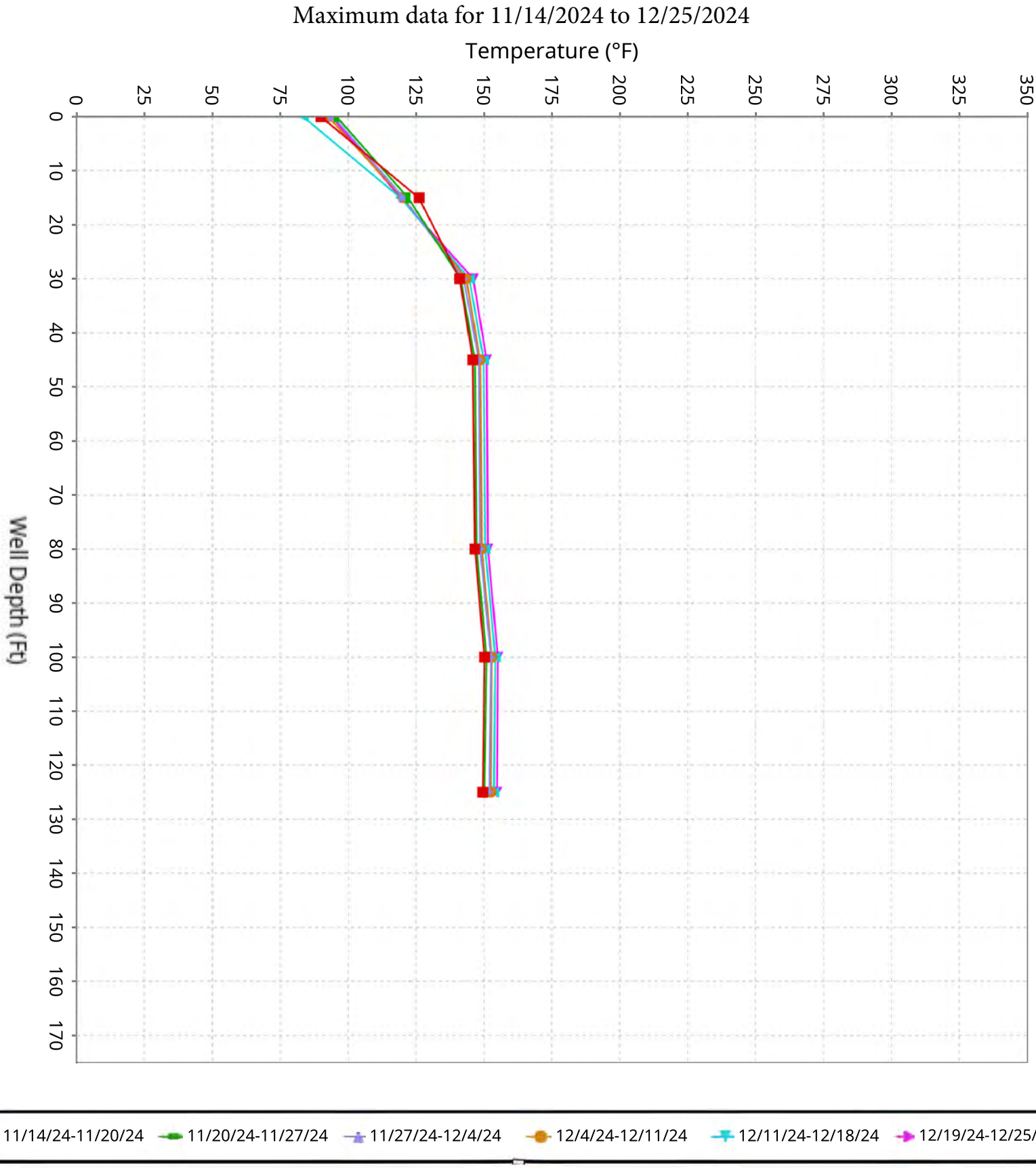
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-10

Maximum data for 11/14/2024 to 12/25/2024



SCS ENGINEERS

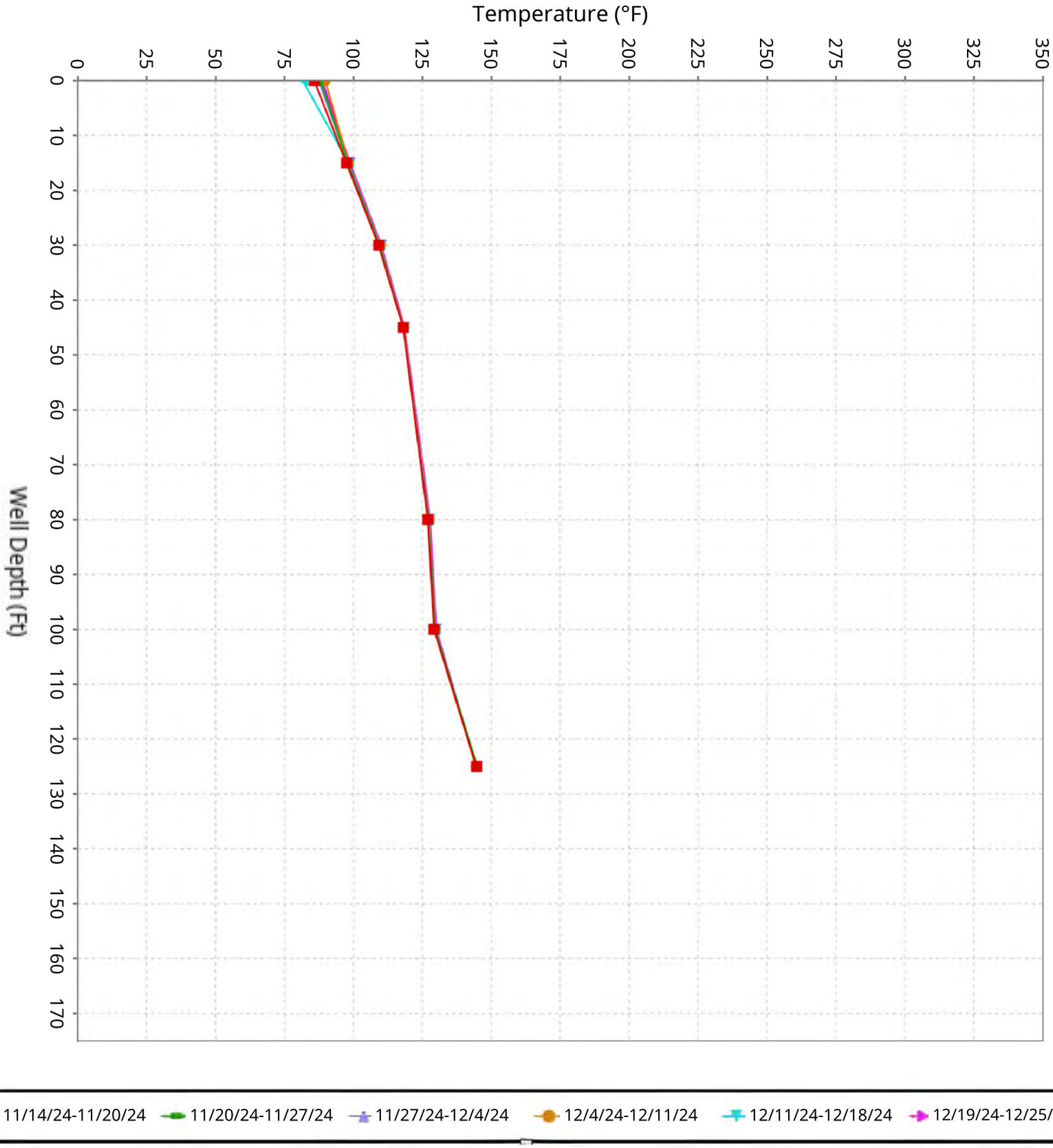
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-11



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-12

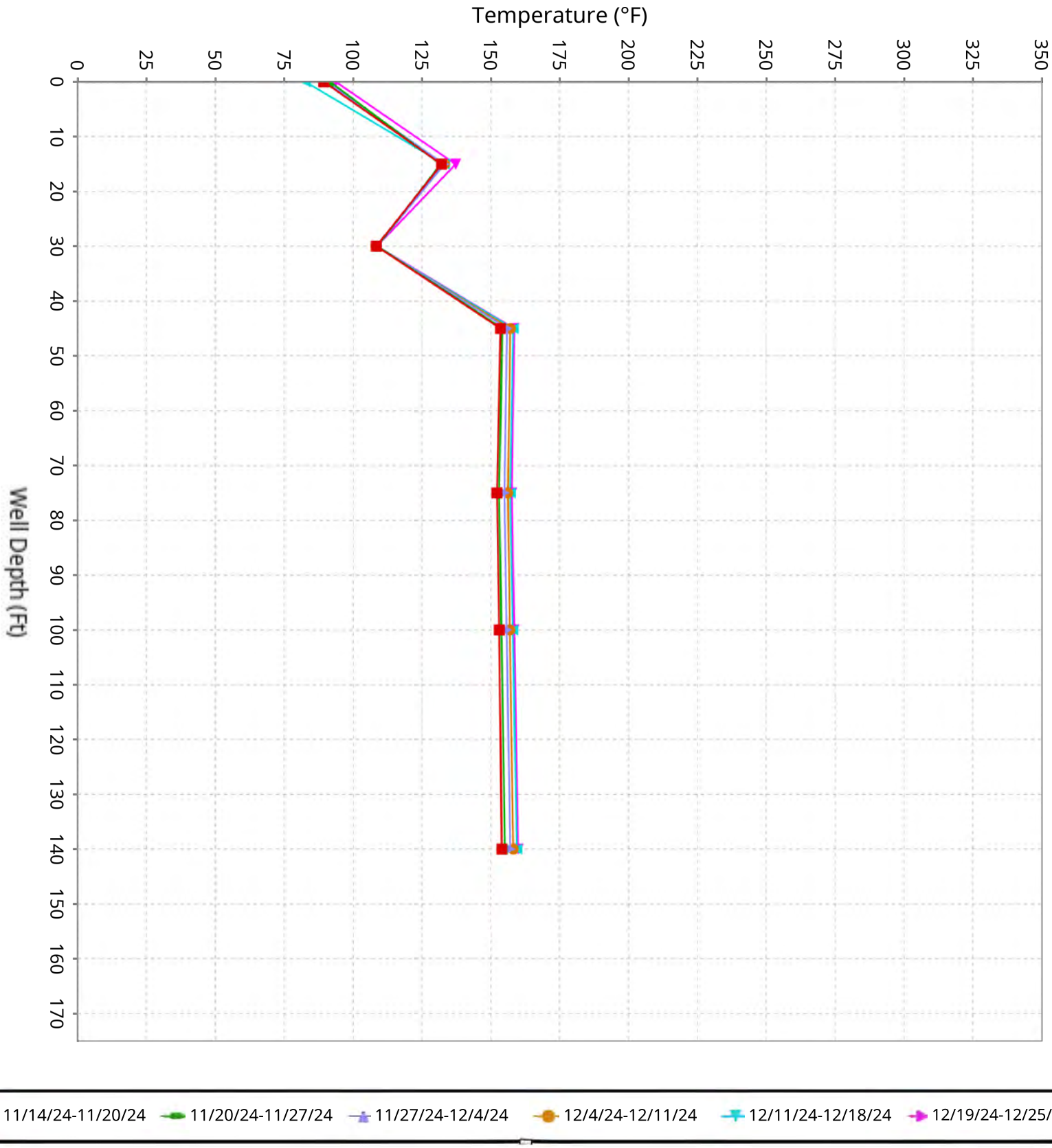
Maximum data for 11/14/2024 to 12/25/2024



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-13

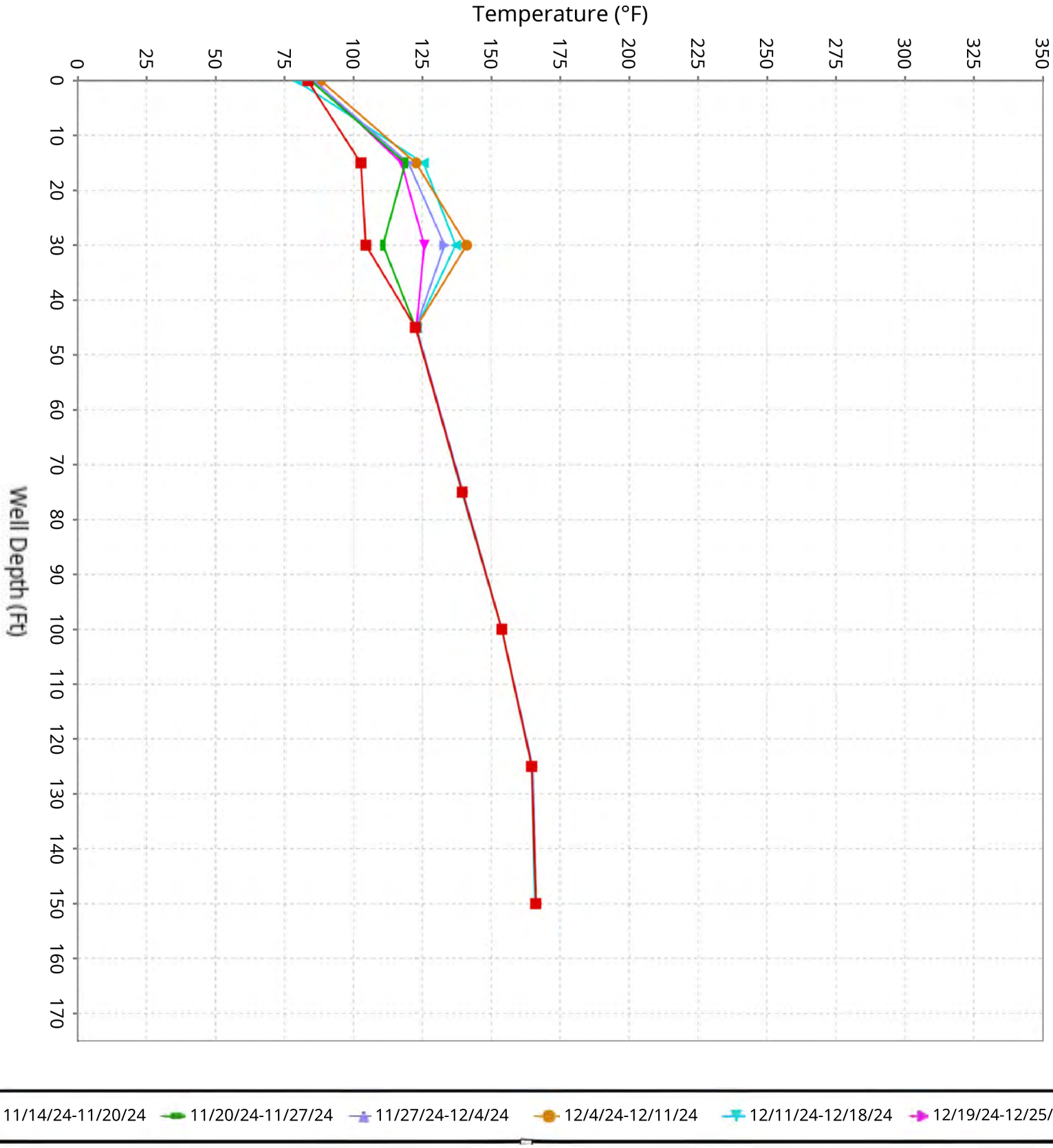
Maximum data for 11/14/2024 to 12/25/2024



SCS ENGINEERS

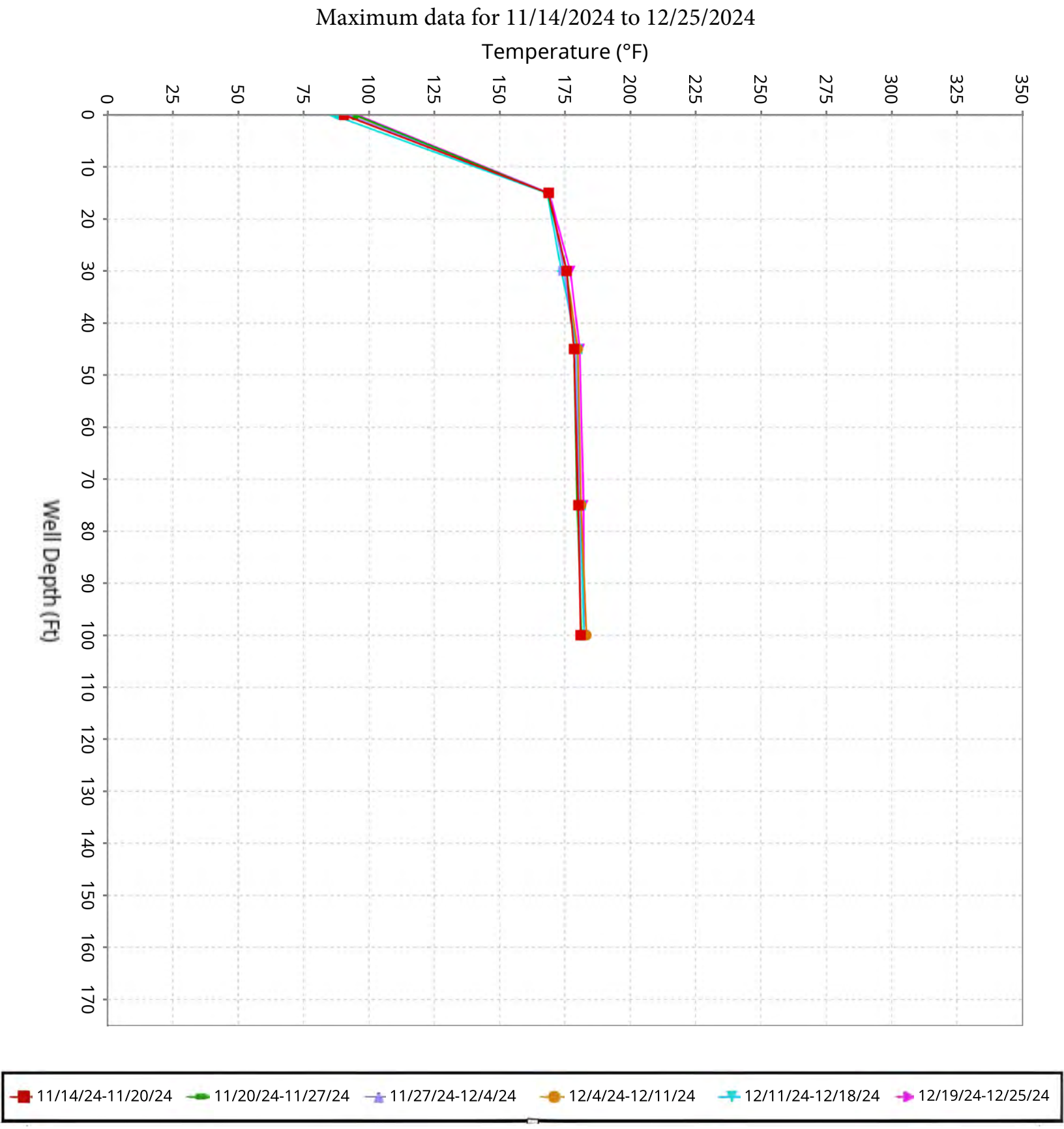
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-14

Maximum data for 11/14/2024 to 12/25/2024



SCS ENGINEERS

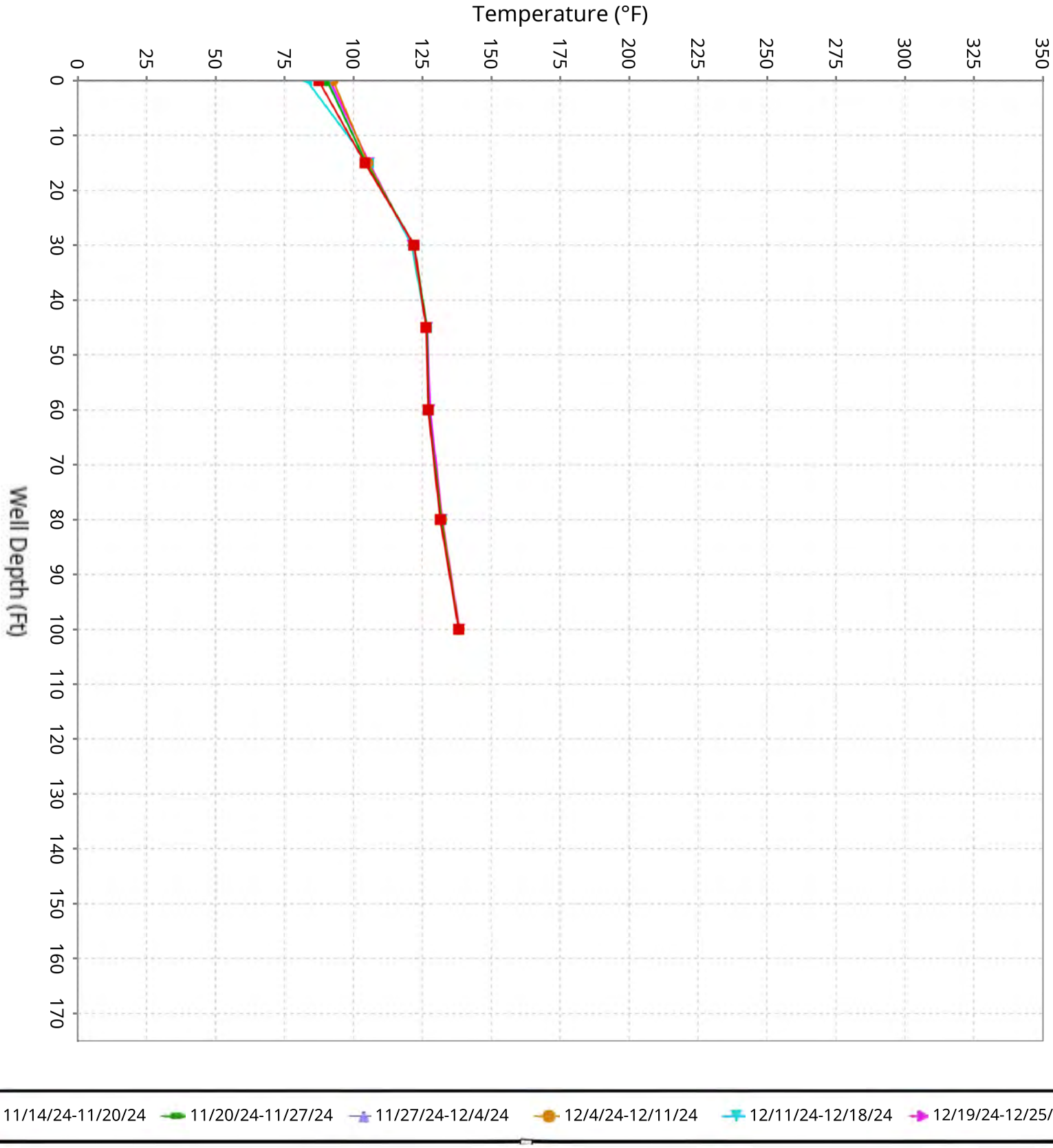
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-15



SCS ENGINEERS

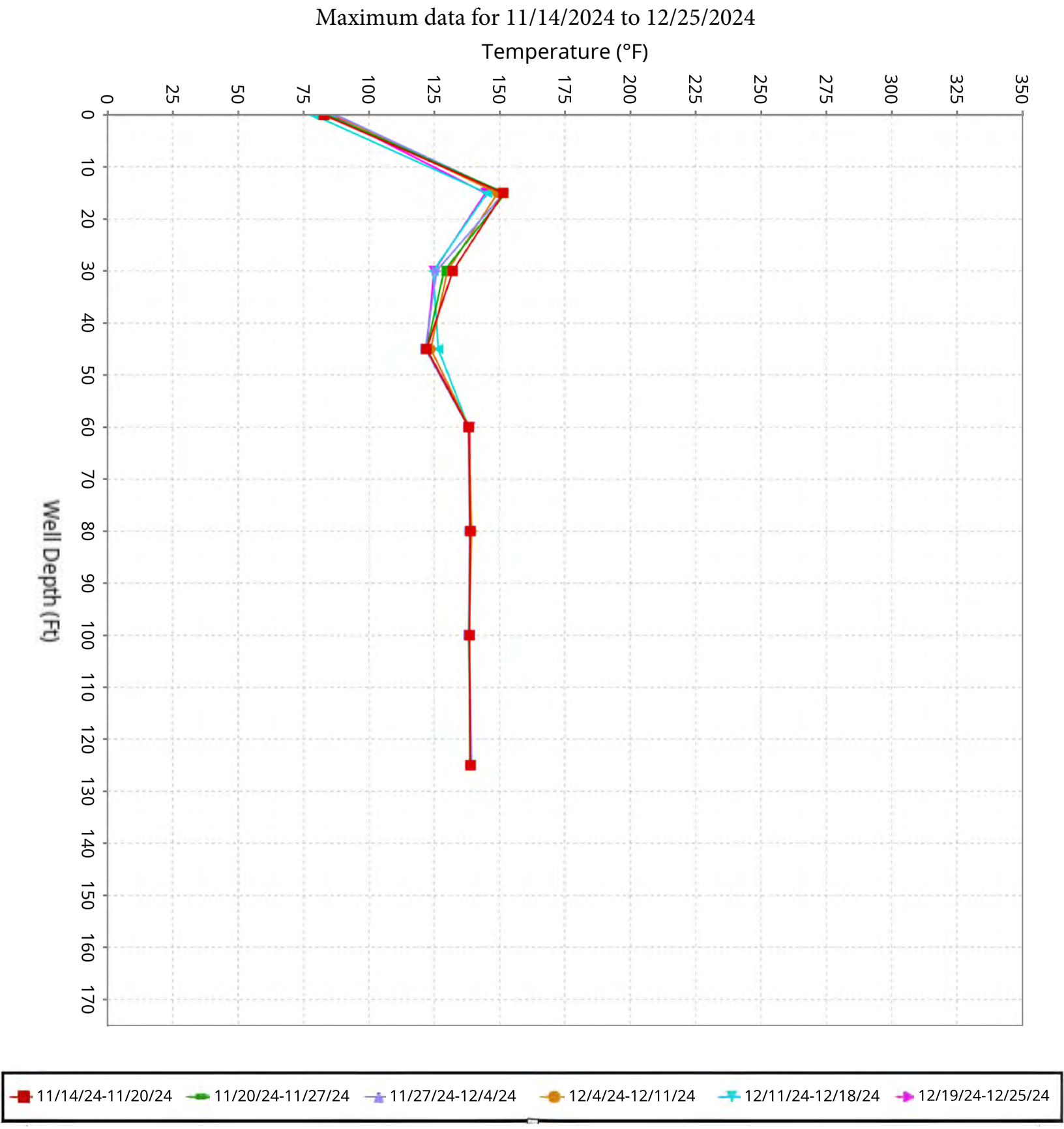
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-16

Maximum data for 11/14/2024 to 12/25/2024



SCS ENGINEERS

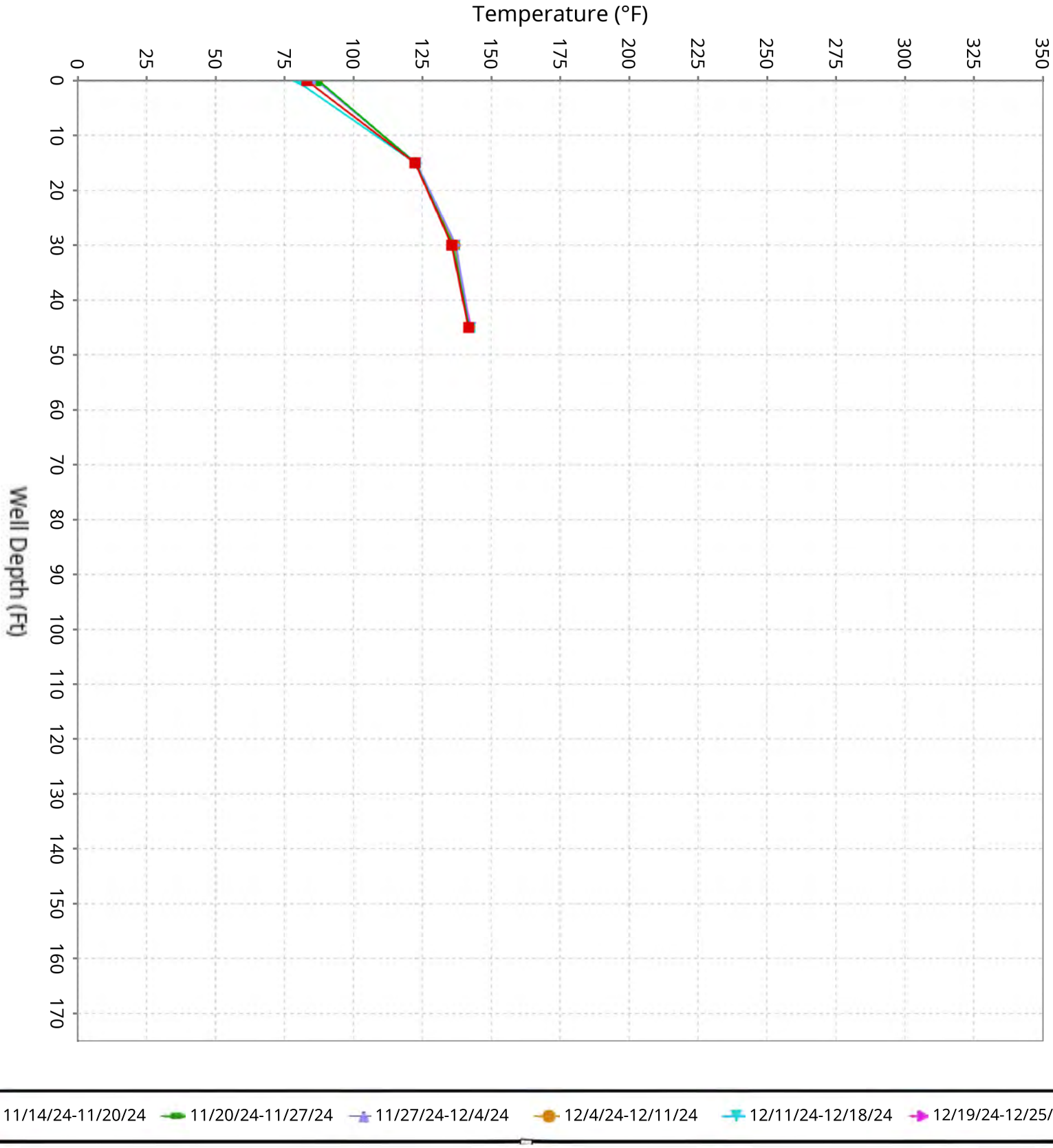
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-17



SCS ENGINEERS

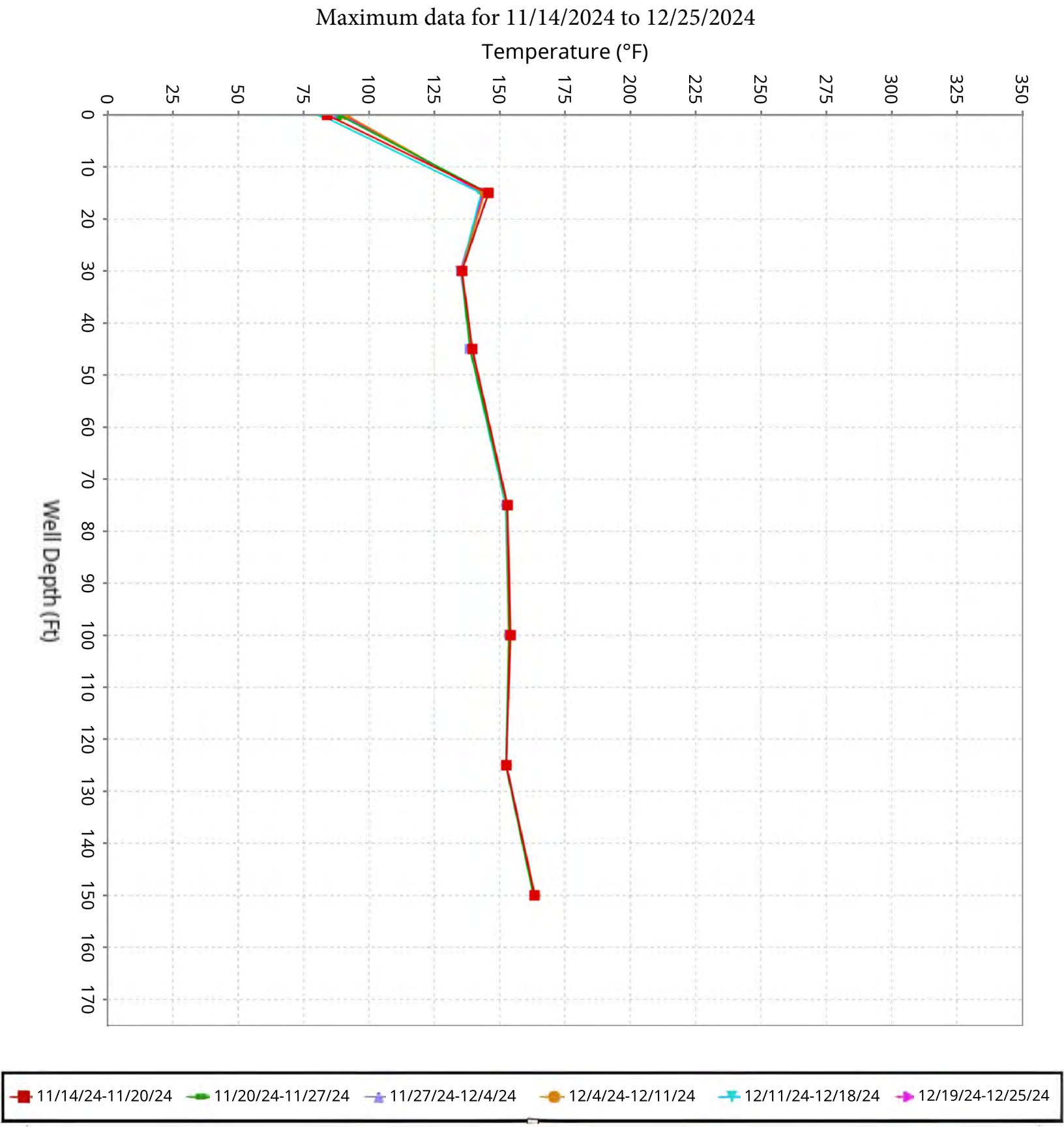
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-18

Maximum data for 11/14/2024 to 12/25/2024



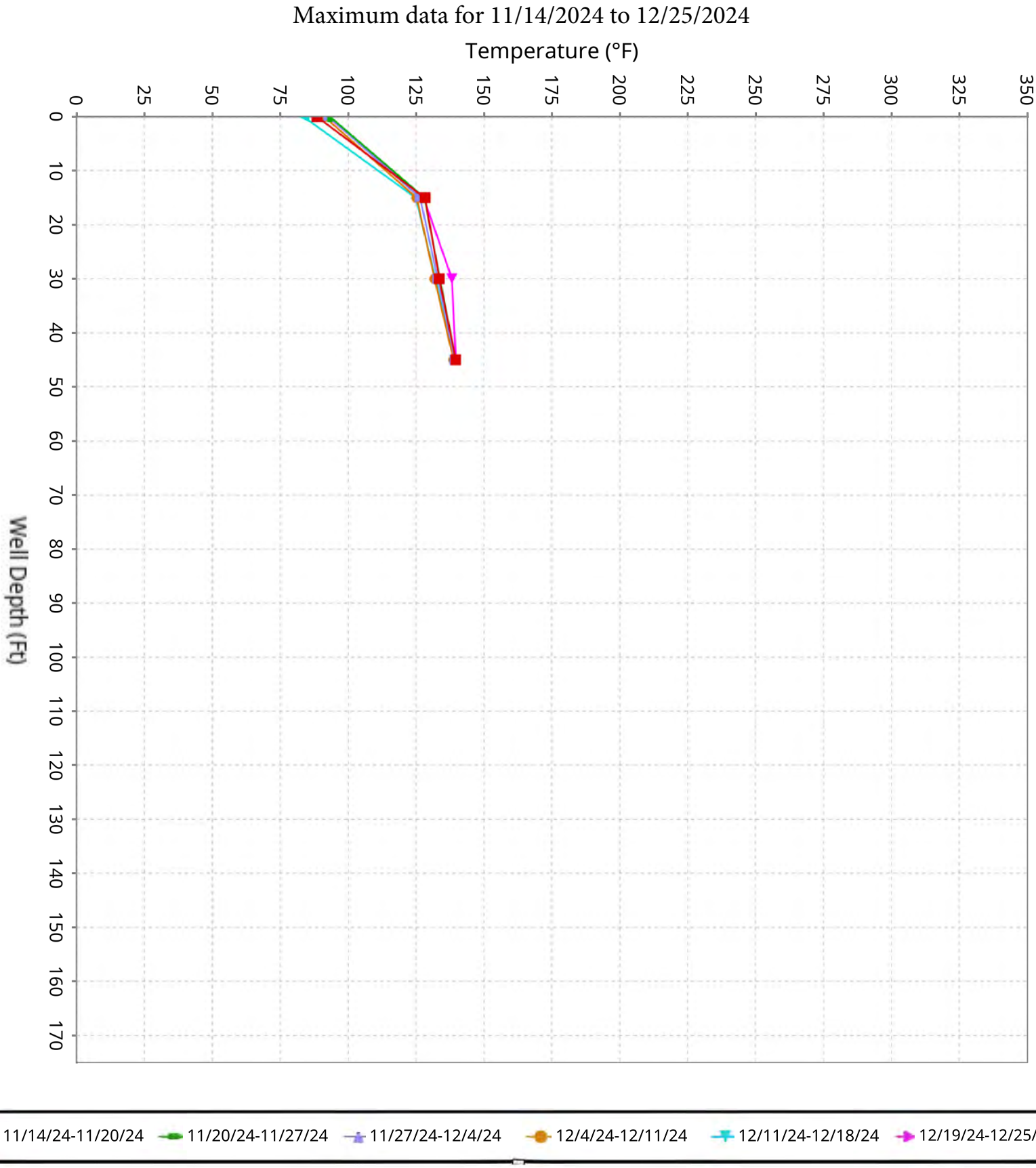
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-19



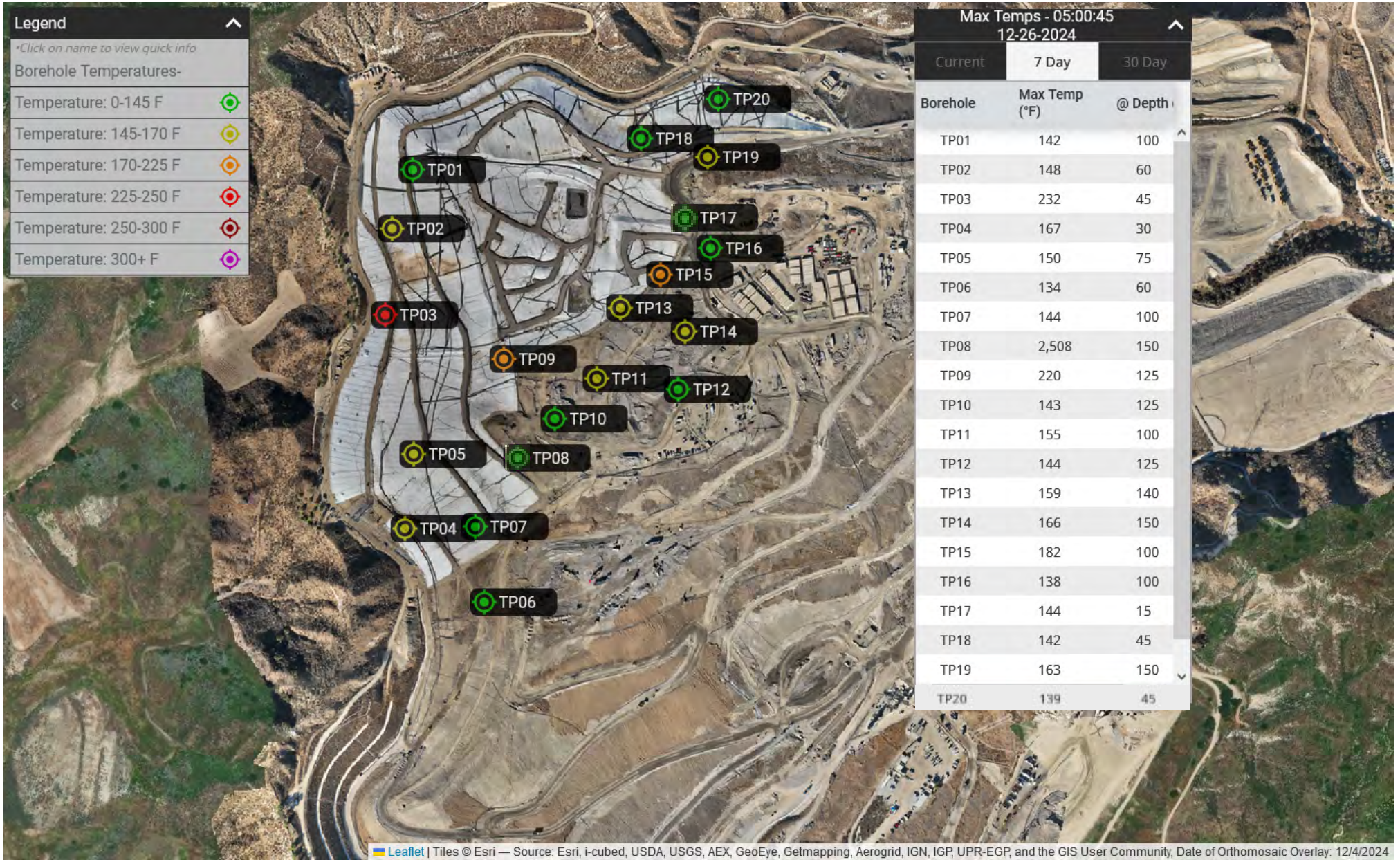
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-20



SCS ENGINEERS

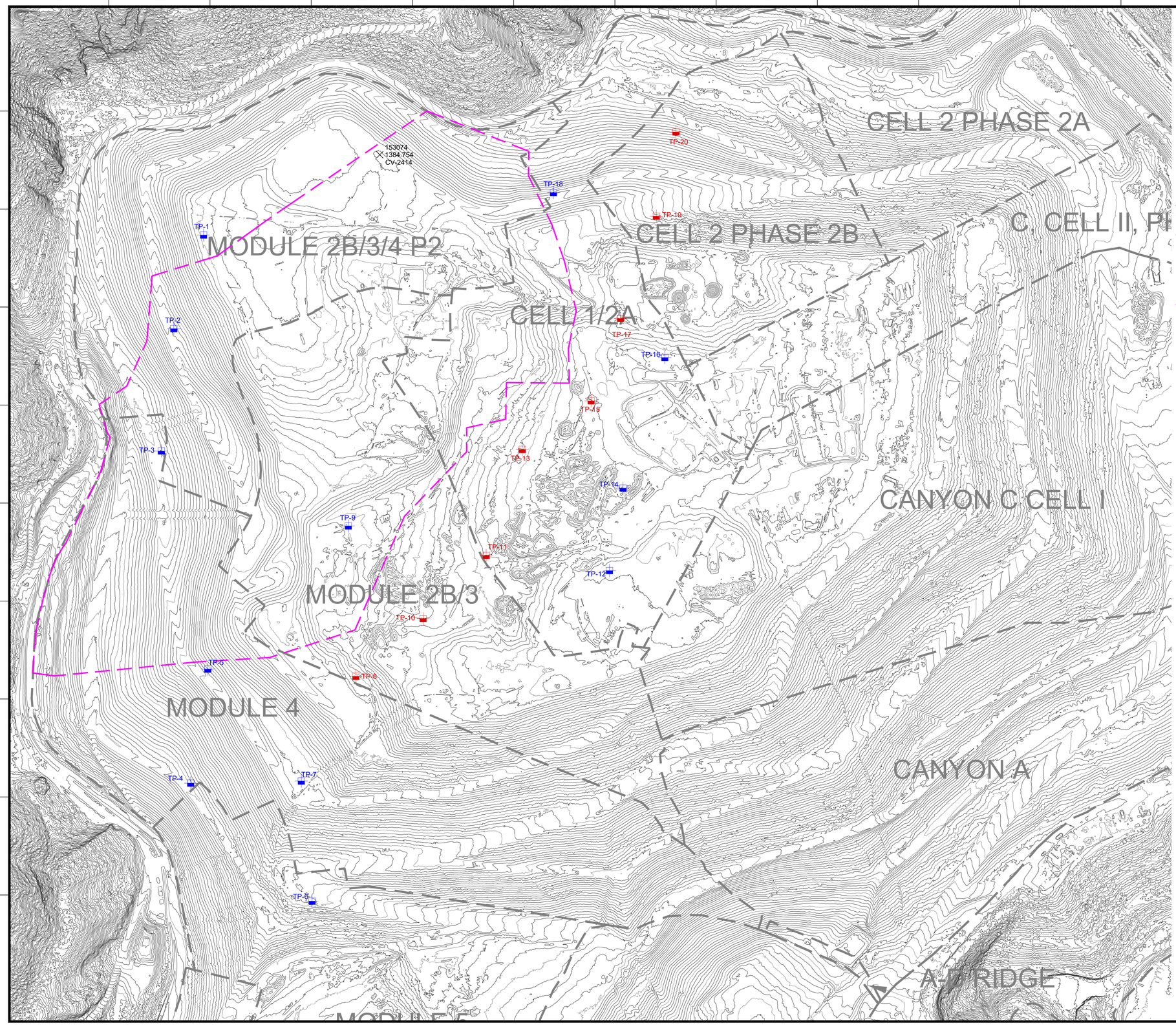
Maximum Vertical Temperature Map from Temperature Probes at Chiquita Landfill



Max Temps - 05:00:45 12-26-2024

Current | 7 Day | 30 Day

Borehole	Max Temp (°F)	@ Depth
TP01	142	100
TP02	148	60
TP03	232	45
TP04	167	30
TP05	150	75
TP06	134	60
TP07	144	100
TP08	2,508	150
TP09	220	125
TP10	143	125
TP11	155	100
TP12	144	125
TP13	159	140
TP14	166	150
TP15	182	100
TP16	138	100
TP17	144	15
TP18	142	45
TP19	163	150
TP20	139	45



N

GRAPHIC SCALE

130 65 0 130 260 390

SCALE: 1"=130'

LEGEND

1150	EXISTING TOPOGRAPHIC CONTOUR
	EXISTING CELL LIMITS (APPROXIMATE)
TP-XX	INSTALLED TEMPERATURE PROBES - STANDALONE
TP-XX	INSTALLED TEMPERATURE PROBES INSTALLED WITHIN WELL CASING
	REACTION AREA BOUNDARY (APPROX) - BASED ON DATA REVIEW

GENERAL DRAWING NOTES:

1. EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN WAS PROVIDED BY PROPELLER. AERIAL PHOTOGRAPHY DATED JUNE 12, 2024.
2. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.

DATE

REVISION

NO.

SHEET TITLE: OVERALL INSTALLED TEMPERATURE PROBE SITE PLAN

PROJECT TITLE: TEMPERATURE PROBE INSTALLATION PROJECT CHIQUITA LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX. (562) 427-0805

PROJ. NO: 01204123.35 | DSN. BY: JH/SRM | DWN. BY: AEK | CHK. BY: WCH | ACAD FILE: ENGINEERS | APP. BY: WCH

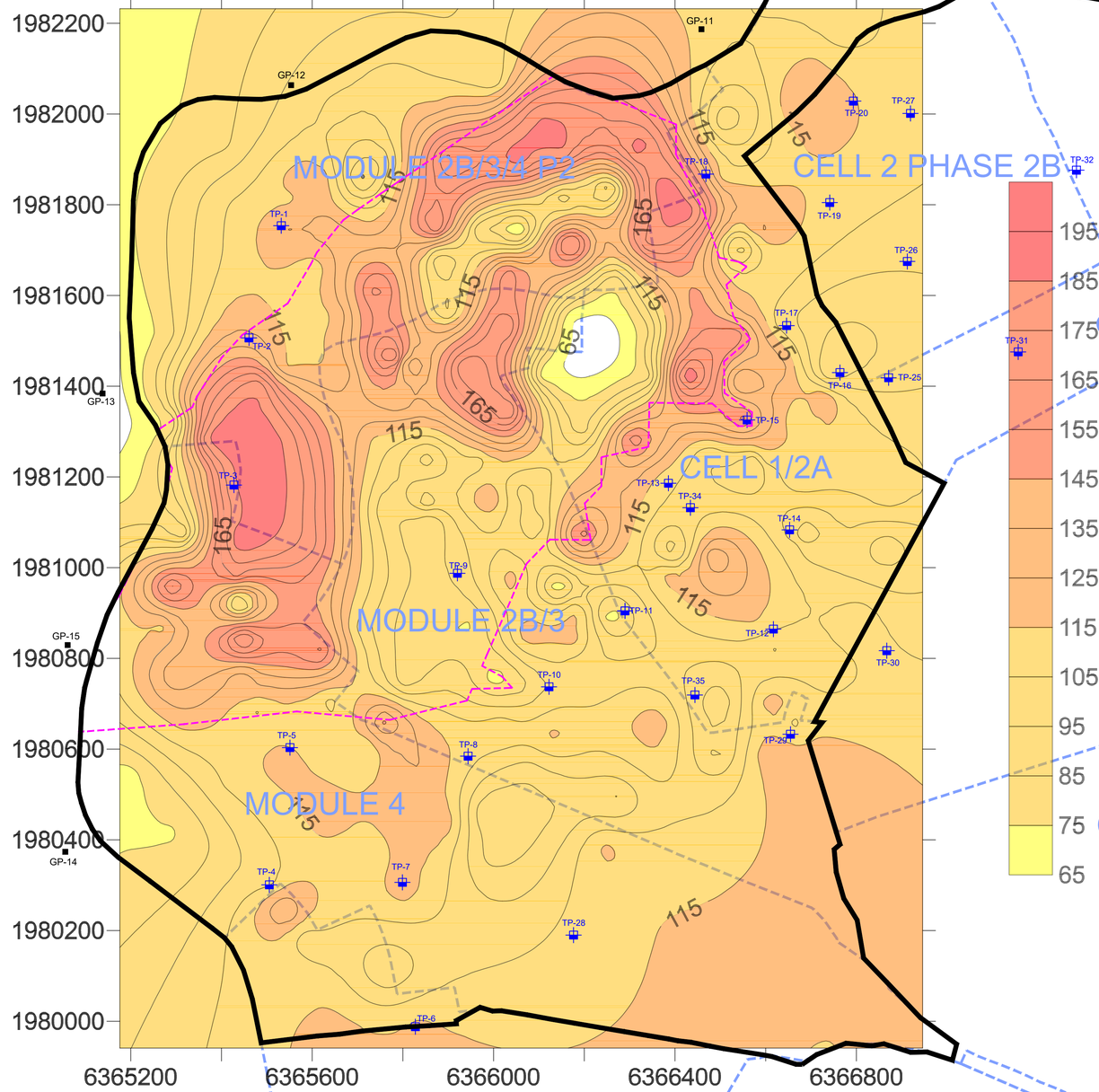
DATE: 06/14/2024

SCALE: AS SHOWN

SHEET: 1

C:\Users\akarram\Desktop\Work\Chiquita\Temp Probes\2024 CCLF Temp.Probe AK_2024-06-14.dwg Jun 14, 2024 - 11:49am By: akarram

ATTACHMENT C



CELL 2 PHASE 2A

C, CELL II, PHASE 1

CANYON C CELL I

A-D RIDGE

CANYON D

GP-P1

N

GRAPHIC SCALE

150 75 0 150 300 450

SCALE: 1"=150'

LEGEND

- EXISTING CELL LIMITS (APPROXIMATE)
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
- REACTION AREA BOUNDARY - CONDITION 9A
- GP-XX EXISTING PERIMETER MIGRATION PROBE
- TP-XX EXISTING TEMPERATURE PROBE

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE | REVISION | NO.

SHEET TITLE: ISOTHERMAL GRADIENT MAP JANUARY, 2025

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

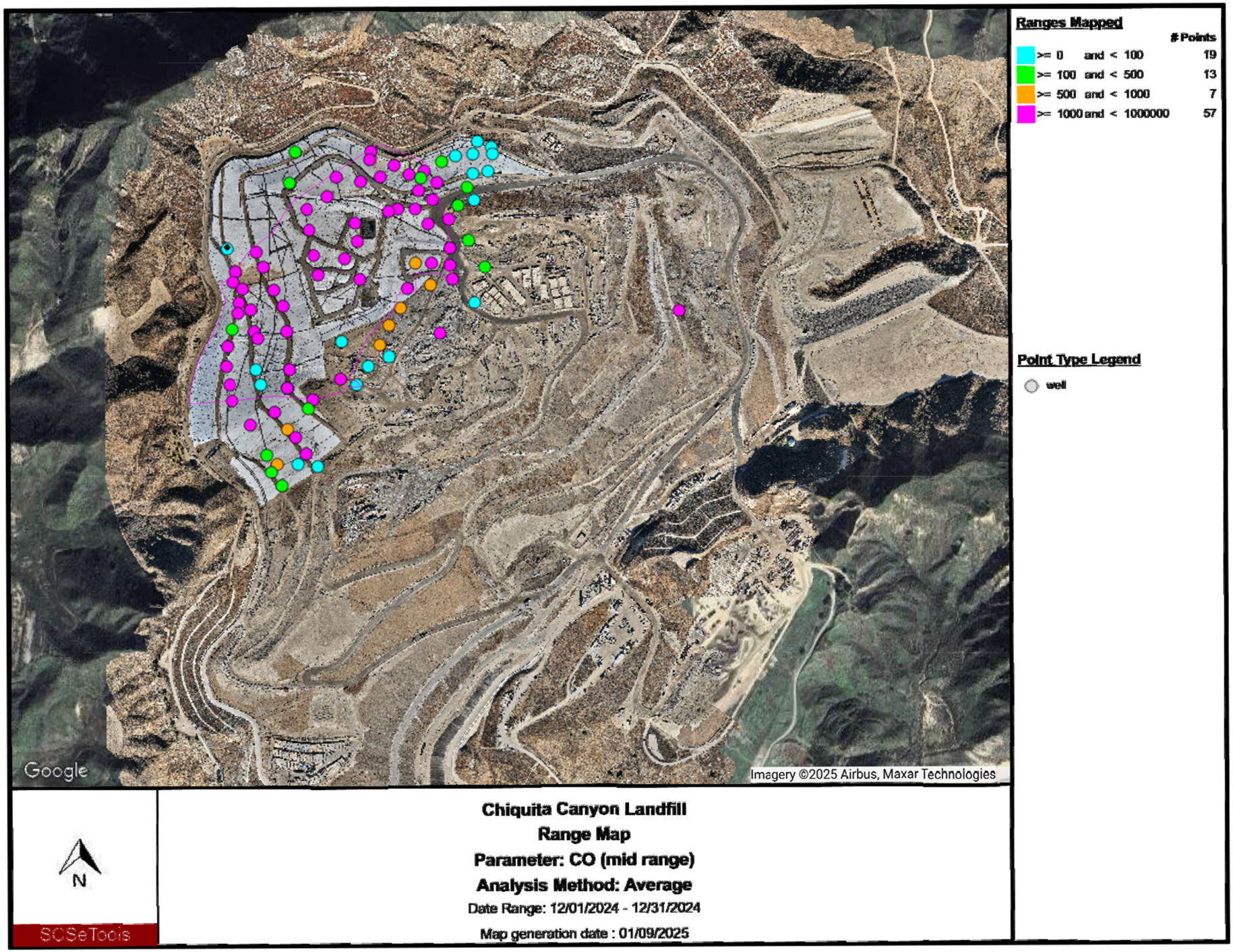
SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX (562) 427-0805

PROJ. NO. 01204123.35 | DSN. BY: - | DWN. BY: SRM | CHK. BY: WCH | ACAD FILE: ENGINEERS | APP. BY: WCH

DATE: 01/10/2025

SCALE: AS SHOWN

SHEET: 1


Ranges Mapped
Points
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>= 100 and < 500 13
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>= 1000 and < 1000000 57
Point Type Legend
well
Google
Imagery ©2025 Airbus, Maxar Technologies
N
SCSeTools
Chiquita Canyon Landfill
Range Map
Parameter: CO (mid range)
Analysis Method: Average
Date Range: 12/01/2024 - 12/31/2024
Map generation date : 01/09/2025

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT F TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

February 10, 2025
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Modified Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of January 2025, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 2/10/25. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2, as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line.

The rationale that serves as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include the following:

- LFG wellhead temperatures in excess of approximately 160 degrees Fahrenheit.
- Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.
- The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.
- Accelerated settlement of the landfill surface, defined as approximately 18 inches or greater within a 60-day period, and cracks in landfill cover. This corresponds to a strain value (i.e., settlement rate) rate of 3 percent per year for areas with a 300-foot waste column depth, which we believe is a reasonable average depth in the subject area of interest.
- First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint (often described as "chemical-like" and distinctly different from typical LFG or landfill working face odors).

- Observations of subsurface waste conditions and characteristics as noted on borehole drilling logs for recently installed new wells and/or probes.

- Subsurface temperatures recorded at the in-situ waste temperature probes during January 2025.

- Subsurface temperatures and pressures noted during the sonic drilling of new waste temperature probes during January 2025.

CONSIDERATIONS FOR POTENTIAL ADJUSTMENTS TO THE ESTIMATED EXTENT OF ETLF CONDITIONS (DASHED MAGENTA LINE)

Near CV-24079 & TP-8

Recall that well CV-24079 and temperature monitoring probe no. 8 ("TP-8") were temporarily decommissioned on October 3, 2024 to facilitate the construction activities associated with the western slope toe drain and capping project. Upon completion of the construction activities, well CV-24079 and Probe TP-8 were reactivated on January 10, 2025. Upon recommissioning, the initial temperatures recorded at the deeper intervals within TP-8 were significantly greater than previous data recorded prior to October 3rd. Similarly, the initial LFG temperatures recorded at the wellhead in CV-24079 were substantially greater than LFG temperatures recorded prior to October 3rd. Also, the methane content during the first three weeks fluctuated but remained suppressed below 20 percent. However, during the first week of February, these three parameters (in-situ waste temperature, gas temperature, and methane content) all exhibited a definitive return to more typical conditions associated with normal methanogenesis, with substantial temperature decreases measured in the probe and wellhead, and methane concentration increasing to 35 percent. Furthermore, the operational data recorded at adjacent wells CV-24078 and CV-24080 does not exhibit evidence of elevated temperature conditions. Accordingly, the Reaction Committee does not believe that any adjustment to the estimated extent of ETLF conditions in this discrete location is warranted at this time, since the data recorded during this relatively short period is variable and does not appear to consistently signal a potential expansion of the subsurface reaction.

CONCLUSION

The Reaction Committee reviewed the temperature measurements recorded during January 2025 by the in-situ temperature monitoring probes. As of January 2025, four (4) of the twenty (20) probes (TP-2, 3, 9, and 15) are located within the estimated extent of ETLF conditions (dashed magenta line), and twelve (12) probes are positioned adjacent to (within 200 feet) of this boundary. It is the Committee's opinion that the temperatures recorded by the 12 probes outside of the boundary during January 2025 are not indicative of a subsurface reaction and do not substantiate a decision to adjust the boundary of the reaction area at this time. However, we continue to observe the measurements being recorded by TP-8 and the corresponding co-located well CV-24079 to evaluate whether a clear trend in temperature (either increasing or decreasing) develops over the next several weeks.

The Reaction Committee also evaluated the concentration of hydrogen in landfill gas (LFG) during January 2025. Recall that certain wells positioned to the south and east of the reaction area

boundary (where dewatering pumping was reactivated) have periodically demonstrated some increased hydrogen content in the LFG during the Reaction Committee's review of the data in previous months, which similarly was the case for the January data. The Reaction Committee noted in its review of the data that these wells did not exhibit elevated temperatures, such that there was no evidence of the increased heat that is typical with ETLF conditions present at these wells. The Committee suspects this increased hydrogen content may be attributable to substantial dewatering being accomplished throughout the Reaction Area and may be associated with gas movement from within the reaction area by existing horizontal collectors in close proximity. Thus, the presence of elevated hydrogen in these isolated locations does not suggest that ETLF conditions are expanding south and east of the delineated boundary. Accordingly, the Reaction Committee does not believe an adjustment to the boundary of the reaction area is merited at this time.

As presented on the Drawing included as **Attachment A**, the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Because the ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell, the Reaction Committee finds no basis to modify the Reaction Area boundary as prescribed in Condition 9a at this time.

There was no dissenting opinion among the Reaction Committee members regarding this monthly determination. Supporting data is presented on the Drawing included as **Attachment A.** The maximum temperature measurements recorded at the 20 in-situ waste temperature monitoring probes during January are presented in **Attachment B** in graphical format. The landfill gas wellhead temperatures recorded at the extraction wells in the vicinity of the data-driven reaction area boundary are reflected on the isothermal gradient range map present as **Attachment C**. The carbon monoxide (CO) concentrations measured at the landfill gas wellheads are depicted on the range map presented as **Attachment D**. The electronic database and recordkeeping platform enables these measurements to be downloaded into a tabular spreadsheet format, which can be submitted to the South Coast Air Quality Management District under separate cover, if requested.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

RED/PSS

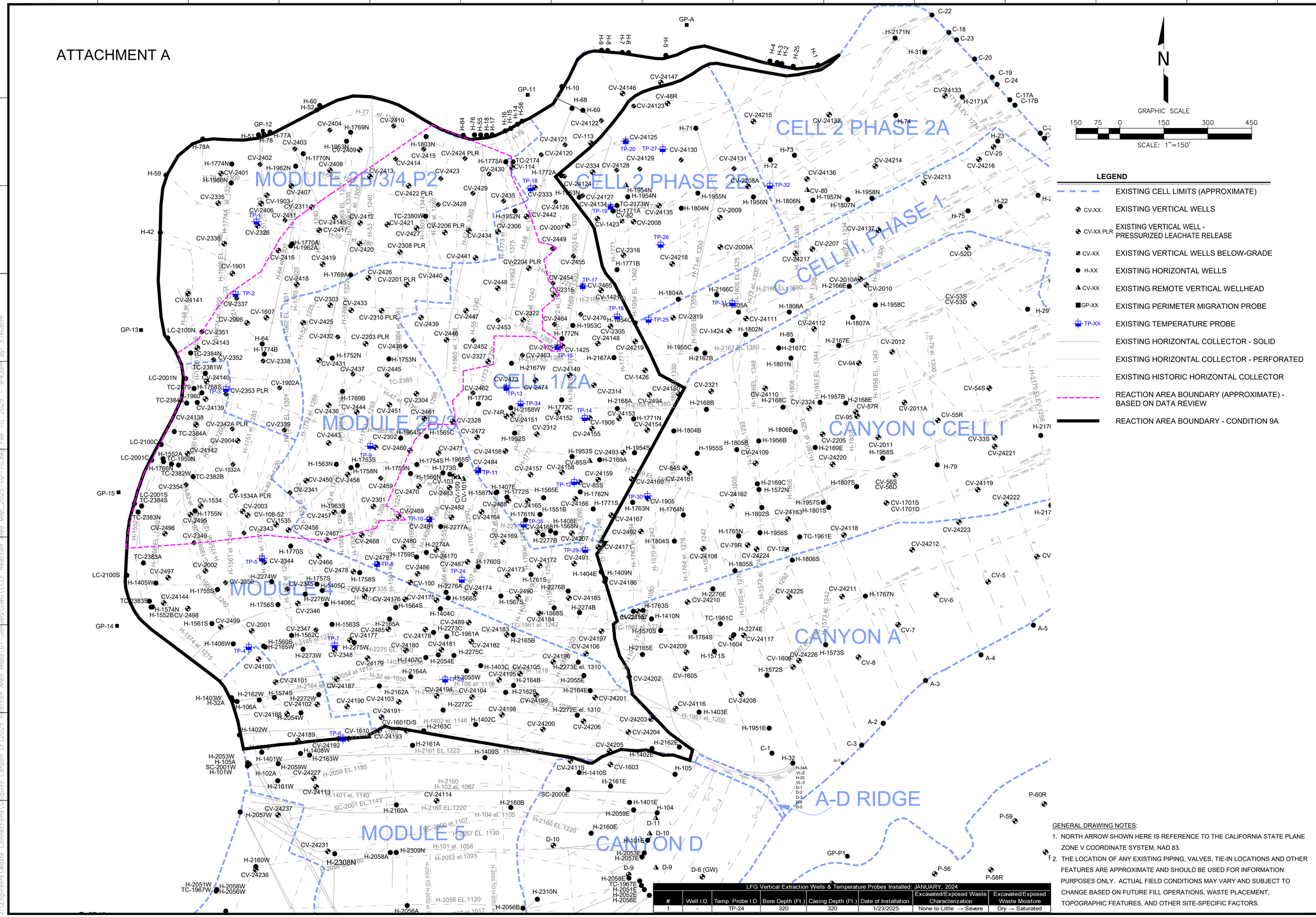
cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Richard Pleus, PhD, Intertox

Srividhya Viswanathan, PE, SCS Engineers

Enclosures:

Attachment A – Reaction Area Map
Attachment B – In-Situ Waste Temperature Monitoring Probe Data
Attachment C – Isothermal Gradient Range Map
Attachment D – Wellhead Carbon Monoxide Range Map

ATTACHMENT A



LEGEND

- EXISTING CELL LIMITS (APPROXIMATE)
- CV-XX EXISTING VERTICAL WELLS
- CV-XX PLR EXISTING VERTICAL WELL - PRESSURIZED LEACHATE RELEASE
- CV-XX EXISTING VERTICAL WELLS BELOW-GRADE
- H-XX EXISTING HORIZONTAL WELLS
- CV-XX EXISTING REMOTE VERTICAL WELLHEAD
- GP-XX EXISTING PERIMETER MIGRATION PROBE
- TP-XX EXISTING TEMPERATURE PROBE
- EXISTING HORIZONTAL COLLECTOR - SOLID
- EXISTING HORIZONTAL COLLECTOR - PERFORATED
- EXISTING HISTORIC HORIZONTAL COLLECTOR
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
- REACTION AREA BOUNDARY - CONDITION 9A

LFG Vertical Extraction Wells & Temperature Probes Installed: JANUARY, 2024

#	Well I.D	Temp. Probe I.D.	Bore Depth (Ft.)	Casing Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Characterization	Excavated/Exposed Waste Moisture
1	-	TP-24	320	320	1/23/2025	None to Little → Severe	Dry → Saturated

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE | REVISION | NO.

SHEET TITLE: REACTION AREA MAP JANUARY, 2025

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX: (562) 427-0805

PROJ. NO. 01204123.41 | DSN. BY: - | DWN. BY: SRM | CHK. BY: WCH | ACAD FILE: | APP. BY: WCH

DATE: 02/10/2025

SCALE: AS SHOWN

SHEET: 1

ATTACHMENT B

Solid Waste Borehole Maximum Temperature Profiles Over 6 Weeks

for 12/19/2024 to 1/29/2025

From January 23, 2025, through January 29, 2025, there was two recorded temperature increase and four recorded decreases that triggered the notification limits set forth in the LEA's October 4, 2024 letter. Additionally, as noted previously and discussed further below, TP-08 was brought back online earlier this month and has registered elevated temperatures.

Chiquita provides the following updates:

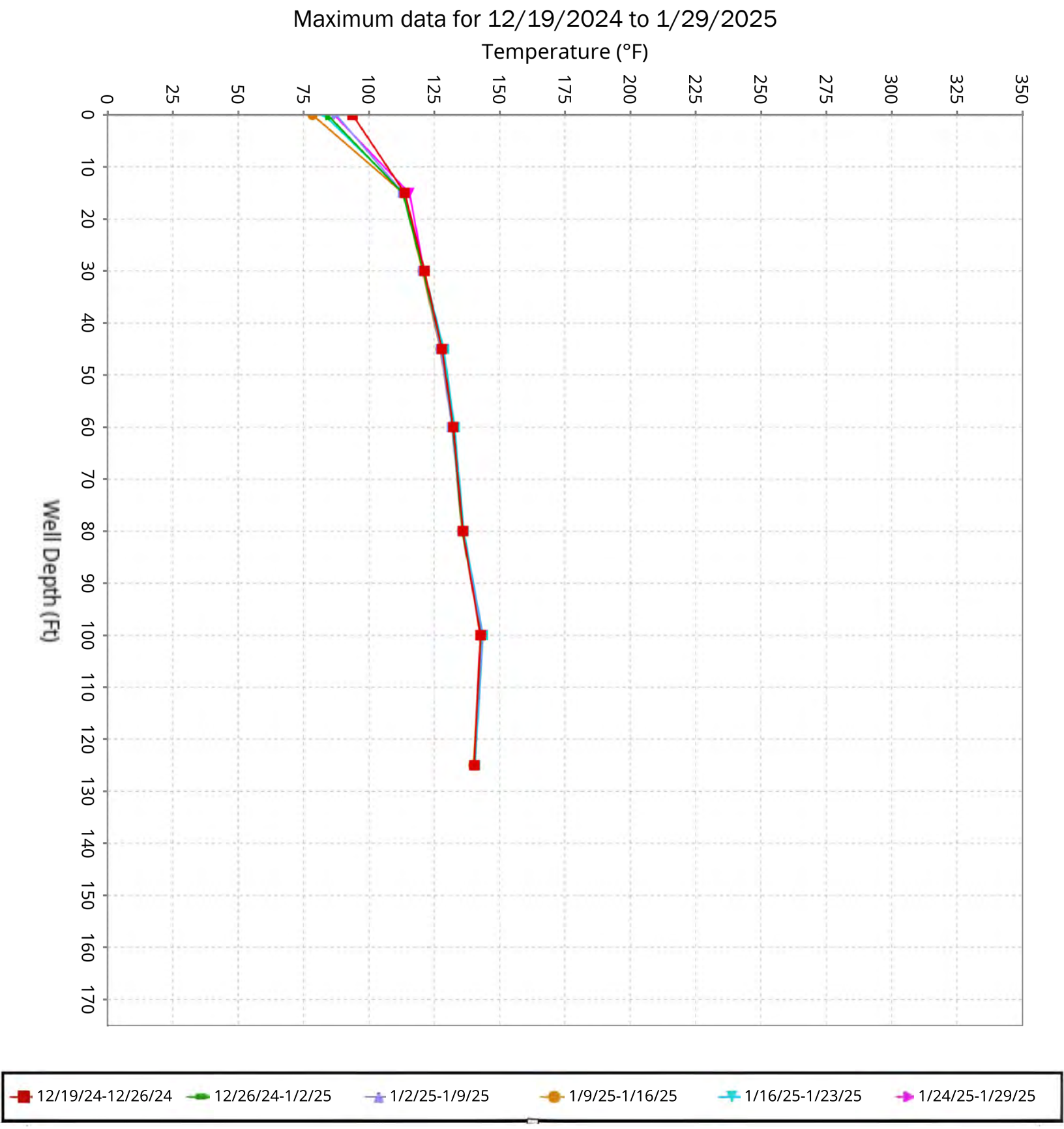
- TP-06
  - 45-foot thermocouple showed a decrease in maximum temperature of 10°F from 138°F to 128°F from January 19th to January 25th, an increase in maximum temperature of 11°F from 128°F to 139°F from January 25th to January 28th, and then a decrease in maximum temperature of 8°F from 139°F to 131°F from January 28th to January 29th.
  - 60-foot thermocouple showed a decrease in maximum temperature of 14°F from 147°F to 133°F from January 18th to January 26th, an increase in maximum temperature of 15°F from 133°F to 148°F from January 26th to January 28th, and then a decrease in maximum temperature of 12°F from 148°F to 136°F from January 28th to January 29th.
- TP-08
  - TP-08 was taken offline on October 3rd for filling operations related to the west toe excavation.
  - TP-08 was brought back online on January 10th. The gas and liquid collection infrastructure was also offline in the same area, and the nearby gas wells and pumps were also brought back online on January 10th. Initial temperature readings of TP-08 were higher than the historical average before TP-08 was taken offline.
  - As noted in last week's update, filling operations occurred over the prior several months, in which time Chiquita noticed other areas of the reaction area continuing to experience accelerated settlement. It is likely that the accelerated settlement pushed leachate into the TP-08/CV-2479 borehole, which because it was offline, did not allow for the removal of this leachate and landfill gas. With the TMP and well back online, gas and liquids extraction has resumed.
  - As also noted in last week's update, drilling activities for TP-24, geographically nearby, achieved a depth of 297 feet without encountering significantly elevated temperatures, further supporting that the increased temperature readings are due to the presence of localized leachate accumulation limited to the TP-08 borehole.
  - A continued reduction in temperatures has been recorded in the 15-foot, 30-foot, 45-foot, 100-foot, 125-foot, and 150-foot thermocouples since the previous week:
    - 15-foot thermocouple showed a decrease of 7°F degrees from 177°F to 170°F from January 16th to January 29th.
    - 30-foot thermocouple showed a decrease of 9°F degrees from 190°F to 181°F from January 10th to January 29th.
    - 45-foot thermocouple showed a decrease of 7°F degrees from 192°F to 185°F from January 10th to January 29th.
    - 100-foot thermocouple showed a decrease of 24°F degrees from 215°F to 191°F from January 10th to January 29th.
    - 125-foot thermocouple showed a decrease of 29°F degrees from 232°F to 203°F from January 10th to January 29th.
    - 150-foot thermocouple showed a decrease of 12°F degrees from 230°F to 218°F from January 10th to January 29th.
- TP-15
  - 30-foot thermocouple remained consistent with previous temperature decreases.

SCS ENGINEERS

07224053.00 | January 30, 2025

274 Granite Run Drive
Lancaster, PA 17601
717-550-6330

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-1



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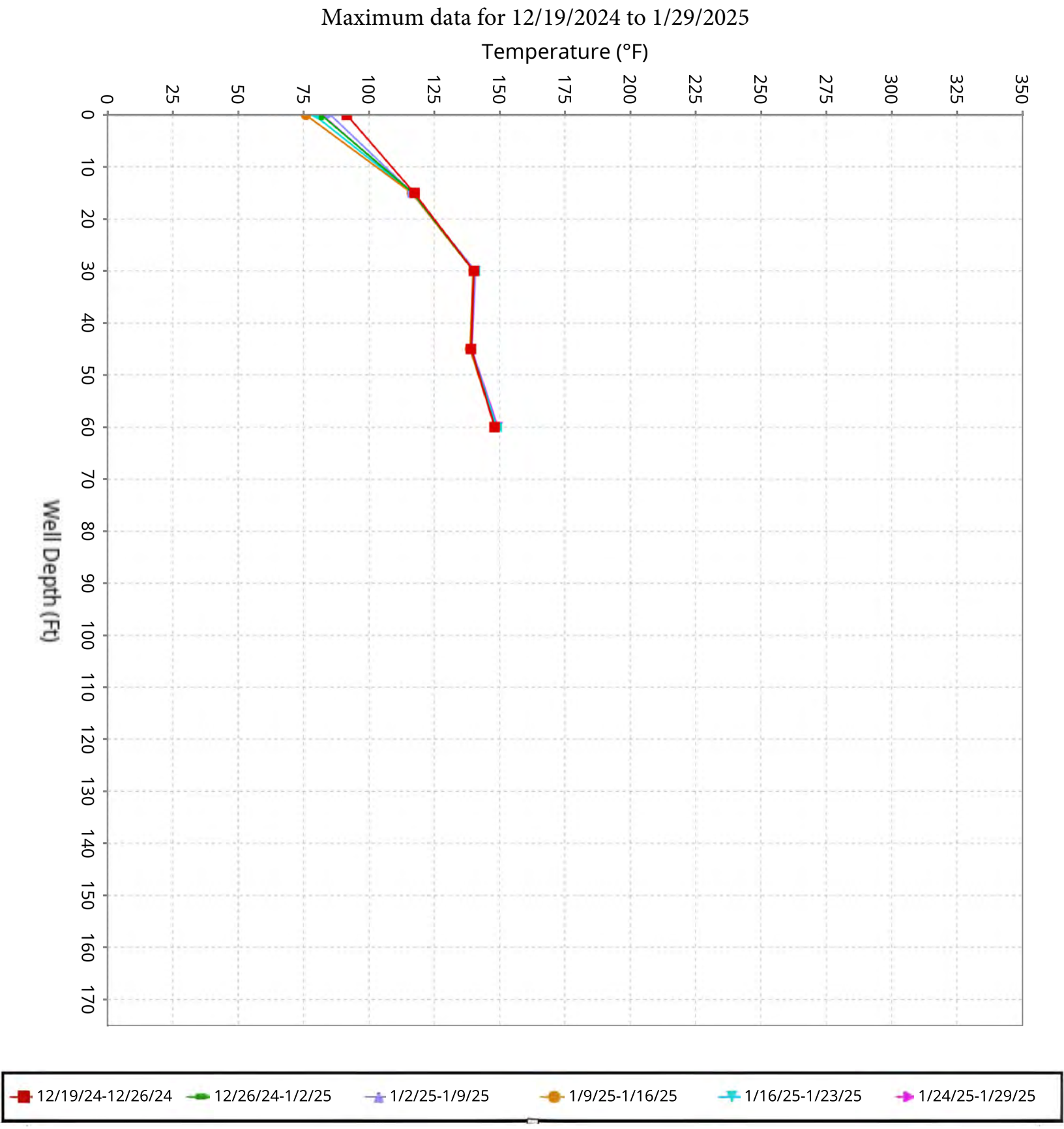
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-2



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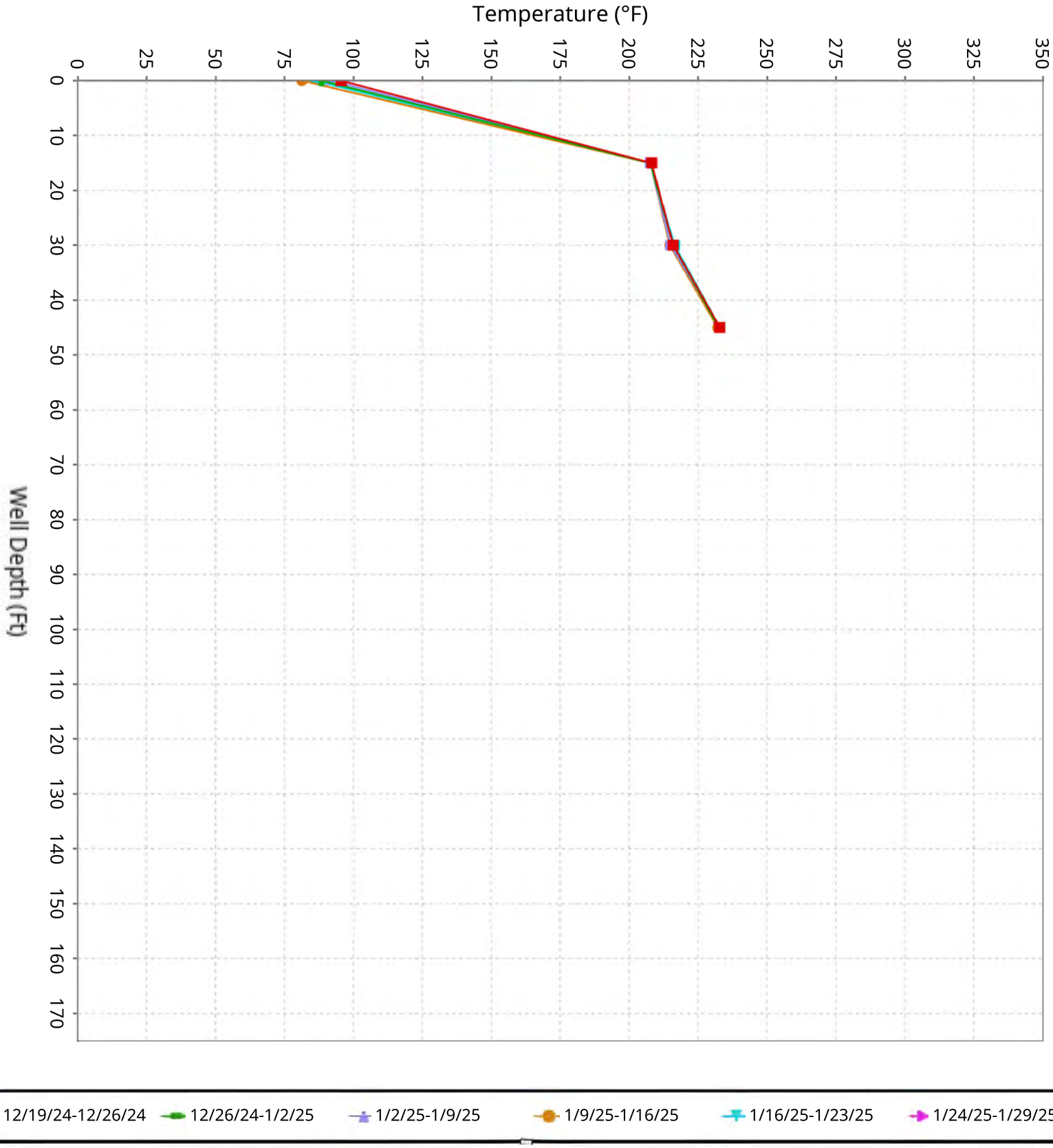
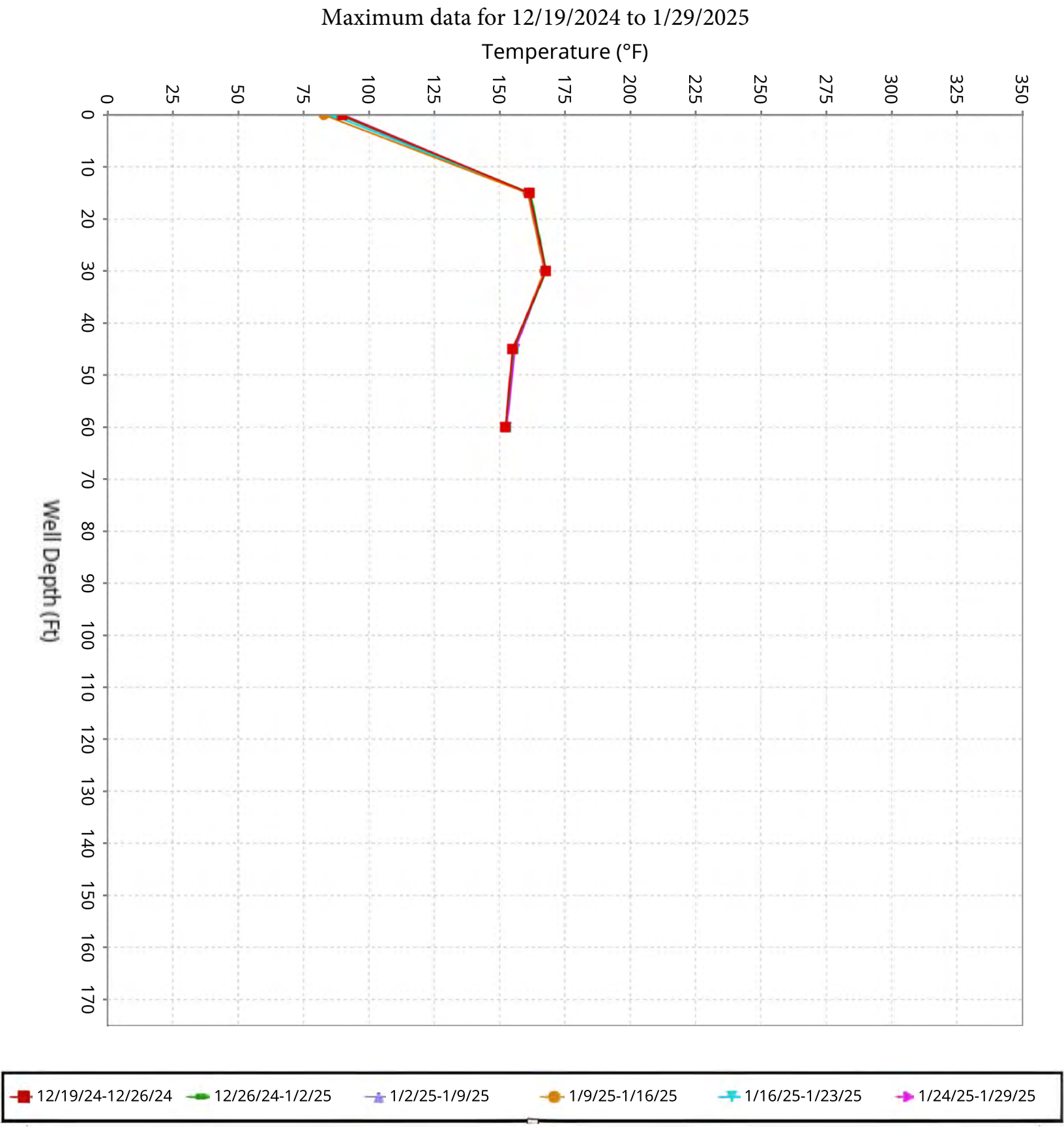
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-3

Maximum data for 12/19/2024 to 1/29/2025



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-4



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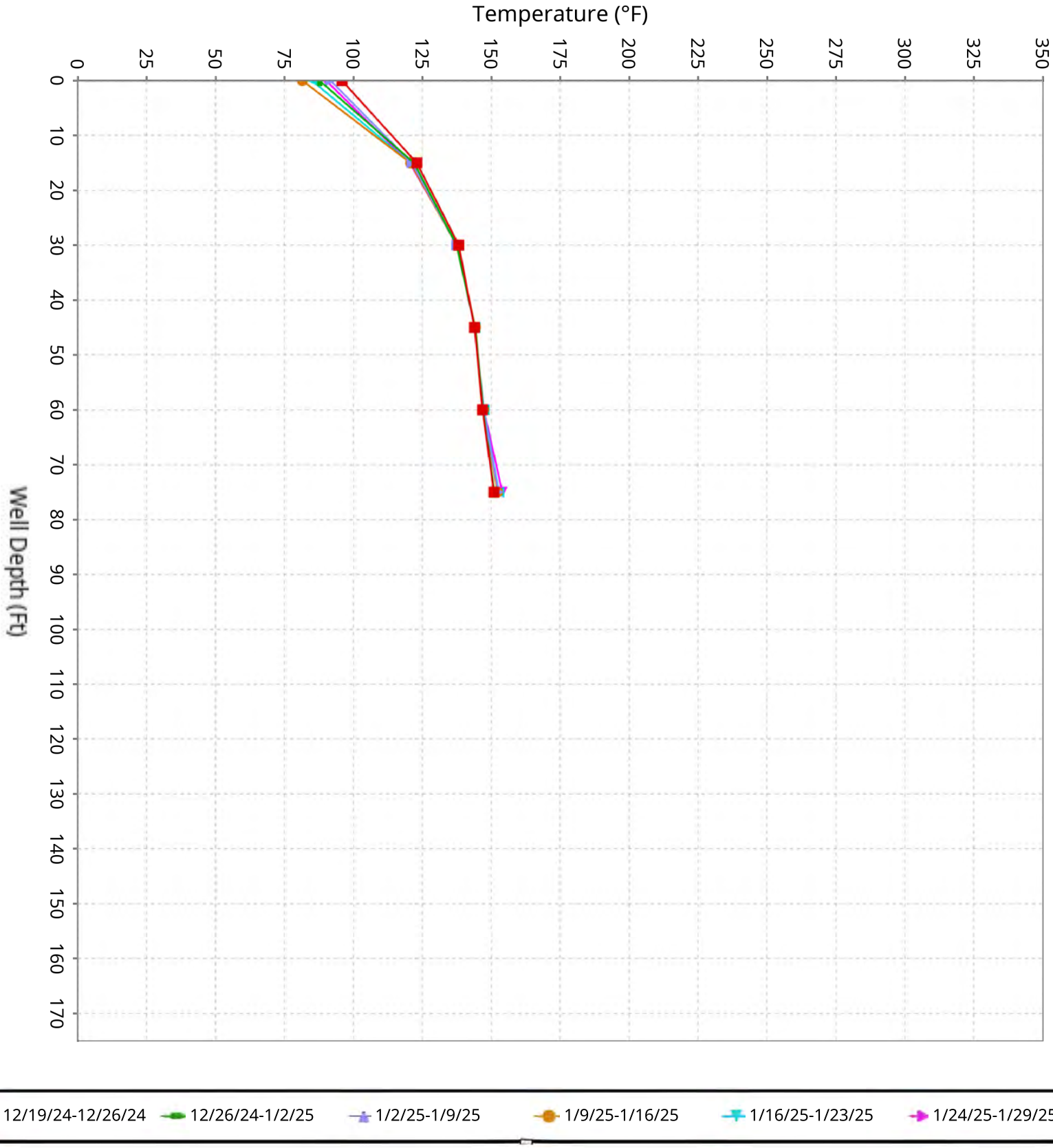
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-5

Maximum data for 12/19/2024 to 1/29/2025



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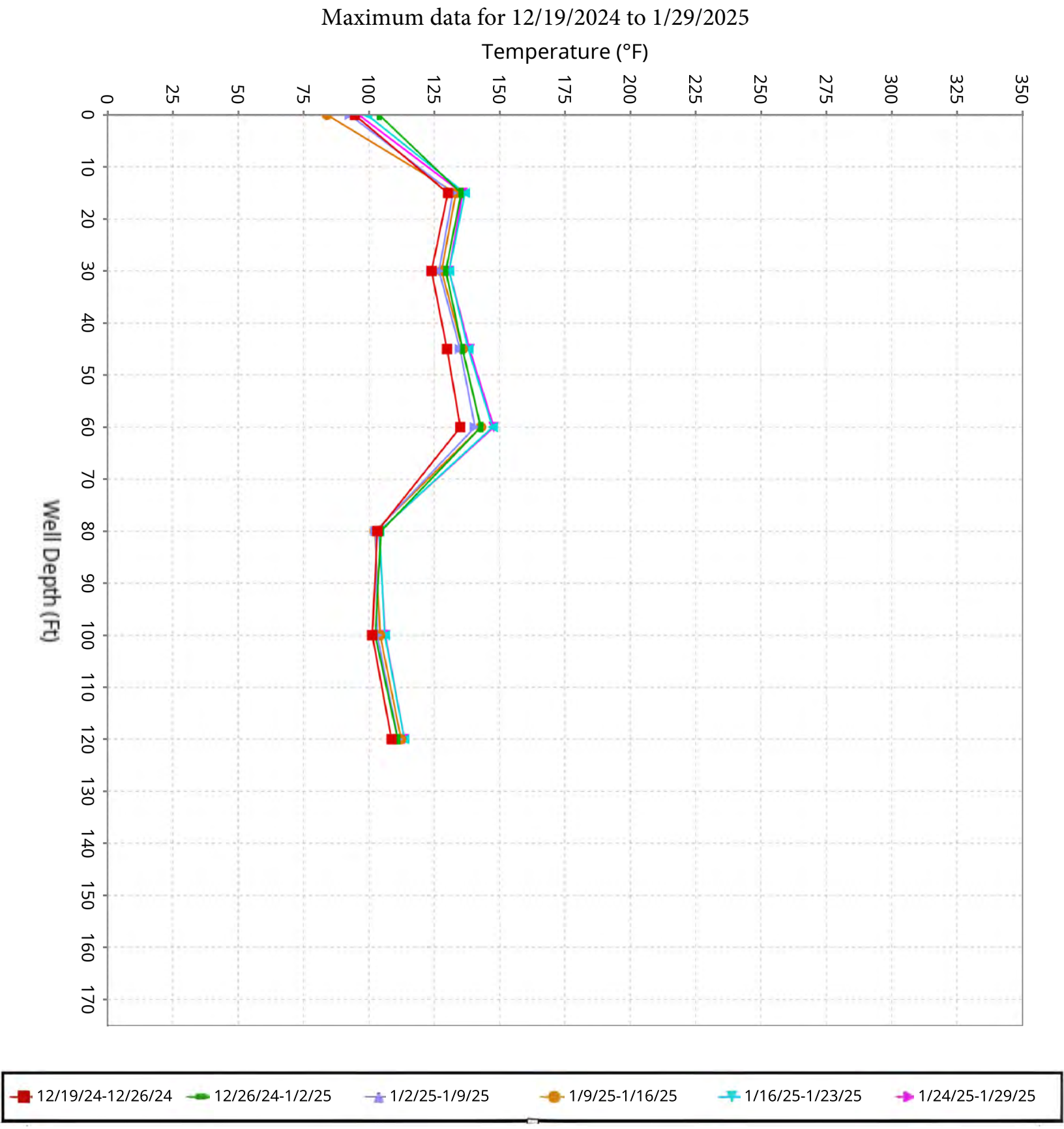
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-6



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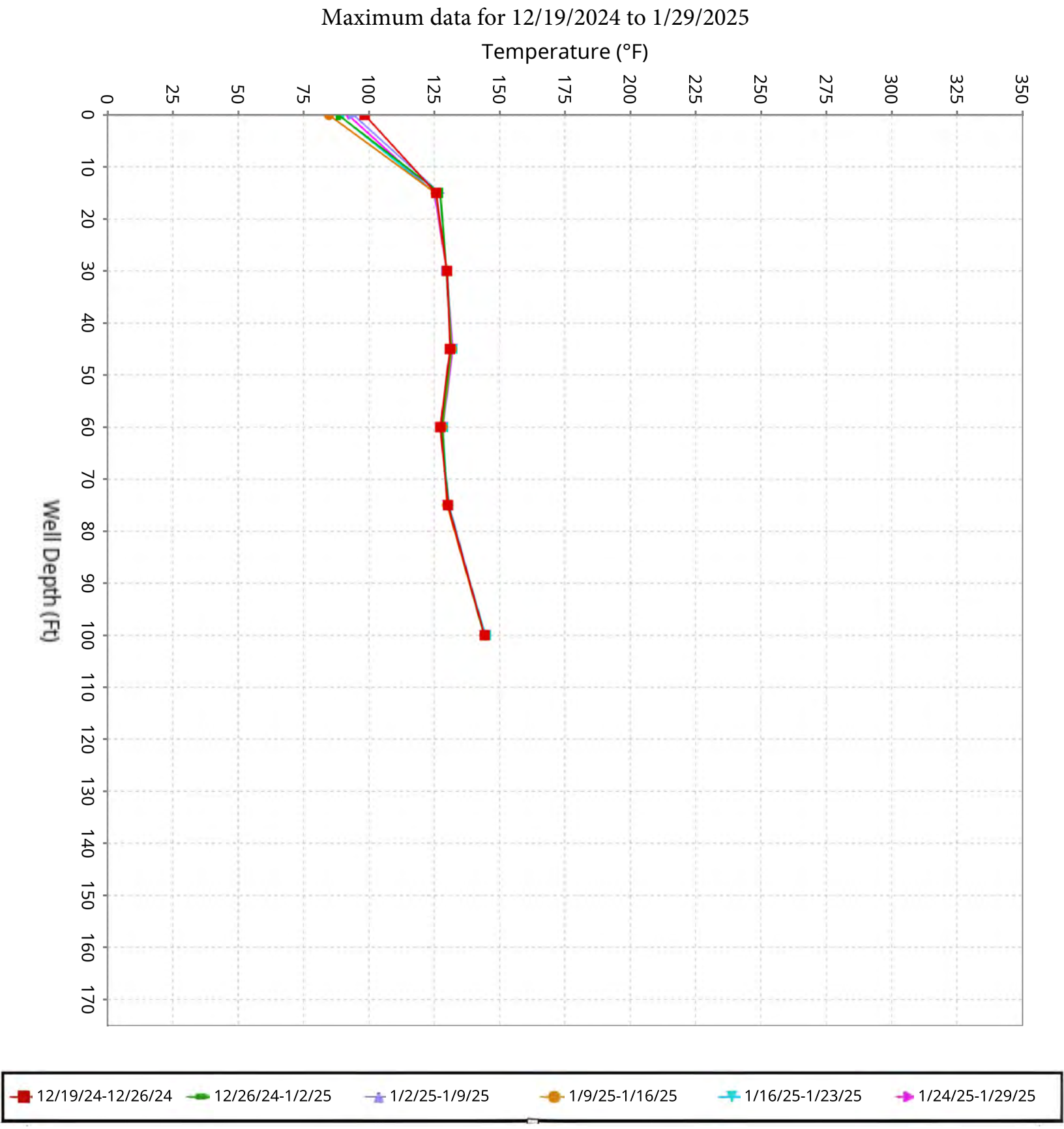
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-7



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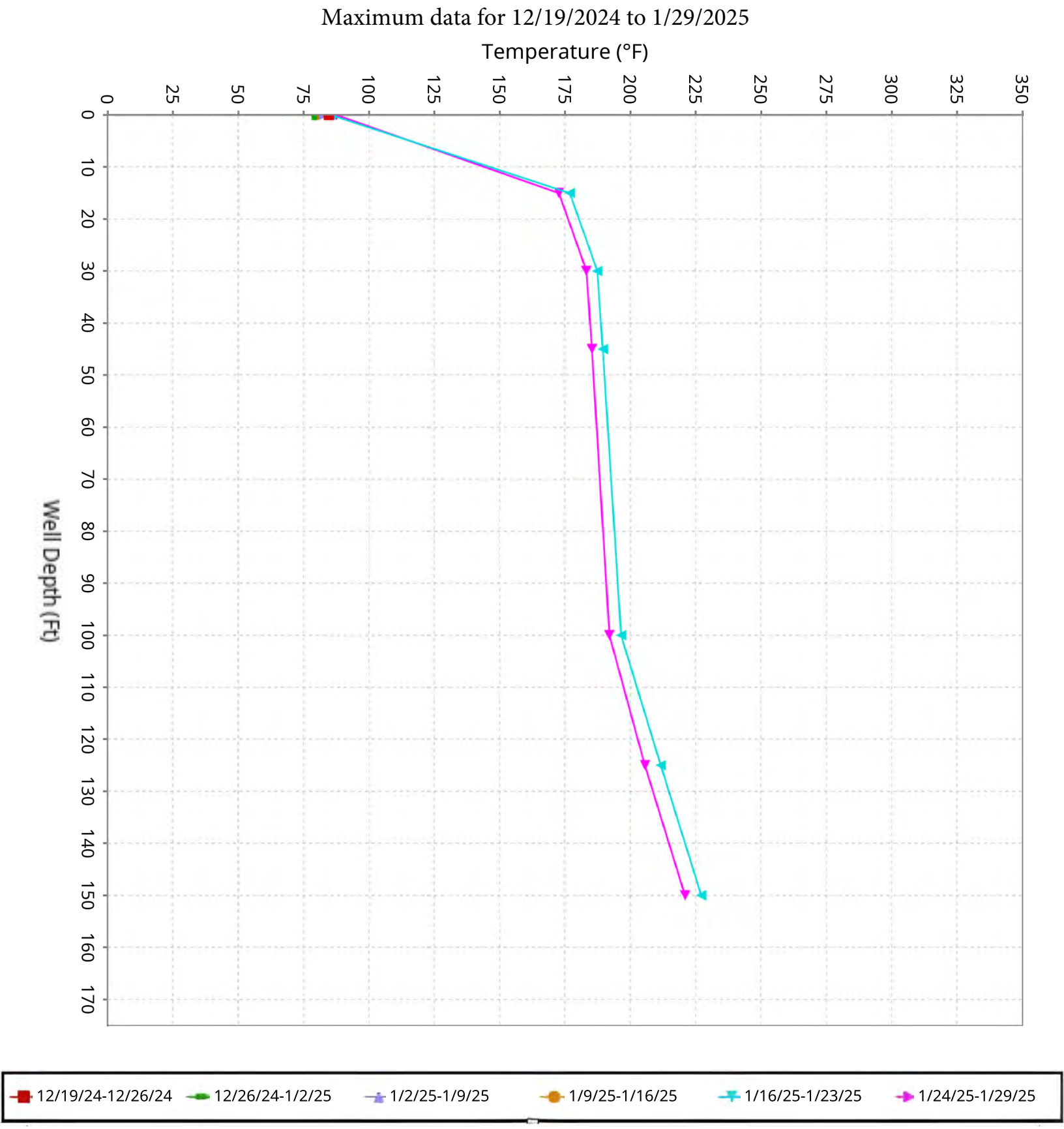
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-8



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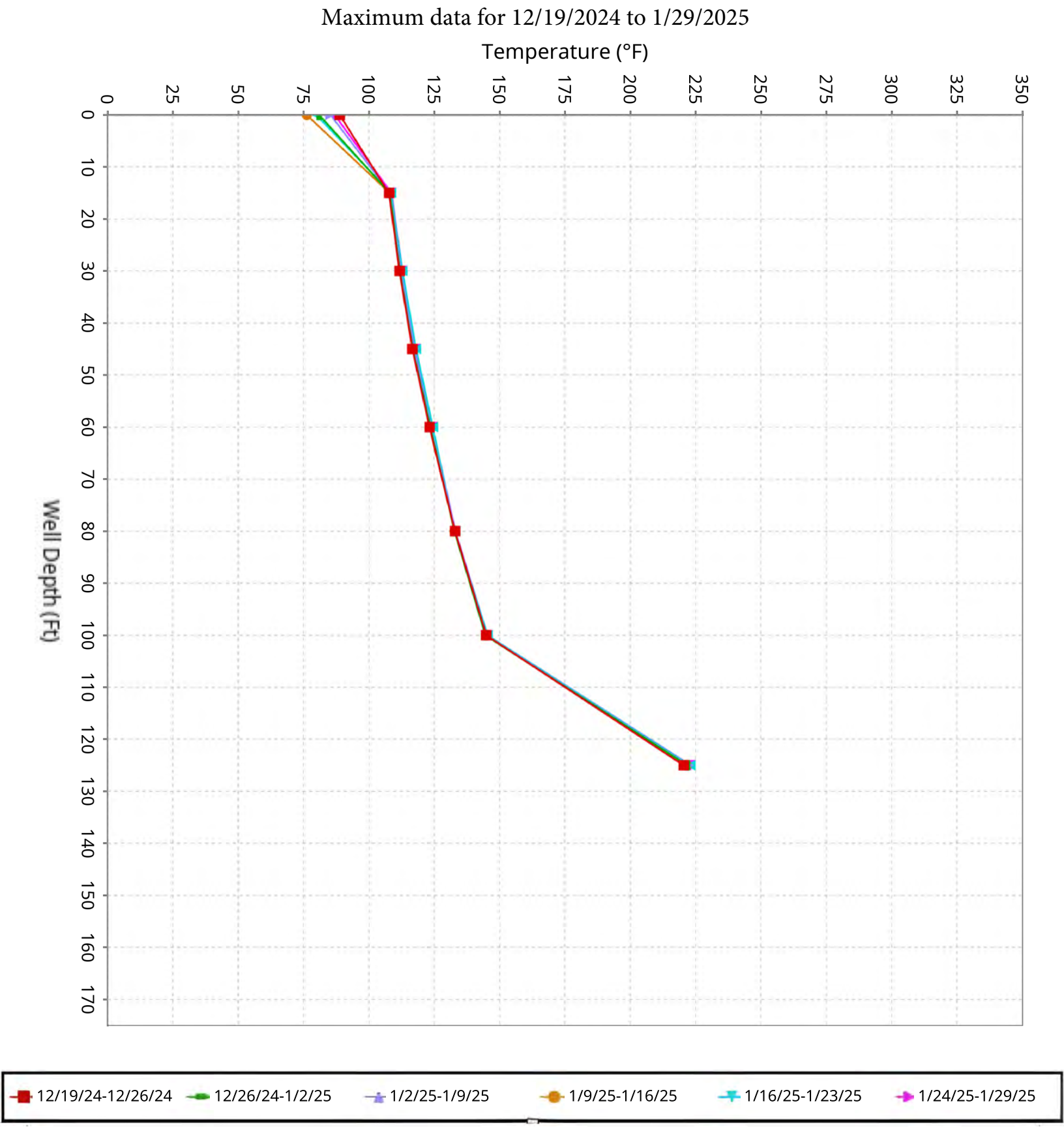
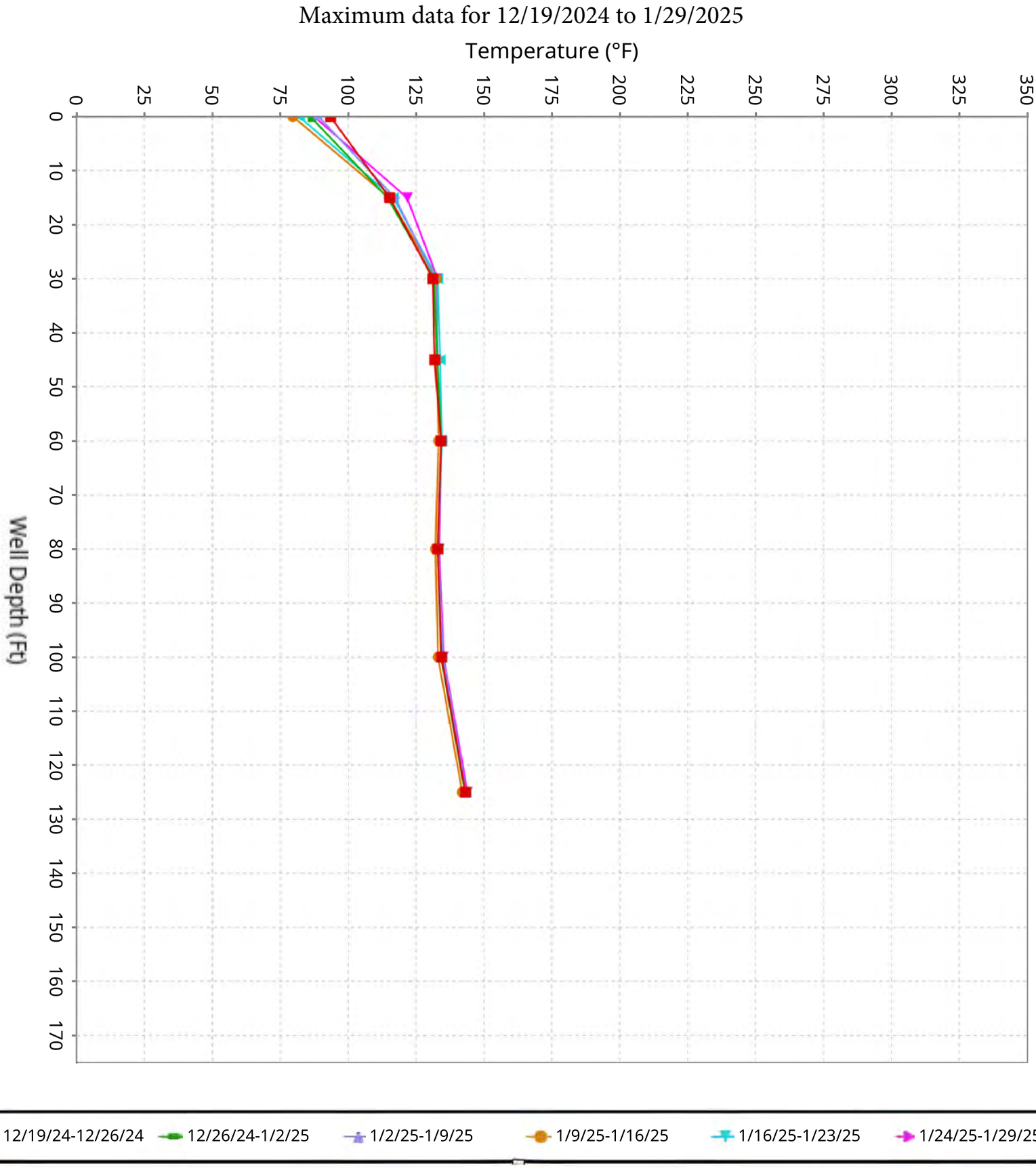
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-9



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-10



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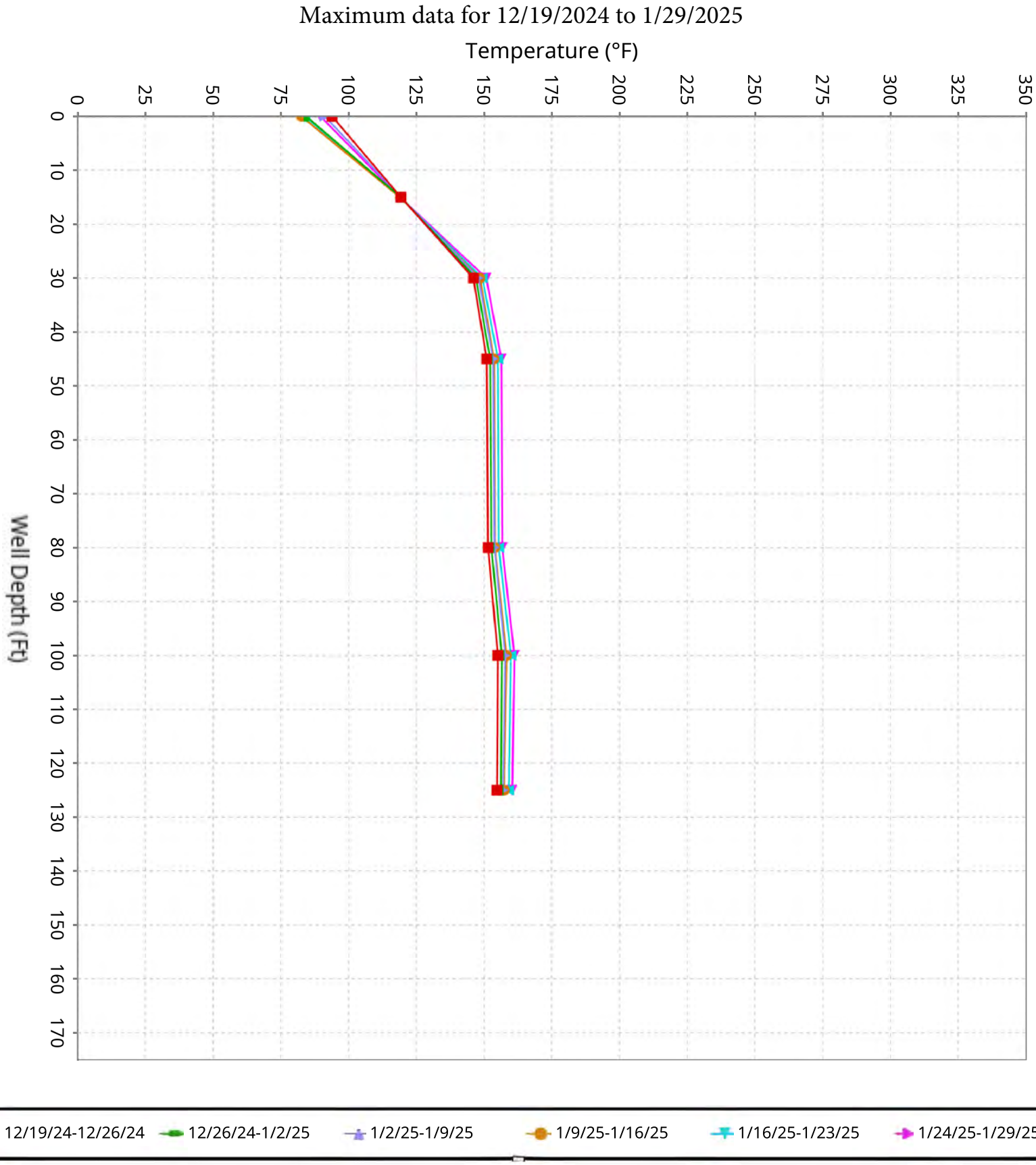
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-11



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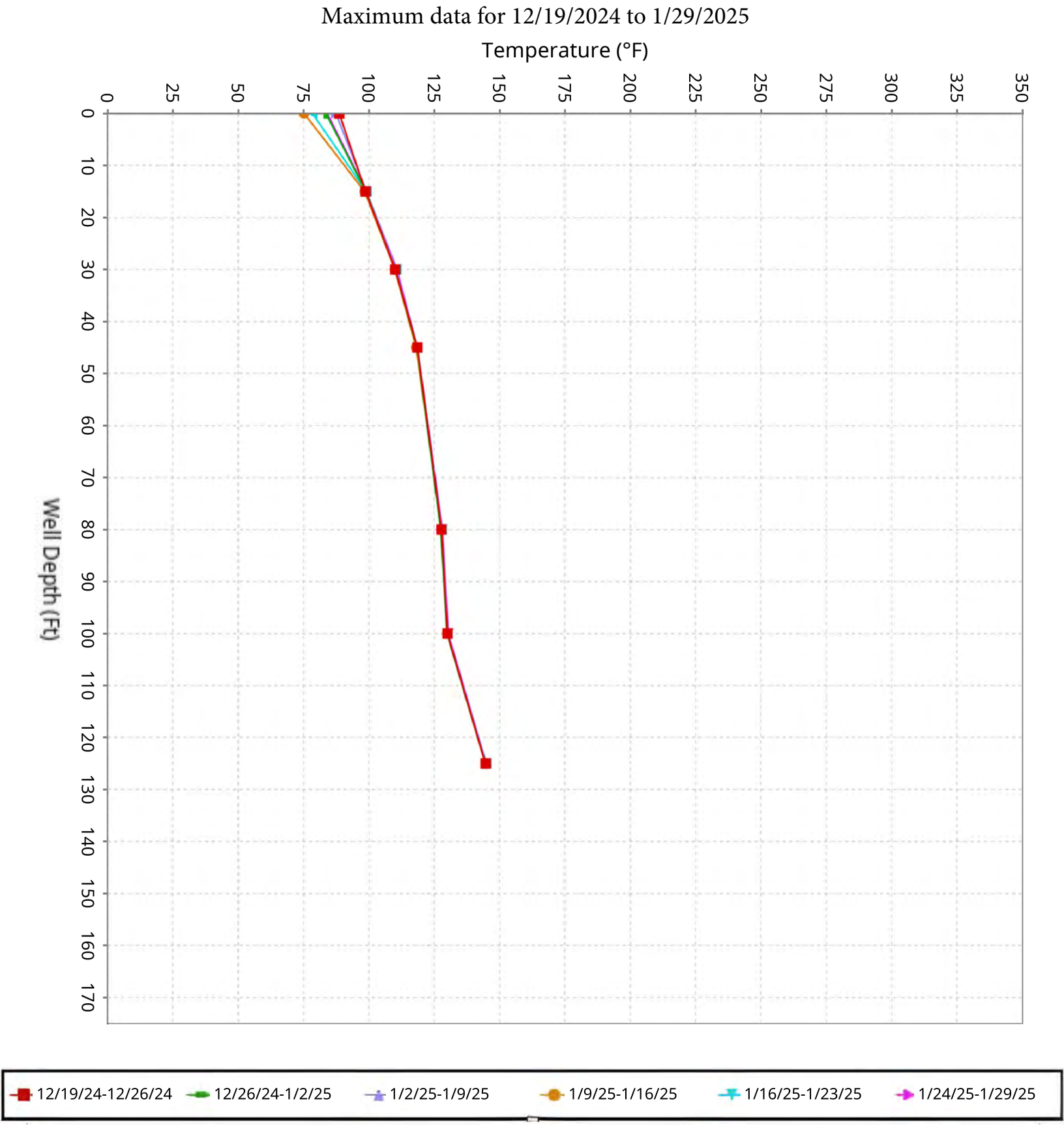
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-12



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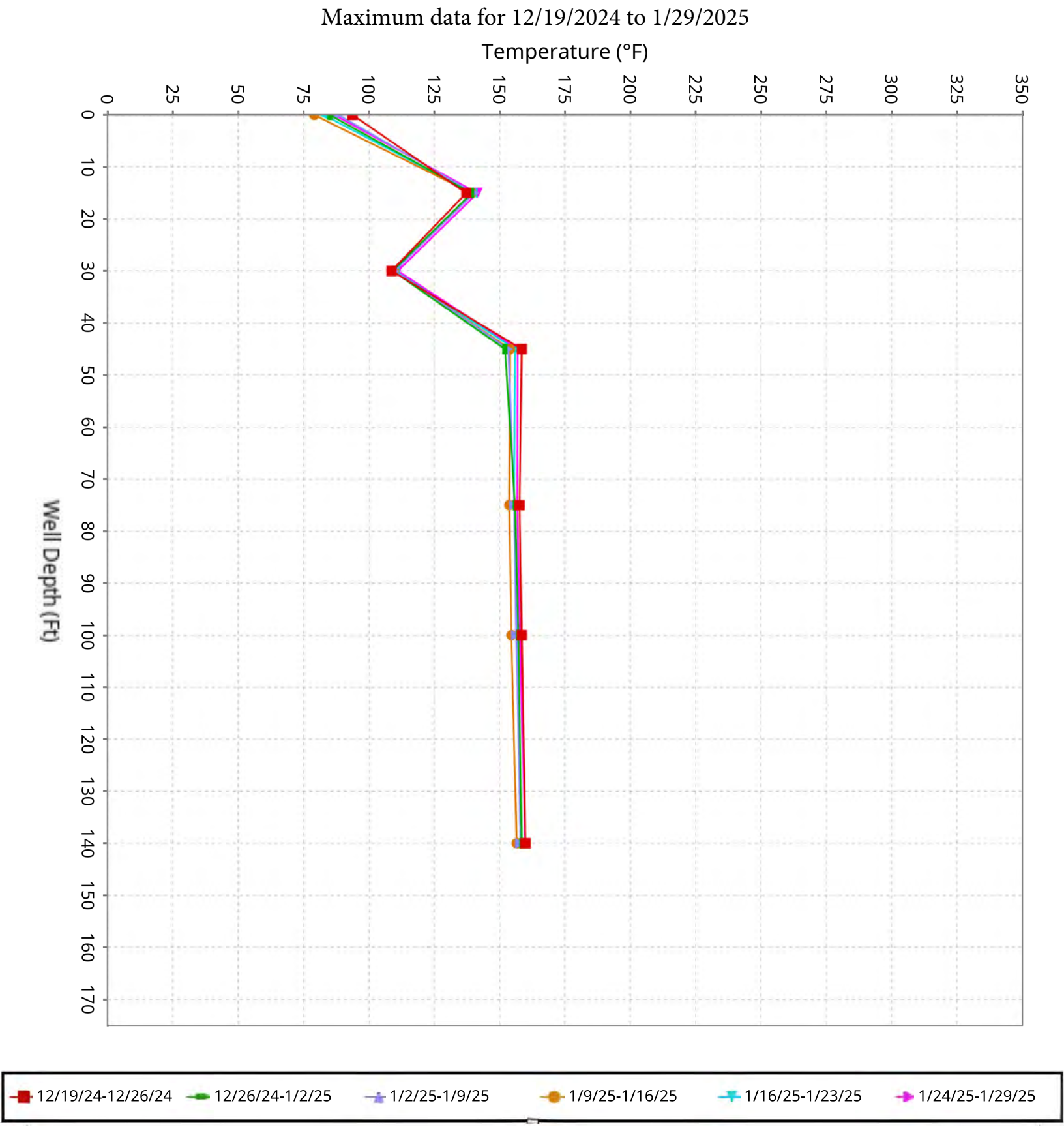
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-13



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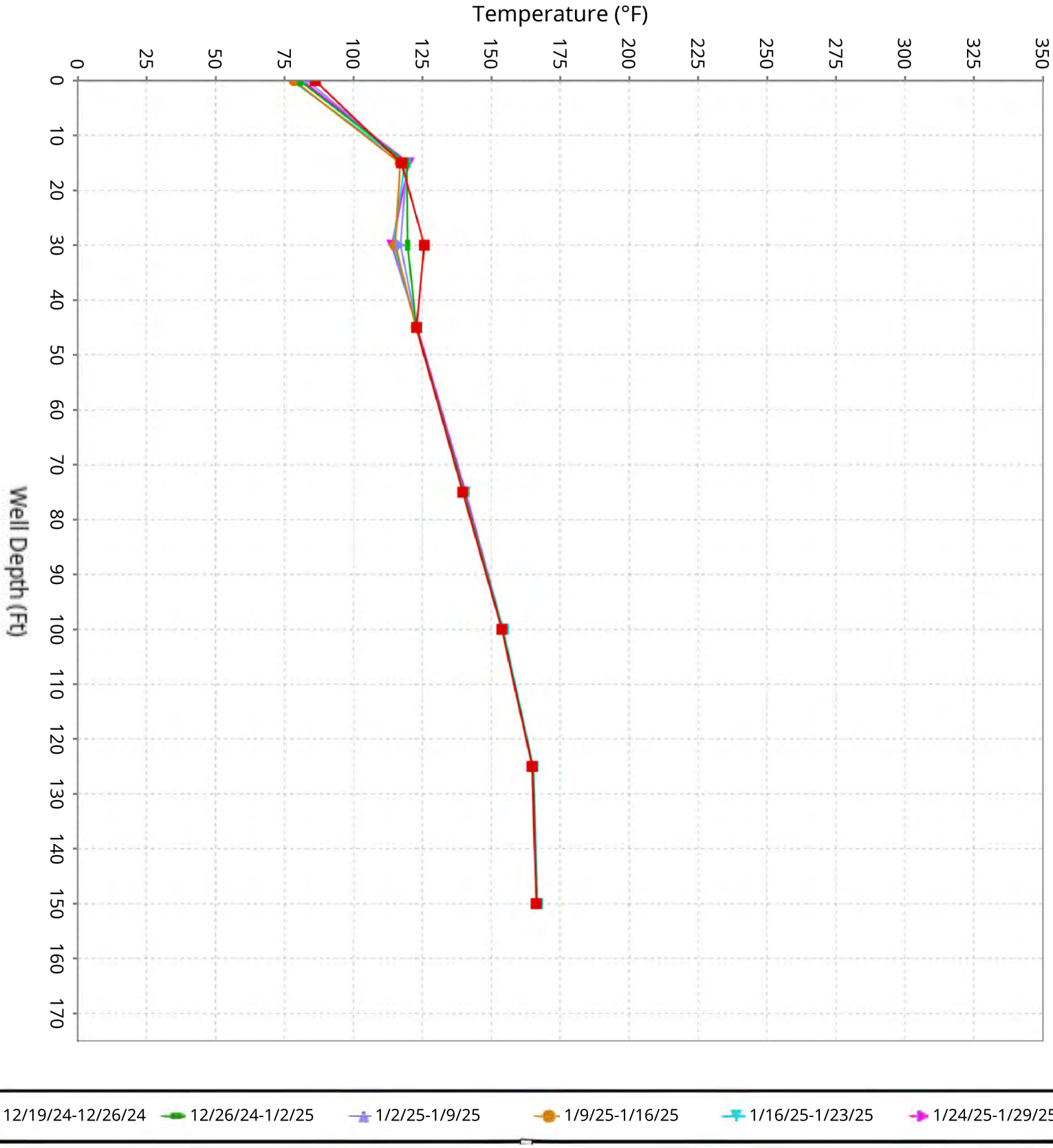
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-14

Maximum data for 12/19/2024 to 1/29/2025



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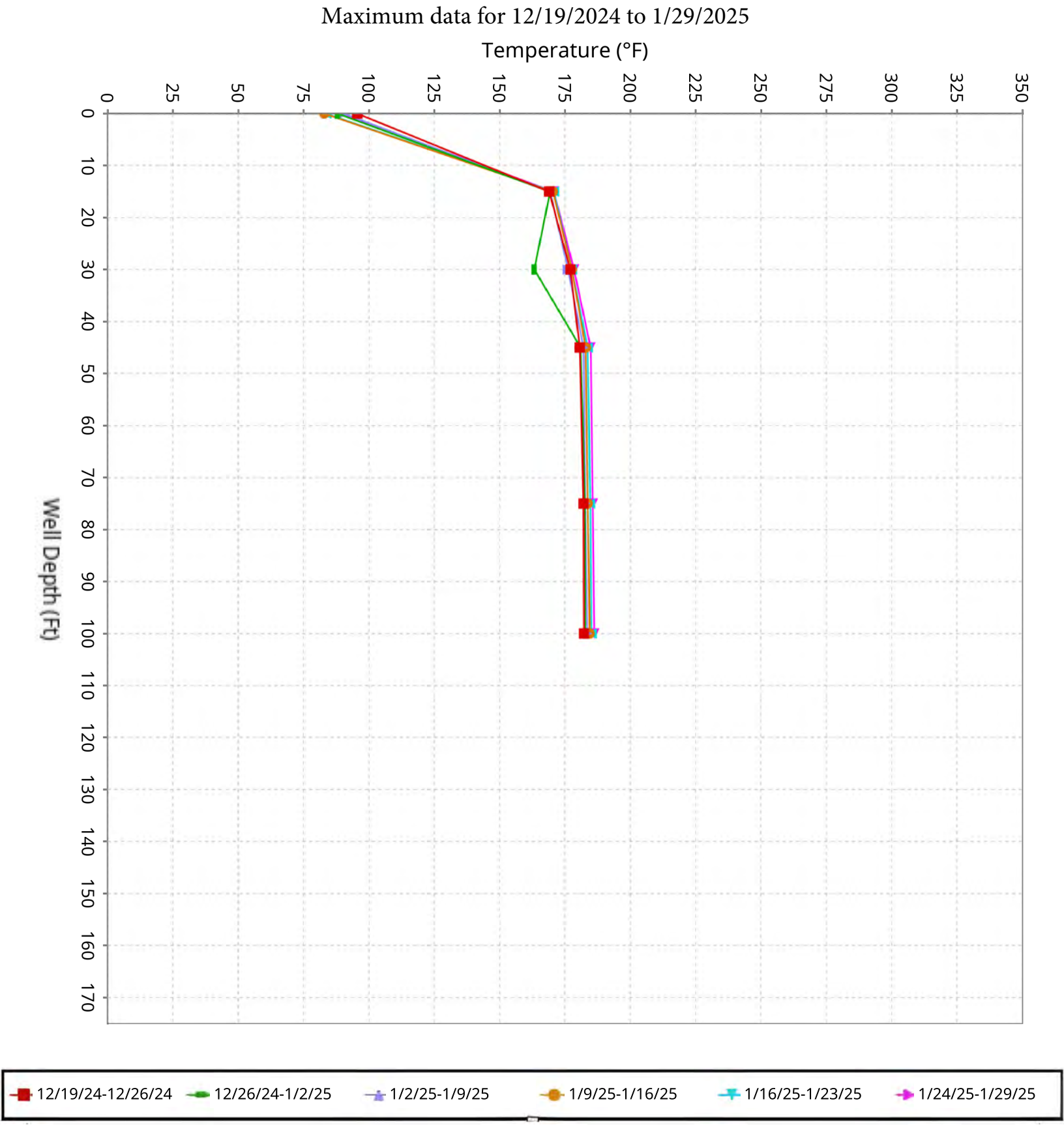
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-15



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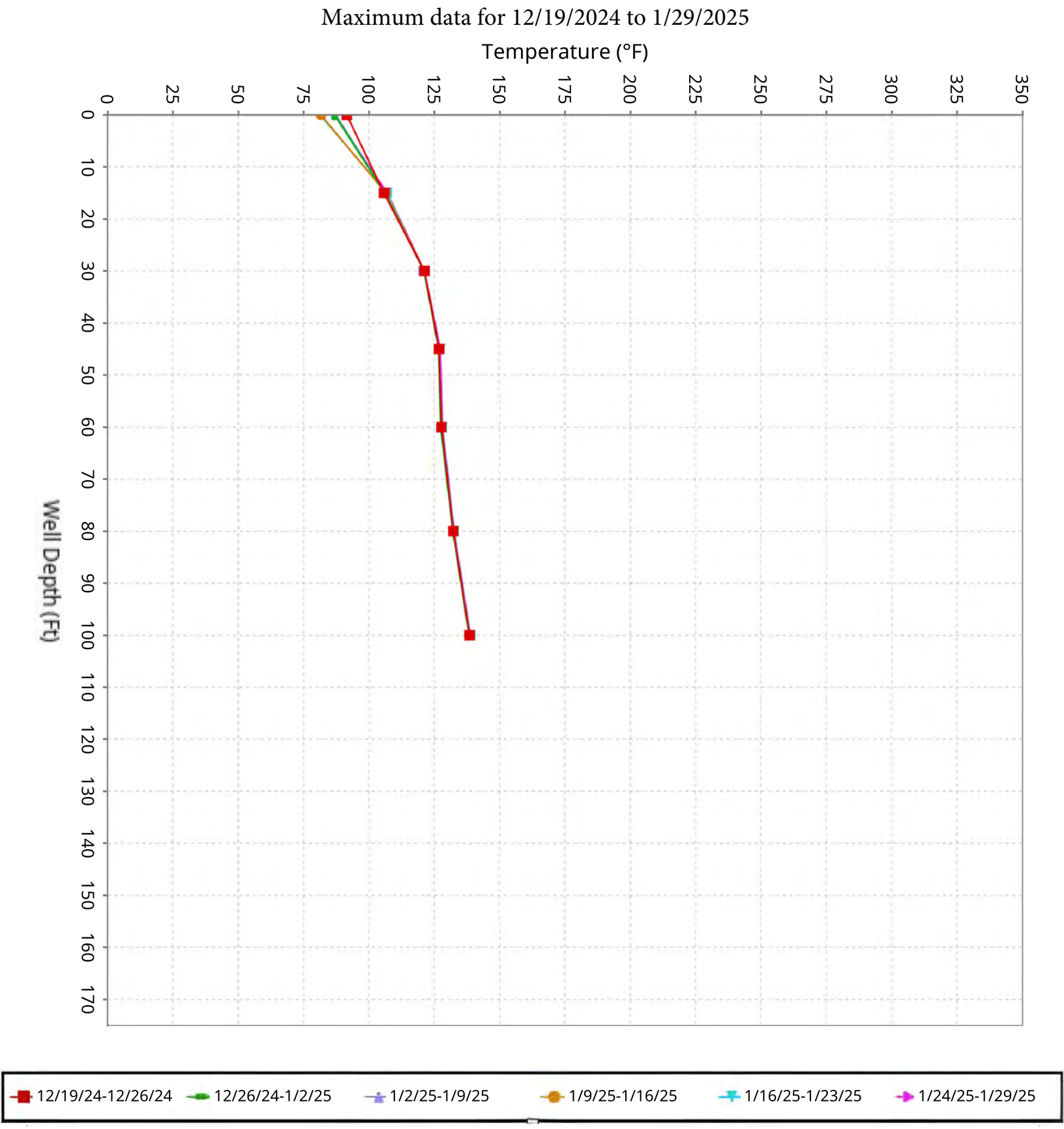
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-16



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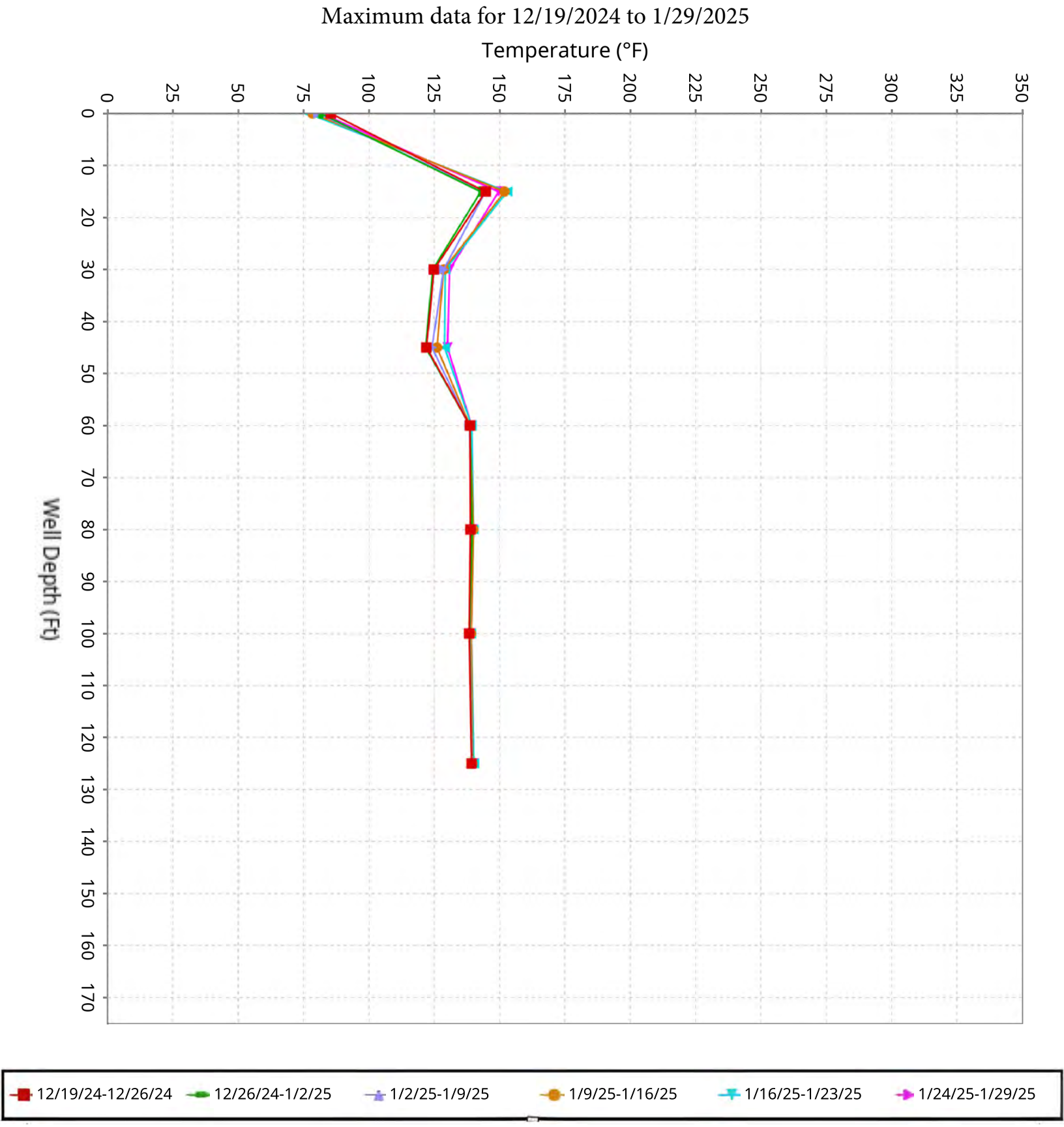
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-17



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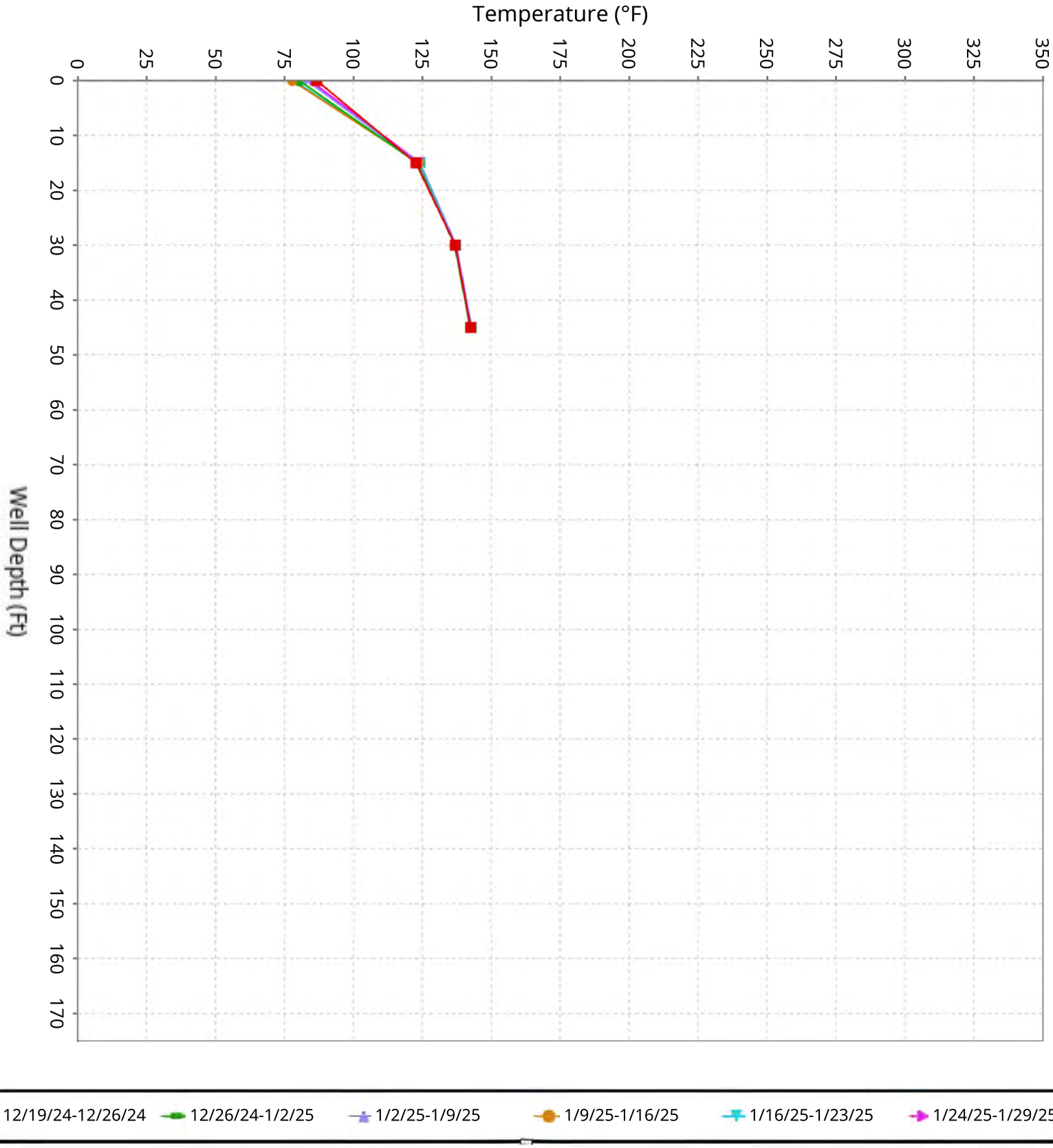
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-18

Maximum data for 12/19/2024 to 1/29/2025



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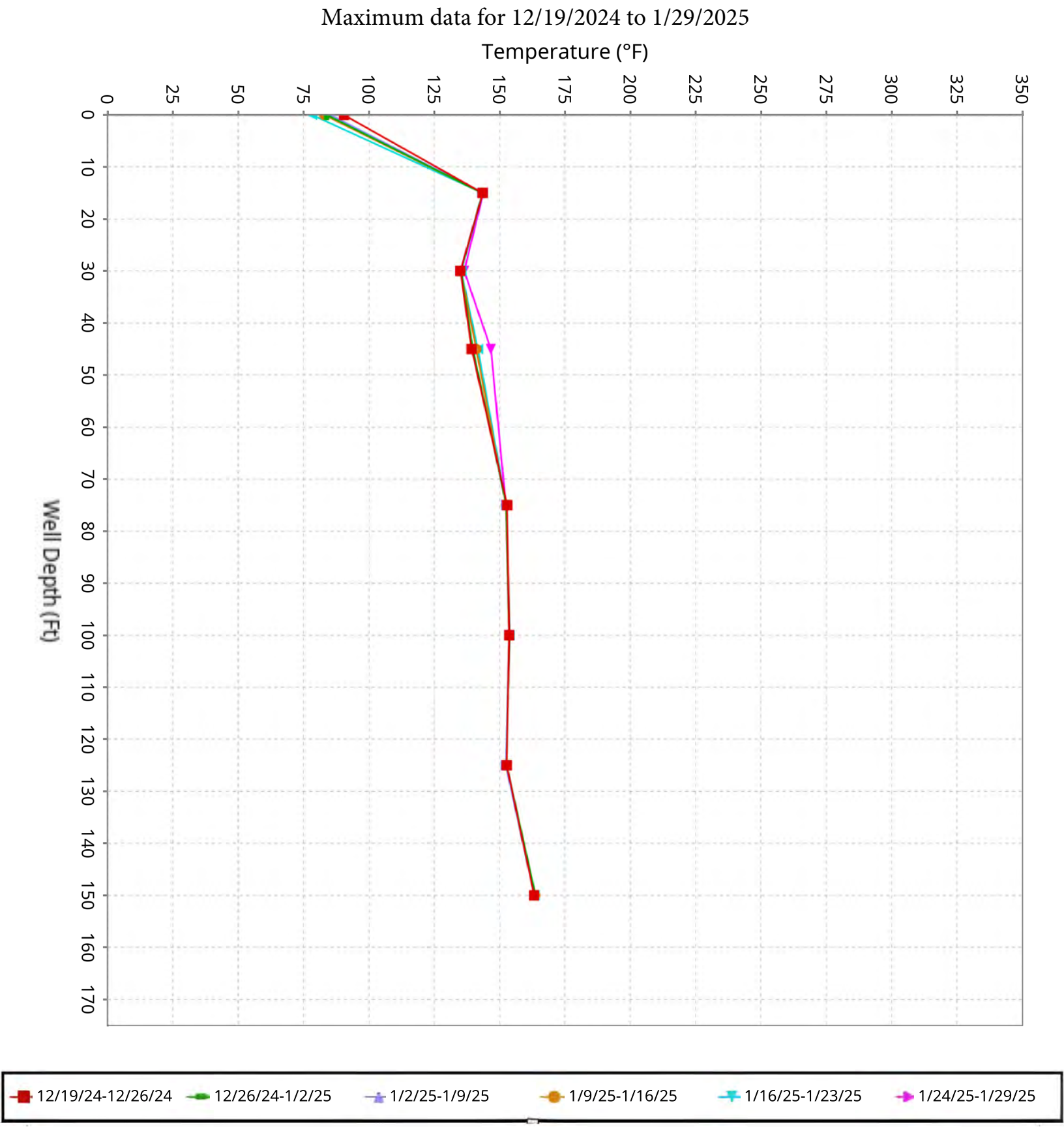
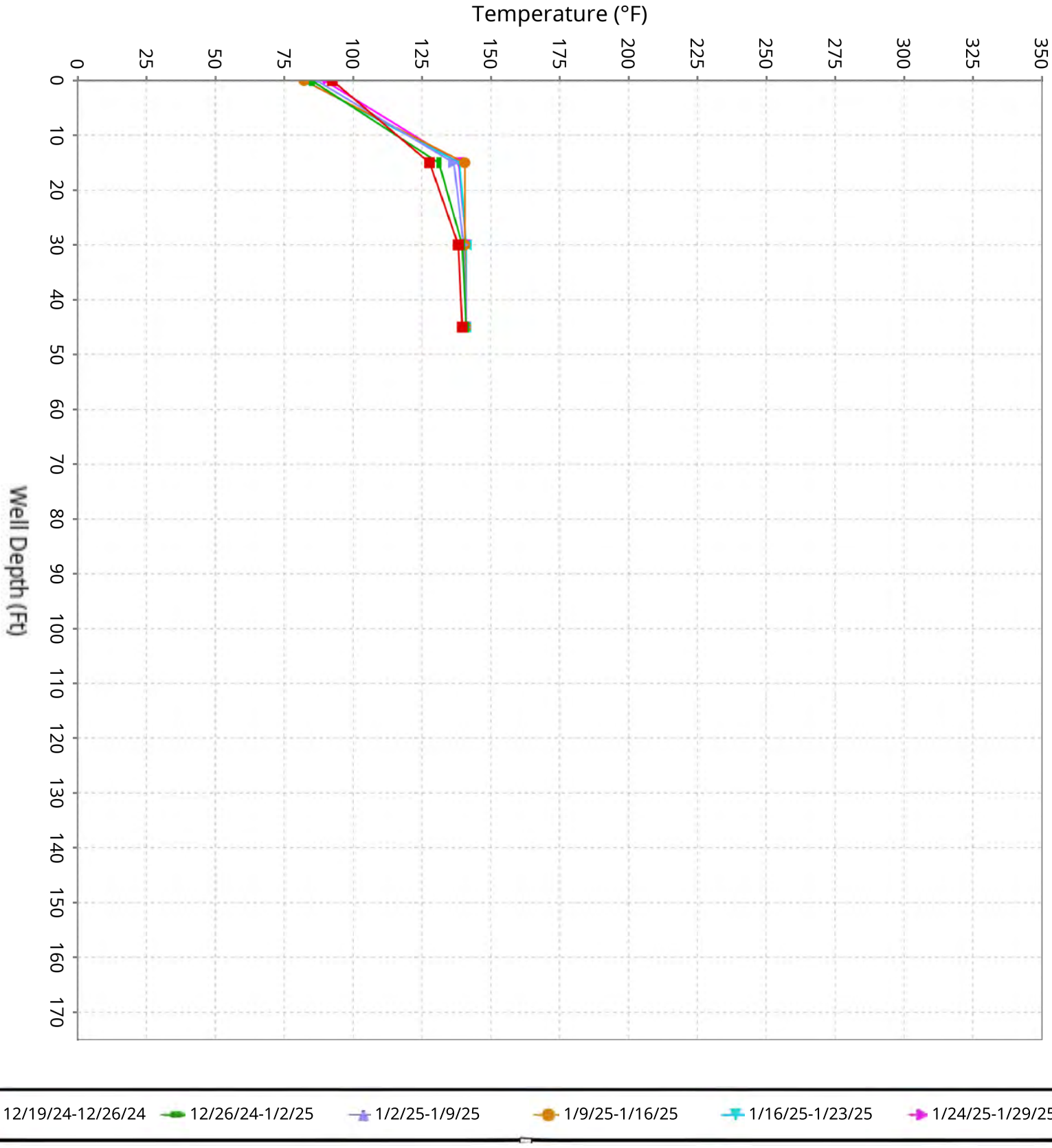
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-19



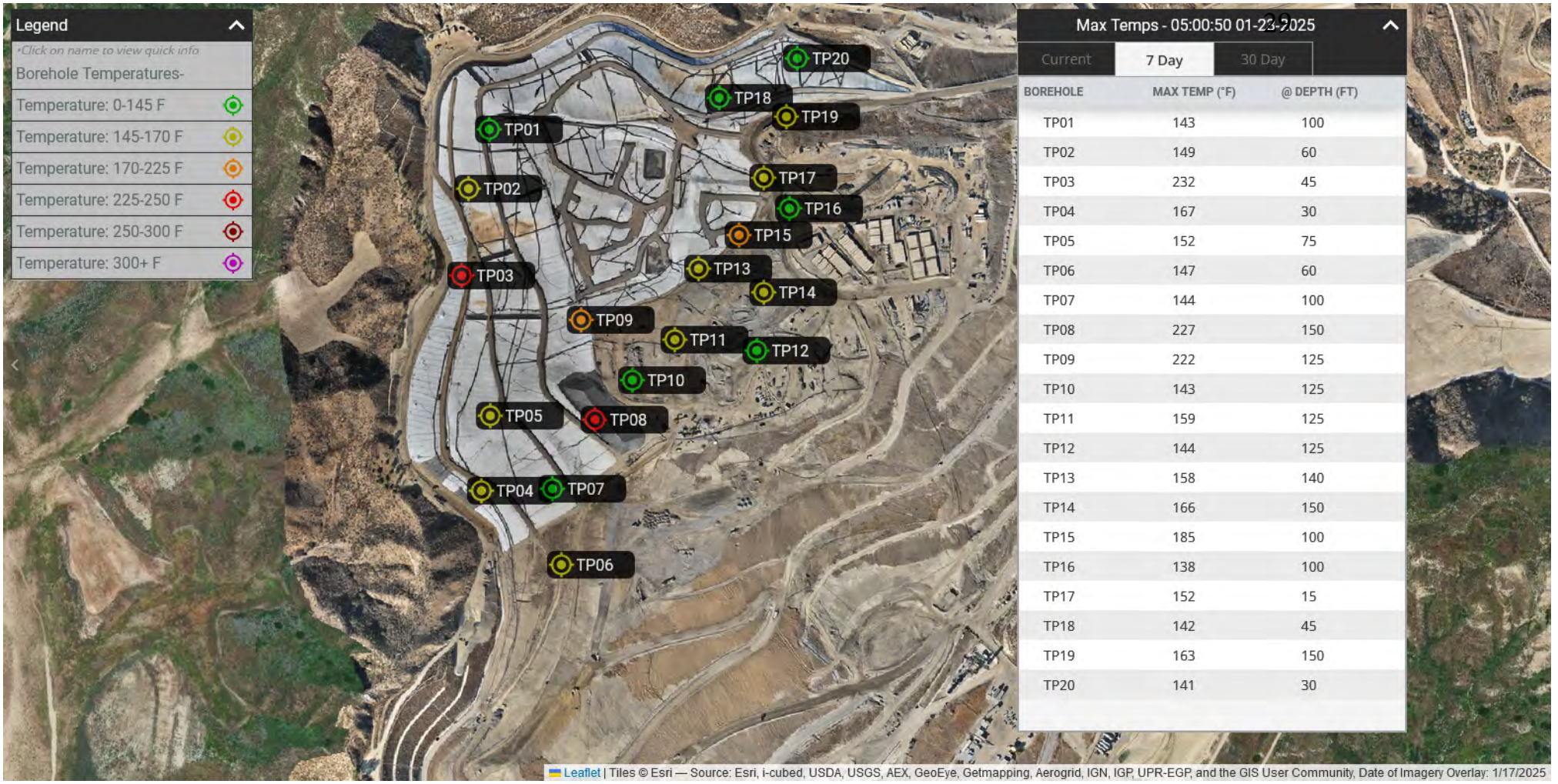
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-20

Maximum data for 12/19/2024 to 1/29/2025



SCS ENGINEERS

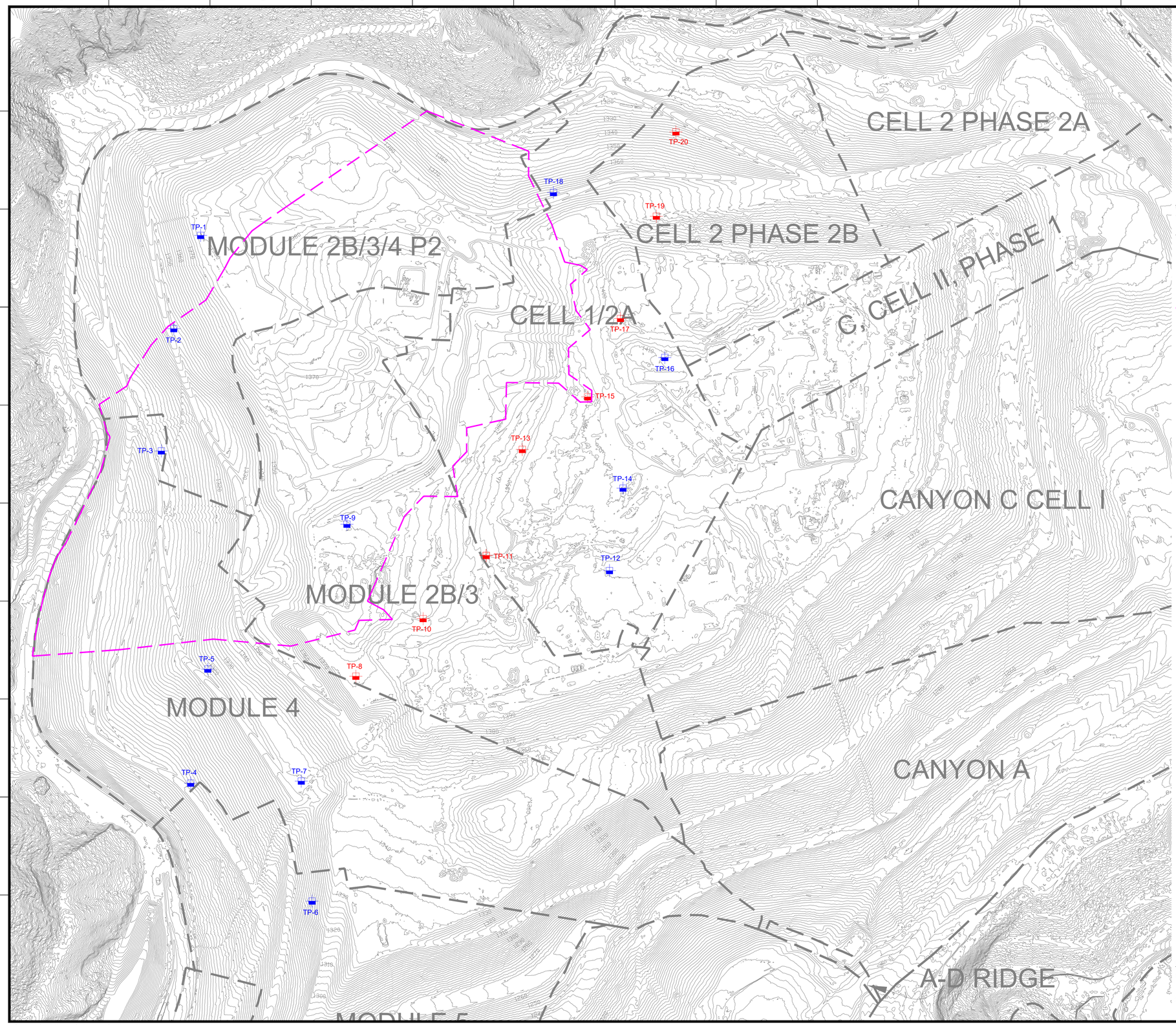
Maximum Vertical Temperature Map from Temperature Probes at Chiquita Landfill

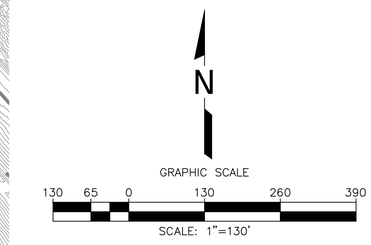


Max Temps - 05:00:50 01-23-2025

Current | 7 Day | 30 Day

BOREHOLE	MAX TEMP (°F)	@ DEPTH (FT)
TP01	143	100
TP02	149	60
TP03	232	45
TP04	167	30
TP05	152	75
TP06	147	60
TP07	144	100
TP08	227	150
TP09	222	125
TP10	143	125
TP11	159	125
TP12	144	125
TP13	158	140
TP14	166	150
TP15	185	100
TP16	138	100
TP17	152	15
TP18	142	45
TP19	163	150
TP20	141	30





LEGEND

- 1150 — EXISTING TOPOGRAPHIC CONTOUR
- EXISTING CELL LIMITS (APPROXIMATE)
- TP-XX — INSTALLED TEMPERATURE PROBES - STANDALONE
- TP-XX — INSTALLED TEMPERATURE PROBES - INSTALLED WITHIN WELL CASING
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW

GENERAL DRAWING NOTES:

1. EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN WAS PROVIDED BY PROPELLER. AERIAL PHOTOGRAPHY DATED JANUARY 22, 2025.
2. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.

NO.	REVISION	DATE

SHEET TITLE: TEMPERATURE PROBE INSTALLATION MAP

PROJECT TITLE: TEMPERATURE PROBE INSTALLATION PROJECT
CHIQUITA LANDFILL
CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL
CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX. (562) 427-0805

PROJ. NO: 01204123.35 | DWN. BY: SRM | CHK. BY: JH/WCH | APP. BY: WCH | ACAD FILE: ENGINEERS

DSN. BY: JH/SRM

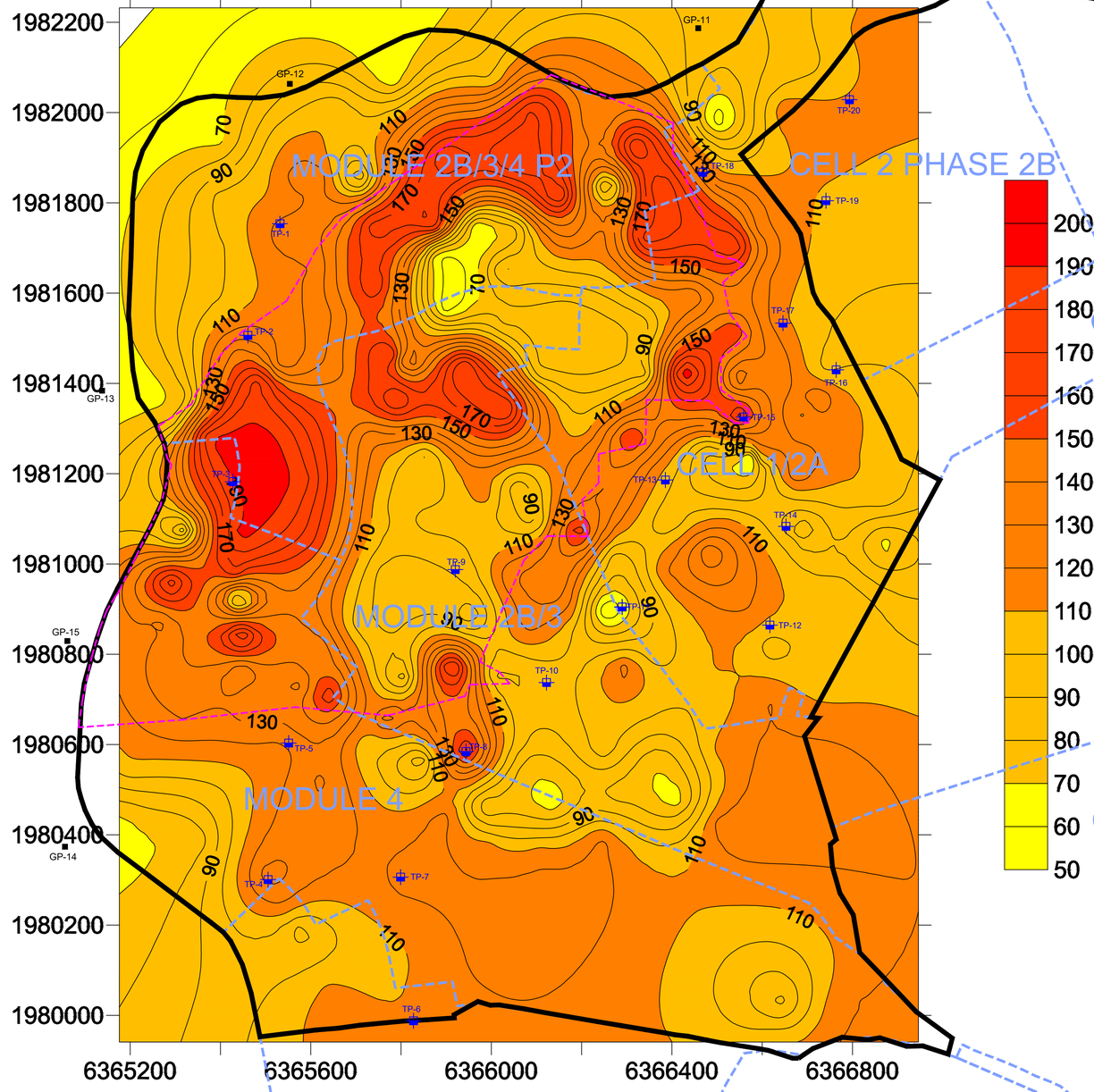
DATE: 01/30/2025

SCALE: AS SHOWN

SHEET: 1

C:\Users\5160srm\Desktop\2025 CCLF Temp. Probe Map_2025-01-30.dwg Jan 30, 2025 - 9:38am By: 5160srm

ATTACHMENT C



N

GRAPHIC SCALE

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SCALE: 1"=150'

LEGEND

- EXISTING CELL LIMITS (APPROXIMATE)
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
- REACTION AREA BOUNDARY - CONDITION 9A
- GP-XX EXISTING PERIMETER MIGRATION PROBE
- TP-XX EXISTING TEMPERATURE PROBE

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE | REVISION | NO.

SHEET TITLE: ISOTHERMAL GRADIENT MAP FEBRUARY, 2025

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

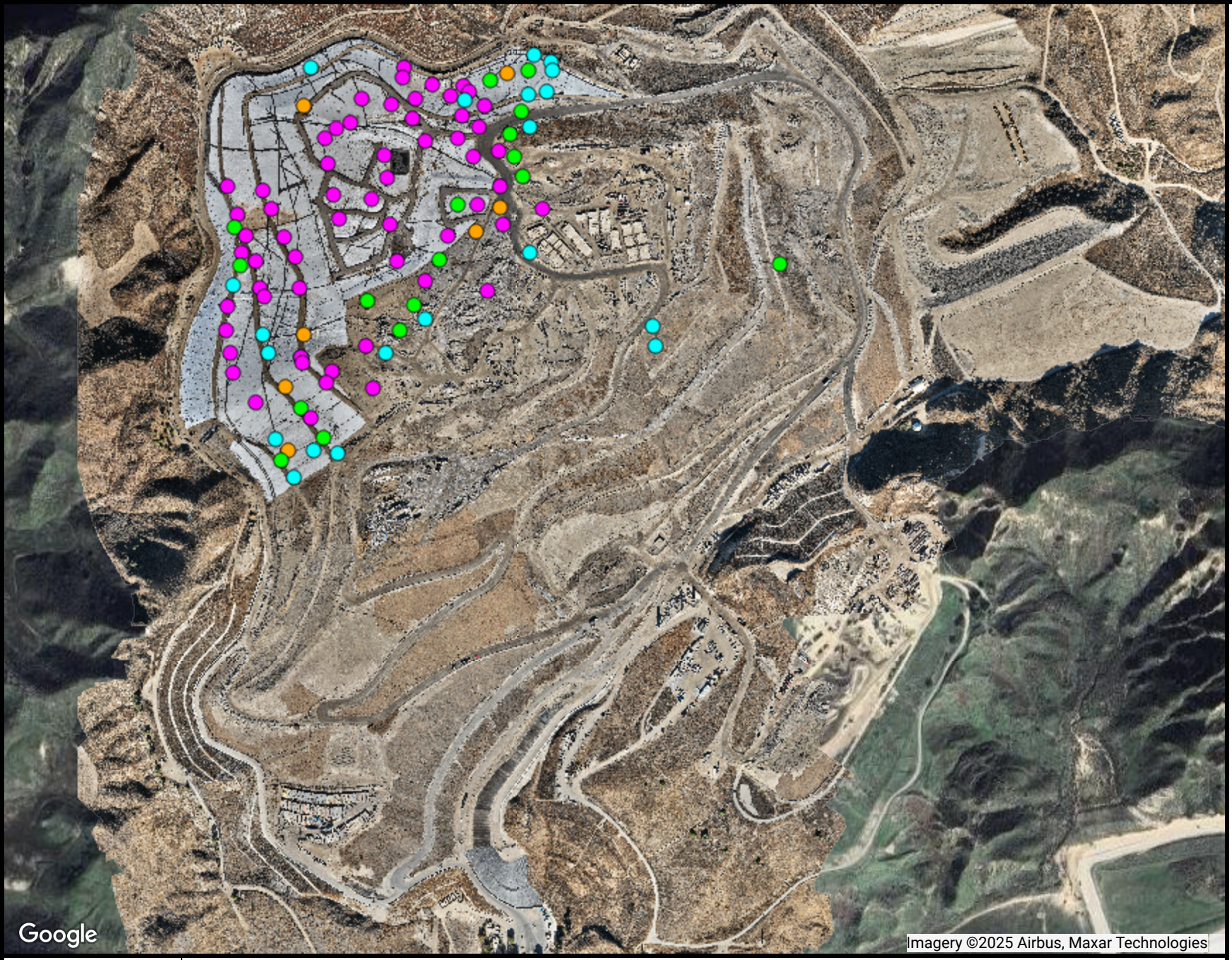
SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX. (562) 427-0805

ACAD FILE: PE/ENGINEERS | DWN. BY: SRM | CHK. BY: - | APP. BY: - | PROJ. NO. 01204123.41 | DSN. BY: -

DATE: 02/10/2025

SCALE: AS SHOWN

SHEET: 1



Ranges Mapped

				# Points
>=	0	and <	100	21
>=	100	and <	500	17
>=	500	and <	1000	7
>=	1000	and <	1000000	59

Point Type Legend

well

N

SCSeTools

Chiquita Canyon Landfill

Range Map

Parameter: CO (mid range)

Analysis Method: Average

Date Range: 01/01/2025 - 01/31/2025

Map generation date : 02/07/2025

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT G TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

March 10, 2025
File No. 01204123.21-13

Mr. Baitong Chen
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: Monthly Reaction Committee Determination on Reaction Area Boundary
Chiquita Canyon Landfill – Castaic, California

Dear Mr. Chen:

In accordance with Condition Nos. 9a and 9b of the Modified Stipulated Order for Abatement (SOFA) pertaining to the Chiquita Canyon Landfill (Landfill or Facility) (Case No. 6177-4), the Reaction Committee has reviewed newly acquired applicable data recorded during the month of February 2025, considered revisions of the estimated extent of elevated temperature landfill (ETLF) conditions exhibited at the subject Facility (referred to as the "Reaction Area" limits), and has prepared this determination on potentially revising the Reaction Area map.

Attachment A presents the Drawing, titled "Reaction Area Map", prepared by SCS Engineers (SCS) and dated 3/6/25. The Drawing depicts the Reaction Area boundary as prescribed in Condition No. 9a, which corresponds to the limits of Cells 1/2A, 2B/3, 4, and Module 2B/3/4 P2, as a solid black line. The Drawing also depicts the estimated extent of ETLF conditions being experienced at the site based on the Reaction Committee's review of scientific data as a dashed magenta line.

The rationale that serves as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include the following:

- LFG wellhead temperatures in excess of approximately 160 degrees Fahrenheit.
- Poor gas quality (defined as methane levels of less than 30 percent) in conjunction with methane-to-carbon dioxide (CH_4:CO_2) ratios less than 1.0.
- The concentration of hydrogen (H_2) in the LFG measured greater than 2 percent by volume.
- The concentration of carbon monoxide (CO) in the LFG measured greater than 2,000 ppm.
- Accelerated settlement of the landfill surface, defined as approximately 18 inches or greater within a 60-day period, and cracks in landfill cover. This corresponds to a strain value (i.e., settlement rate) rate of 3 percent per year for areas with a 300-foot waste column depth, which we believe is a reasonable average depth in the subject area of interest.
- First-hand observations of Landfill and/or SCS engineering, construction, and operations and maintenance (O&M) field personnel who are on-site related to: 1) atypical excess leachate quantities (presence and quantity of liquids); 2) instances of pressurized liquids emitting from the landfill surface, from boreholes during drilling, and from LFG wells; and, 3) the characteristics of the odors originating from the select areas of the waste footprint (often

described as “chemical-like” and distinctly different from typical LFG or landfill working face odors).

- Observations of subsurface waste conditions and characteristics as noted on borehole drilling logs for recently installed new wells and/or probes.

- Subsurface temperatures recorded at the in-situ waste temperature probes during February 2025.

- Temperature of gas or liquids measured at depth within the LFG well riser pipe (using an automated transmitter or manual field instrumentation).

- Since there were no drilling activities for new waste temperature probes during February 2025, there was no new data related to subsurface temperature and pressures associated with drilling.

CONSIDERATIONS FOR POTENTIAL ADJUSTMENTS TO THE ESTIMATED EXTENT OF ETLF CONDITIONS (DASHED MAGENTA LINE)

Near CV-24079 & TP-8

Recall that well CV-24079 and temperature monitoring probe no. 8 (“TP-8”) were temporarily decommissioned in October 2024 and, upon recommissioning in January 2025, the initial temperatures recorded at the deeper intervals within TP-8, as well as the LFG temperatures recorded at the wellhead in CV-24079, were significantly greater than previous data. However, during February, substantial temperature decreases were measured in the probe (the deepest interval exhibited a temperature reduction of approximately 50 degrees Fahrenheit). Similarly, the wellhead LFG temperature decreased significantly over six weeks, with a value of 151 degrees Fahrenheit on February 28th. Accordingly, at this time, the Reaction Committee believes that no adjustment to the estimated extent of ETLF conditions in this discrete location is warranted, since the data recorded in February does not appear to signal a potential expansion of the subsurface reaction.

Near CV-24062

Though the LFG temperature recorded at the wellhead in CV-24062 increased by 22 degrees Fahrenheit over a 2-day period, it then decreased by 10 degrees over a 7-day period. While the hydrogen content is greater than 2 percent, the methane concentration measured in late February was 34 percent, suggesting that methanogenesis is still prevalent within the surrounding waste mass. This well is equipped with a dewatering pump and the abrupt temperature fluctuations are likely associated with the ongoing liquid removal activities. Accordingly, the Reaction Committee does not believe that any adjustment to the estimated extent of ETLF conditions in this discrete location is warranted at this time, since the data recorded in February does not appear to consistently signal a potential expansion of the subsurface reaction.

TEMPERATURE MONITORING PROBE DATA

The Reaction Committee reviewed the temperature measurements recorded during February 2025 by the in-situ temperature monitoring probes. As of February 2025, four (4) of the twenty-eight (28) probes (TP-2, 3, 9, and 15) are located within the current estimated extent of ETLF conditions (dashed magenta line). Of the remaining twenty-four (24) probes positioned outside of the boundary, twelve (12) probes are positioned within relatively close proximity (within 200 feet) of this boundary. It is the Committee's opinion that the temperatures recorded by the 24 probes outside of the boundary during February 2025 are not indicative of a subsurface reaction and do not substantiate a decision to adjust the boundary of the reaction area at this time. We will continue to observe the measurements being recorded by TP-8 (and the corresponding co-located well CV-24079) to evaluate whether the decreasing trend in temperature is maintained over the next several weeks.

HYDROGEN CONCENTRATIONS

The Reaction Committee also evaluated the concentration of hydrogen in landfill gas (LFG) during February 2025. Recall that certain wells positioned to the south and east of the reaction area boundary (where dewatering pumping was reactivated) have periodically demonstrated some increased hydrogen content in the LFG during the Reaction Committee's review of the data in previous months, which similarly was the case for the February data. The Reaction Committee noted in its review of the data that these wells did not exhibit elevated temperatures, except for isolated instances at wells CV-24083 and CV-24084. The increased temperatures observed at these two wells were abrupt and either demonstrated corresponding decreases in temperature or were not yet confirmed beyond a single monitoring event. As such, sustained values have not been exhibited at this time. Other than these isolated values at these two wells, there was no evidence of the increased heat that is typical with ETLF conditions present at the wells exhibiting atypical hydrogen concentrations. As noted previously, the Committee suspects this increased hydrogen content may be attributable to substantial dewatering being accomplished throughout the Reaction Area and may be associated with gas movement from within the Reaction Area by existing horizontal collectors in close proximity. Thus, the presence of elevated hydrogen in these isolated locations does not suggest that ETLF conditions are expanding south and east of the delineated boundary. Accordingly, the Reaction Committee does not believe an adjustment to the boundary of the reaction area is merited at this time.

CONCLUSION

As presented on the Drawing included as **Attachment A**, the estimated extent of ETLF conditions (dashed magenta line) is fully contained within the Reaction Area boundary decreed in the SOFA (solid black line). Because the ETLF conditions are fully contained within the Reaction Area boundary and have not expanded into a new cell, the Reaction Committee finds no basis to modify the Reaction Area boundary as prescribed in Condition 9a at this time.

There was no dissenting opinion among the Reaction Committee members regarding this monthly determination. Supporting data is presented on the Drawing included as **Attachment A.** The maximum temperature measurements recorded at the 28 in-situ waste temperature monitoring probes during February are presented in **Attachment B** in graphical format. The landfill gas wellhead temperatures recorded at the extraction wells in the vicinity of the data-driven reaction area

boundary are reflected on the isothermal gradient range map presented as **Attachment C**. The carbon monoxide (CO) concentrations measured at the landfill gas wellheads are depicted on the range map presented as **Attachment D**. The electronic database and recordkeeping platform enables these measurements to be downloaded into a tabular spreadsheet format, which can be submitted to the South Coast Air Quality Management District under separate cover, if requested.

Please contact either of the undersigned if you have questions or require additional information.

Sincerely,

Robert E. Dick, PE, BCEE
Senior Vice President
SCS Engineers

Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

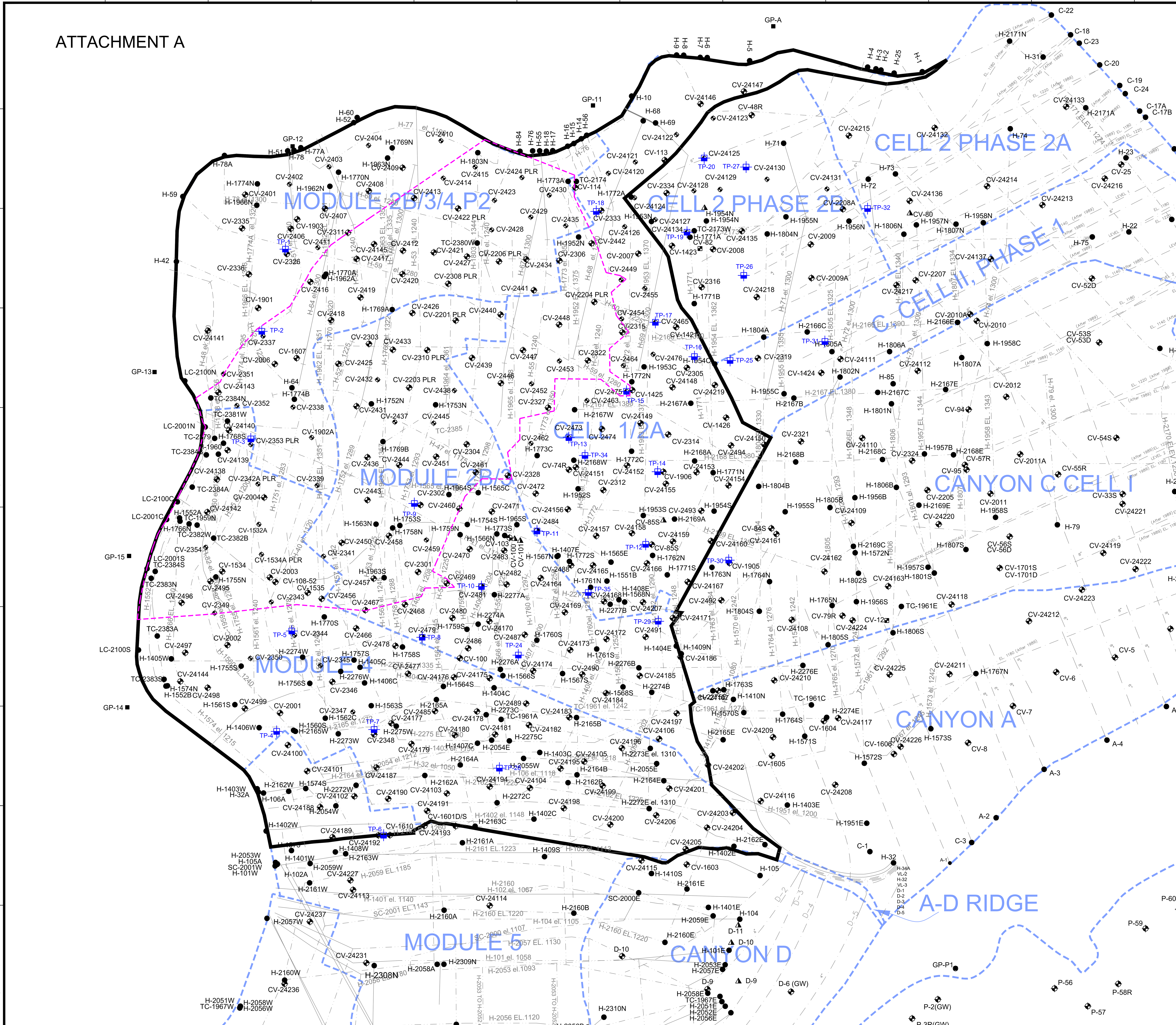
RED/PSS

cc: Nathaniel Dickel, SCAQMD
Christina Ojeda, SCAQMD
Pablo Sanchez Soria, PhD, CIH, CTEH
Neal Bolton, PE, Blue Ridge Services, Inc.
Richard Pleus, PhD, Intertox
Srividhya Viswanathan, PE, SCS Engineers

Enclosures:

Attachment A – Reaction Area Map
Attachment B – In-Situ Waste Temperature Monitoring Probe Data
Attachment C – Isothermal Gradient Range Map
Attachment D – Wellhead Carbon Monoxide Range Map

ATTACHMENT A



N

GRAPHIC SCALE

150 75 0 150 300 450

SCALE: 1"=150'

LEGEND

Symbol	Description
(dashed blue line)	EXISTING CELL LIMITS (APPROXIMATE)
CV-XX	EXISTING VERTICAL WELLS
CV-XX PLR	EXISTING VERTICAL WELL - PRESSURIZED LEACHATE RELEASE
CV-XX	EXISTING VERTICAL WELLS BELOW-GRADE
H-XX	EXISTING HORIZONTAL WELLS
CV-XX	EXISTING REMOTE VERTICAL WELLHEAD
GP-XX	EXISTING PERIMETER MIGRATION PROBE
TP-XX	EXISTING TEMPERATURE PROBE
(solid line)	EXISTING HORIZONTAL COLLECTOR - SOLID
(dotted line)	EXISTING HORIZONTAL COLLECTOR - PERFORATED
(dash-dot line)	EXISTING HISTORIC HORIZONTAL COLLECTOR
(dashed magenta line)	REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
(heavy black line)	REACTION AREA BOUNDARY - CONDITION 9A

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

NO.	REVISION	DATE

SHEET TITLE: REACTION AREA MAP FEBRUARY, 2025

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-5500 FAX. (562) 427-0805

PROJ. NO. 01204123.41 | DSN. BY: - | DWN. BY: SRM | CHK. BY: WCH | ACAD FILE: F:/ENGINEERS | APP. BY: WCH

DATE: 03/06/2025

SCALE: AS SHOWN

SHEET: 1

ATTACHMENT B

Solid Waste Borehole Maximum Temperature Profiles Over 6 Weeks

for 1/23/2025 to 3/5/2025

From February 27, 2025, through March 5, 2025, there were no recorded temperature increases and one recorded temperature decrease that triggered the notification limits set forth in the LEA's October 4, 2024 letter. Additionally, as noted previously and discussed further below, TP-08 was brought back online in January and initially registered elevated temperatures that have since decreased significantly. The temperature decreases associated with TMP-08 are due to the heat extraction by re-connecting the vacuum and pump to the nearby wells after the area was filled in.

Additionally, as of February 7, 2025, eight new TMPs (TMP-25, TMP-26, TMP-27, TMP-29, TMP-30, TMP-31, TMP-32, and TMP-34) have been installed and are online. None of these eight new TMPs indicate reaction temperatures occurring outside of the currently delineated data-driven reaction area boundary, and the three TMPs that were able to be drilled to within 20 feet of the liner (TMP-27, TMP-31, and TMP-32) show significantly cooler temperatures at the deepest thermocouple, as expected due to the cooling from the underlying earth. This data further supports the previous conclusions of cooler temperatures near the liner and the liner's integrity being uncompromised by elevated temperatures.

Chiquita provides the following updates:

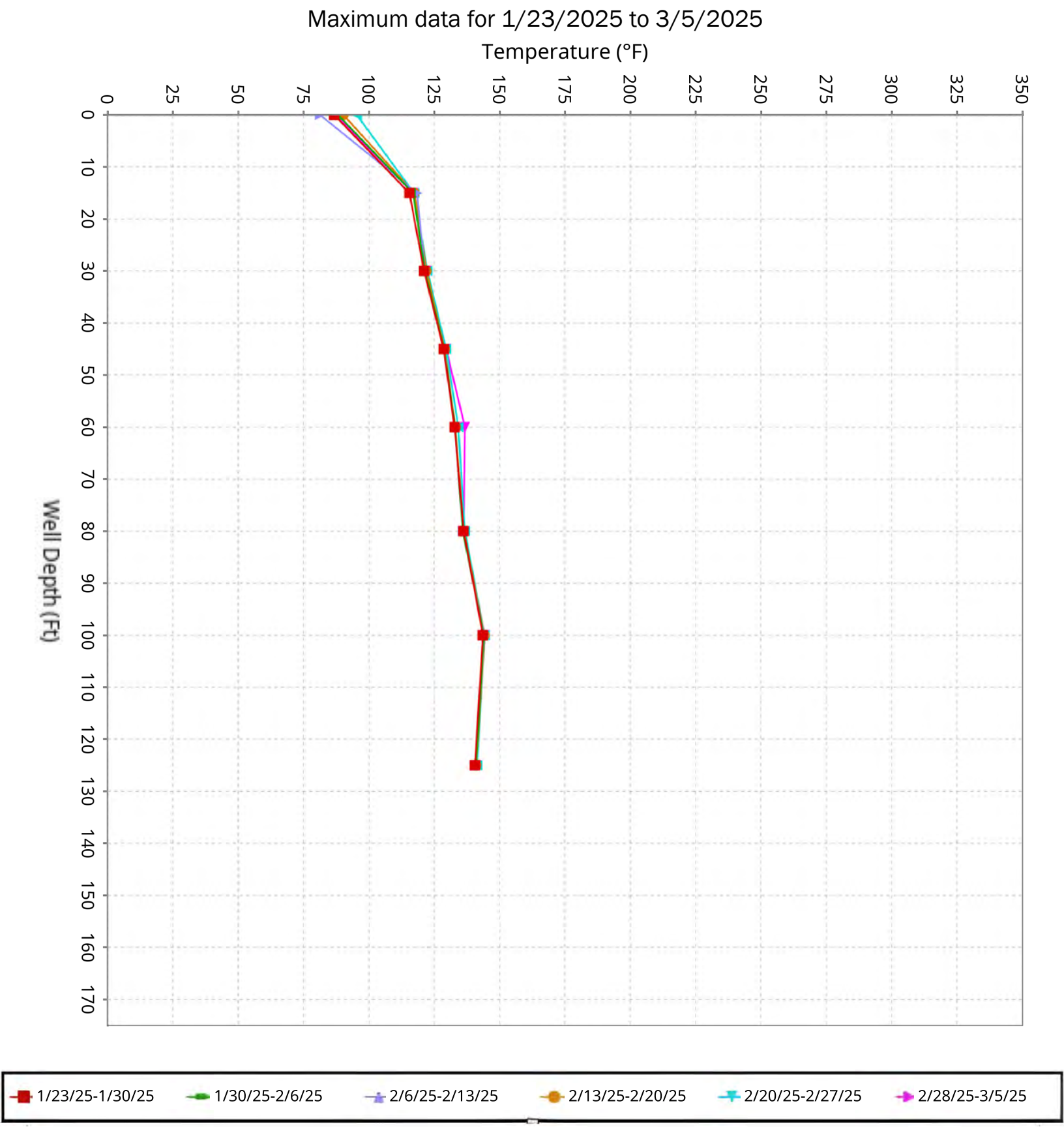
- TP-08
  - TP-08 was taken offline on October 3rd for filling operations related to the west toe excavation.
  - TP-08 was brought back online on January 10th. The gas and liquid collection infrastructure was also offline in the same area, and the nearby gas wells and pumps were also brought back online on January 10th. Initial temperature readings of TP-08 were higher than the historical average before TP-08 was taken offline.
  - As noted in previous updates, filling operations occurred over the prior several months, in which time Chiquita noticed other areas of the reaction area continuing to experience accelerated settlement. It is likely that the accelerated settlement pushed leachate into the TP-08/CV-2479 borehole, which because it was offline, did not allow for the removal of this leachate and landfill gas. With the TMP and well back online, gas and liquids extraction has resumed.
  - As also noted in previous updates, drilling activities for TP-24, geographically nearby, achieved a depth of 297 feet without encountering significantly elevated temperatures, further supporting that the increased temperature readings are due to the presence of localized leachate accumulation limited to the TP-08 borehole.
  - A continued reduction in temperatures has been recorded in the 15-foot, 30-foot, 45-foot, 100-foot, 125-foot, and 150-foot thermocouples since the previous week:
    - 15-foot thermocouple showed a decrease of 30°F degrees from 177°F to 147°F from January 16th to March 5th.
    - 30-foot thermocouple showed a decrease of 36°F degrees from 190°F to 154°F from January 10th to March 5th.
    - 5-foot thermocouple showed a decrease of 37°F degrees from 192°F to 155°F from January 10th to March 5th.
    - 100-foot thermocouple showed a decrease of 60°F degrees from 215°F to 155°F from January 10th to March 5th.
    - 125-foot thermocouple showed a decrease of 82°F degrees from 232°F to 150°F from January 10th to March 5th.
    - 150-foot thermocouple showed a decrease of 69°F degrees from 230°F to 161°F from January 10th to March 5th.
- TP-15
  - 30-foot thermocouple showed a decrease in maximum temperature of 20°F from 182°F to 162°F from February 26th to March 5th.

SCS ENGINEERS

07224053.00 | March 6, 2025

274 Granite Run Drive
Lancaster, PA 17601
717-550-6330

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-1



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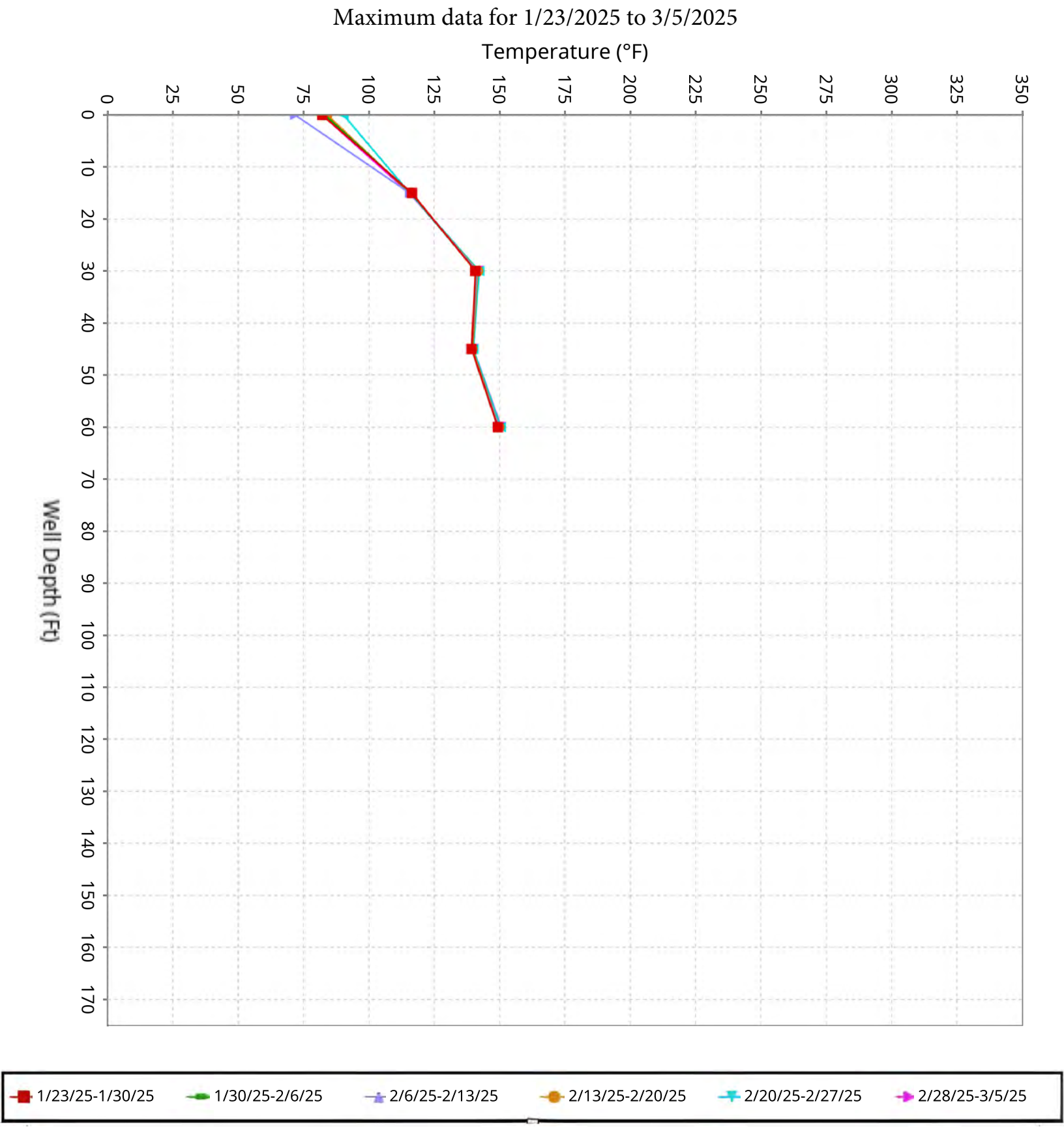
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-2



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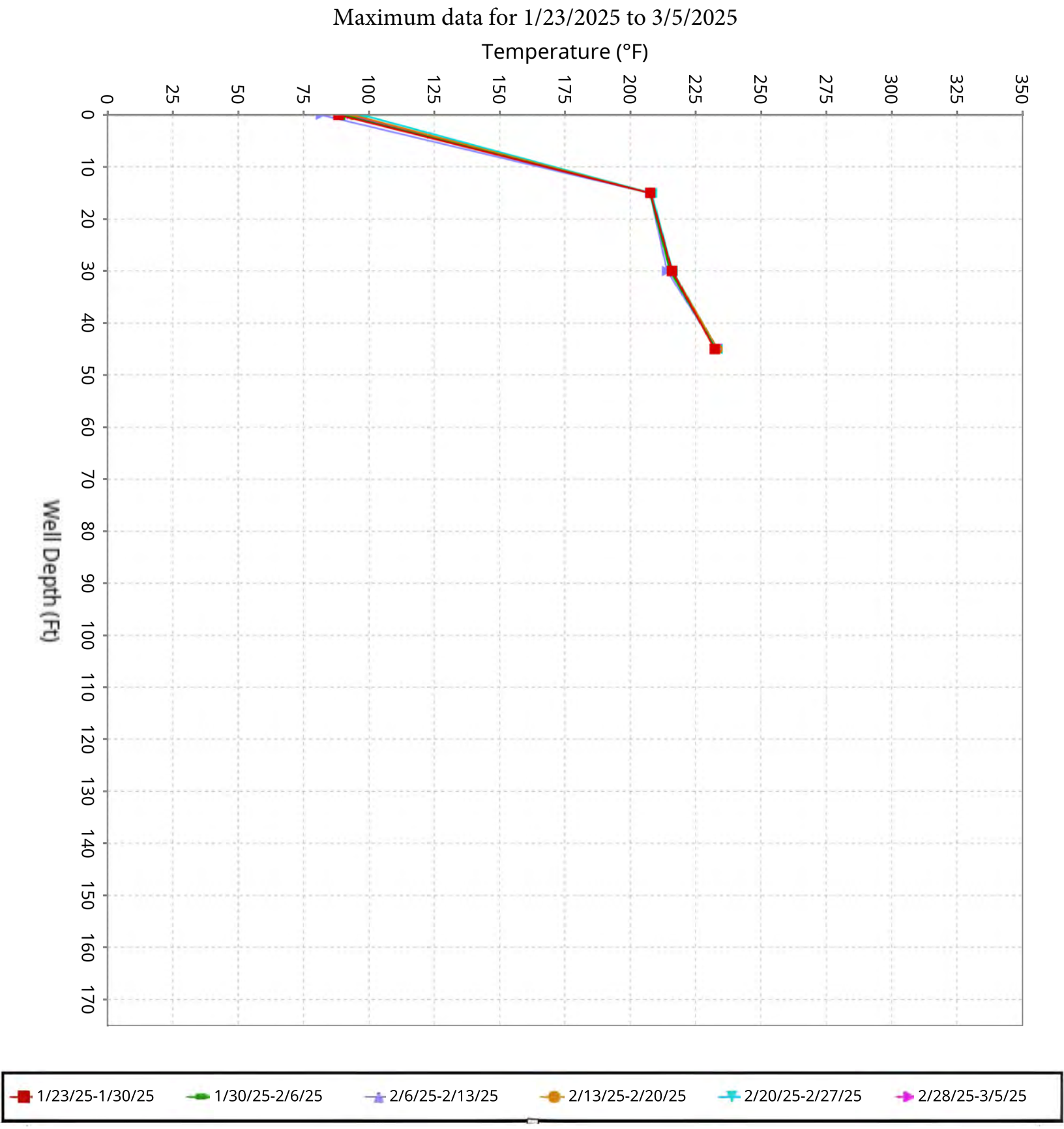
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-3



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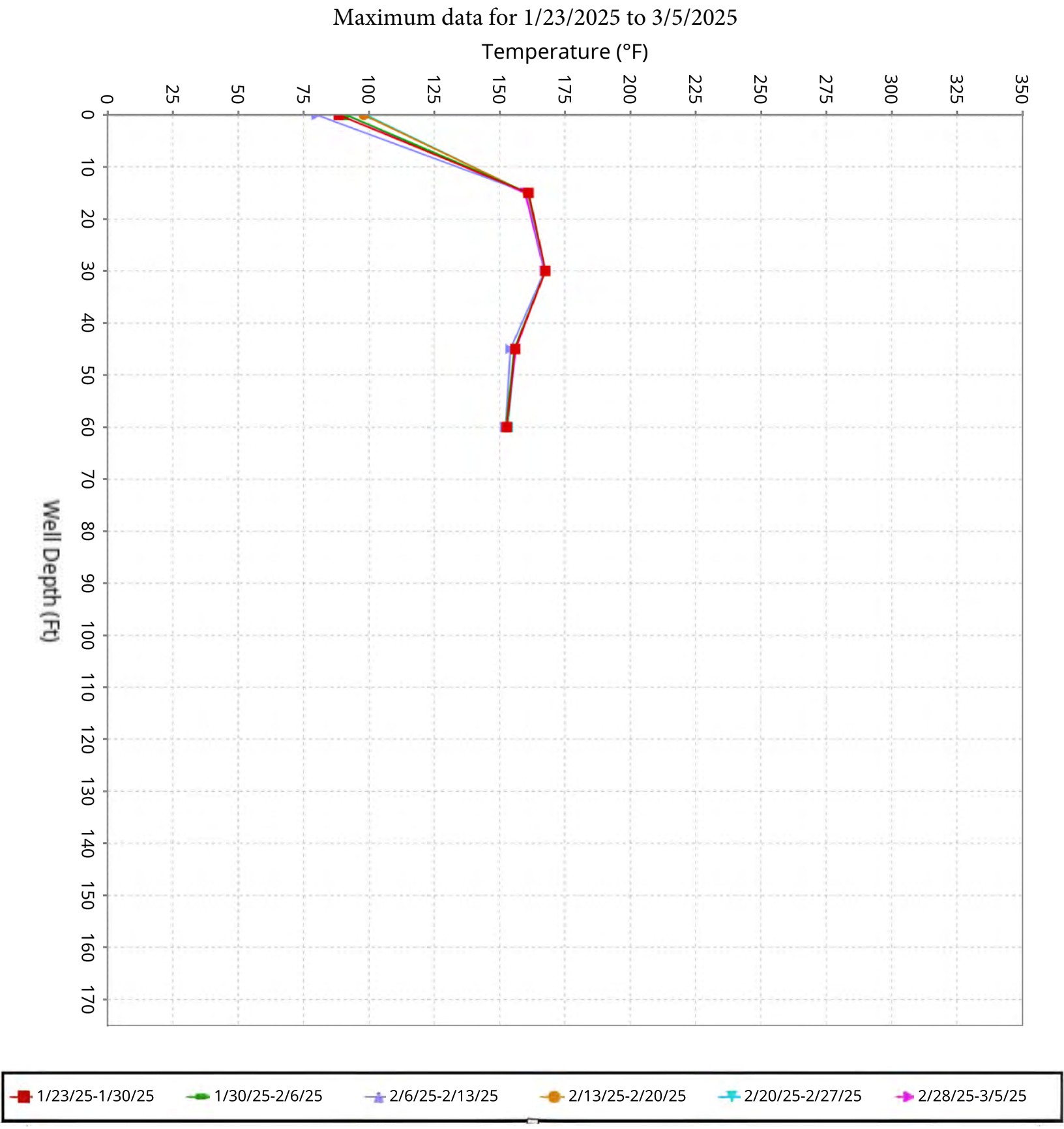
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-4



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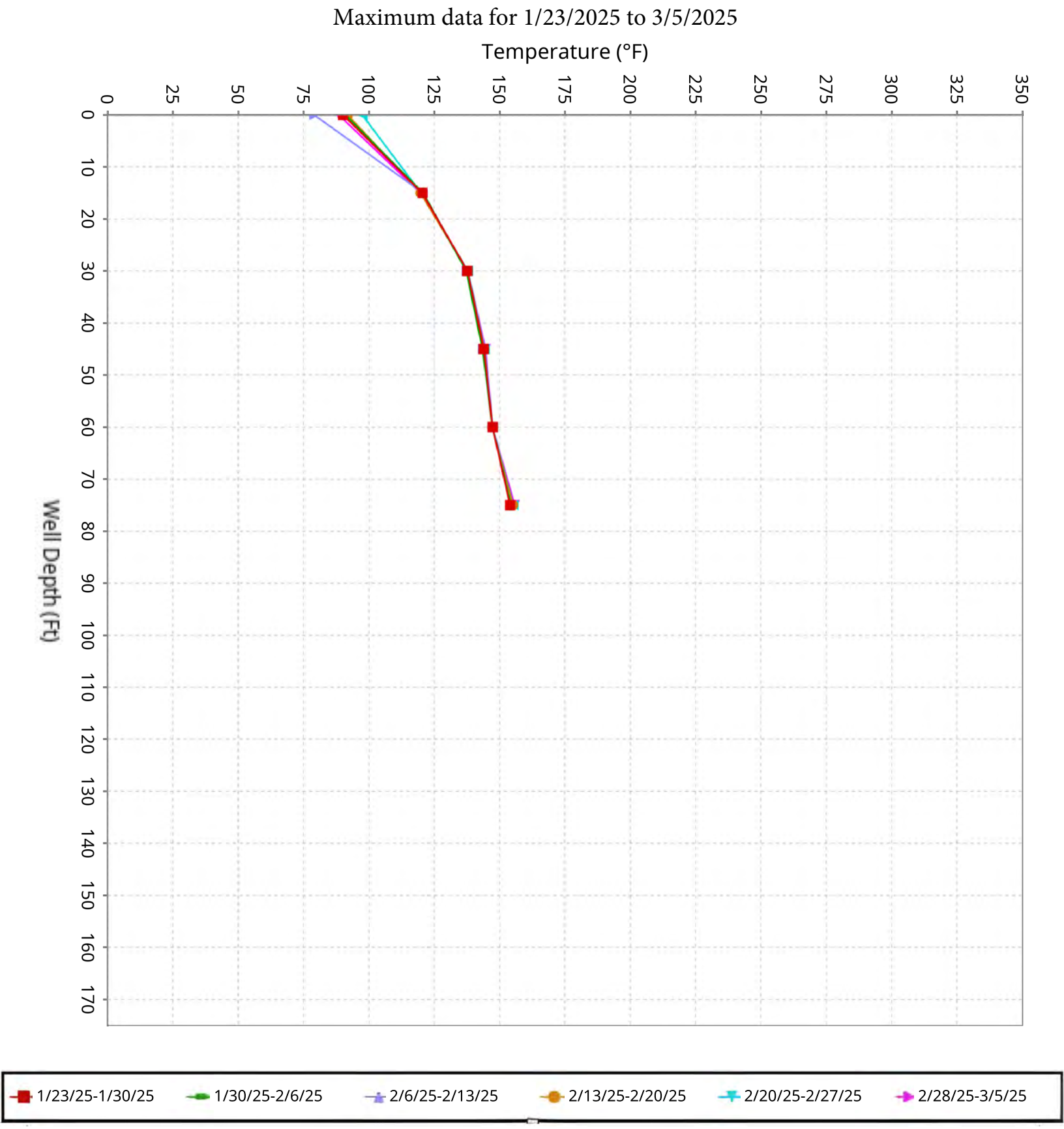
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-5



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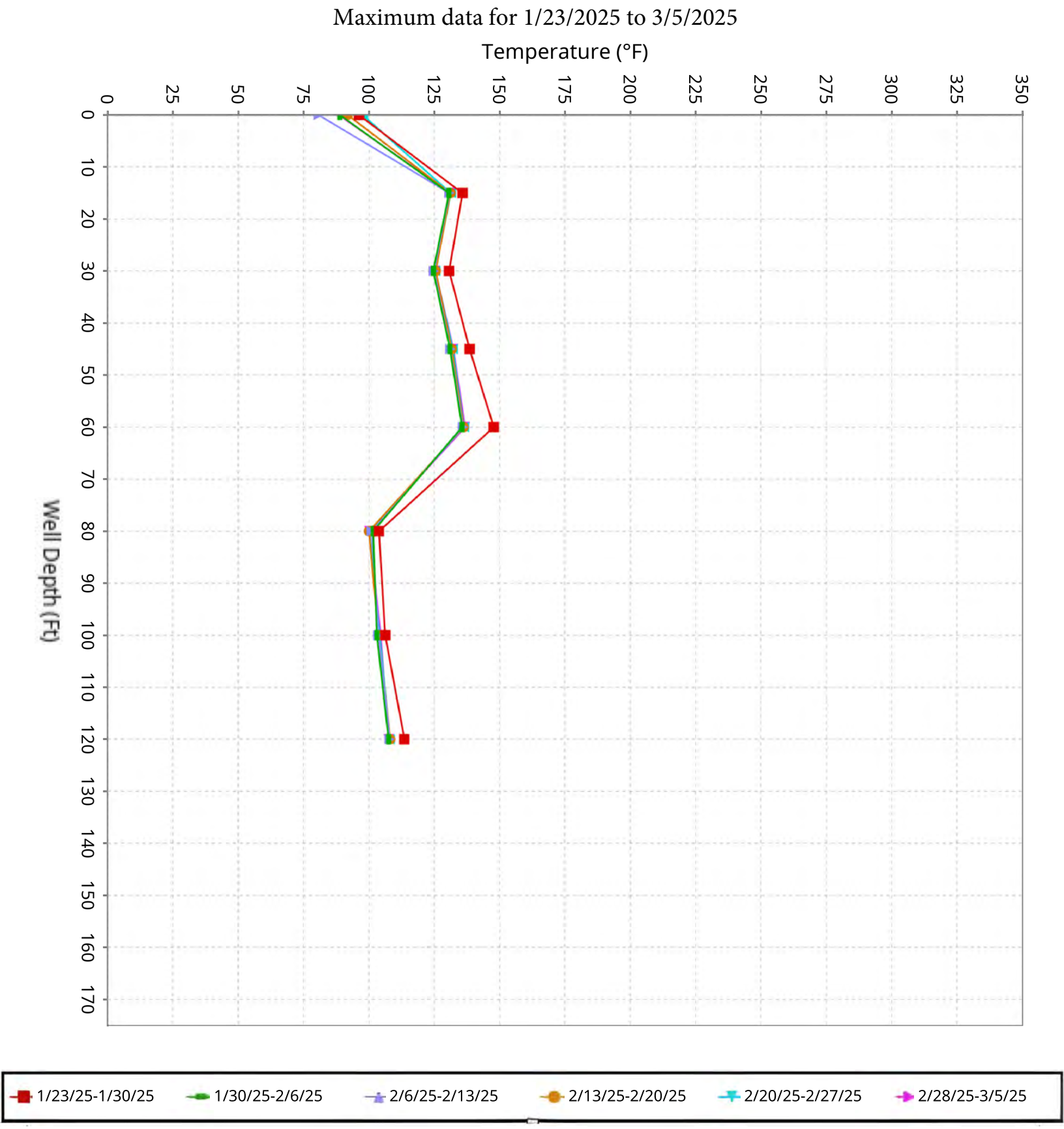
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-6



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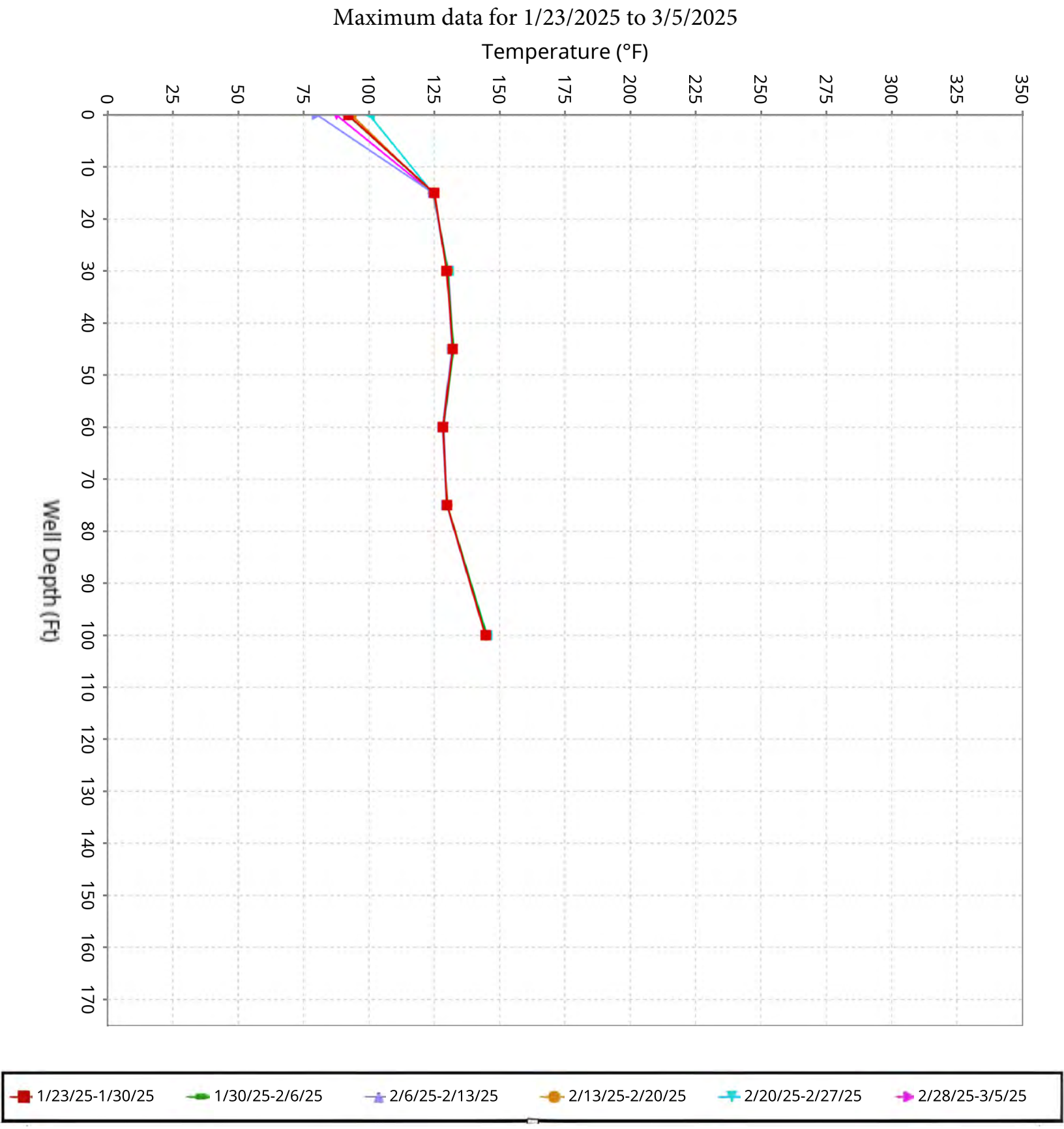
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-7



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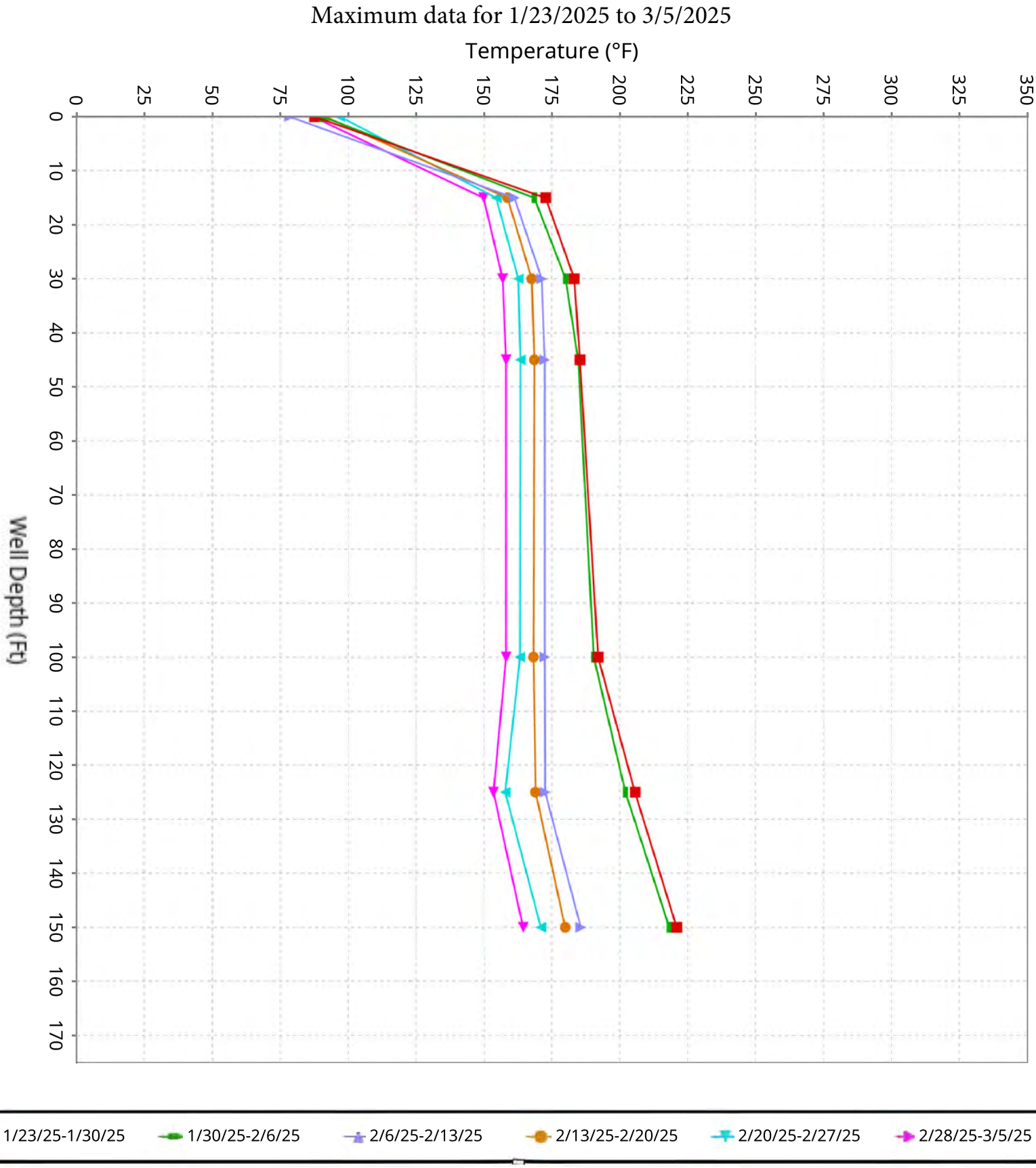
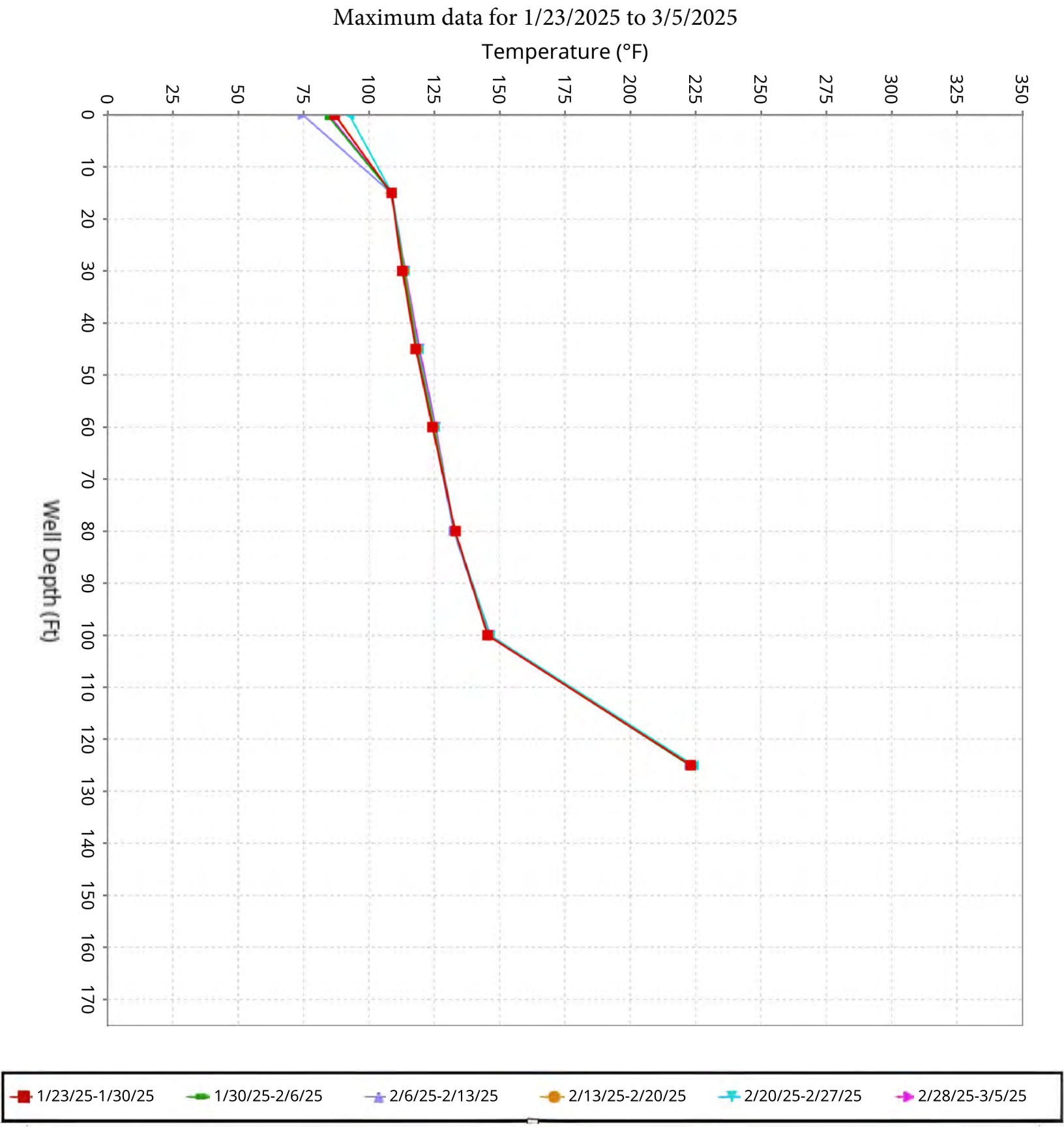
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-8



SCS ENGINEERS

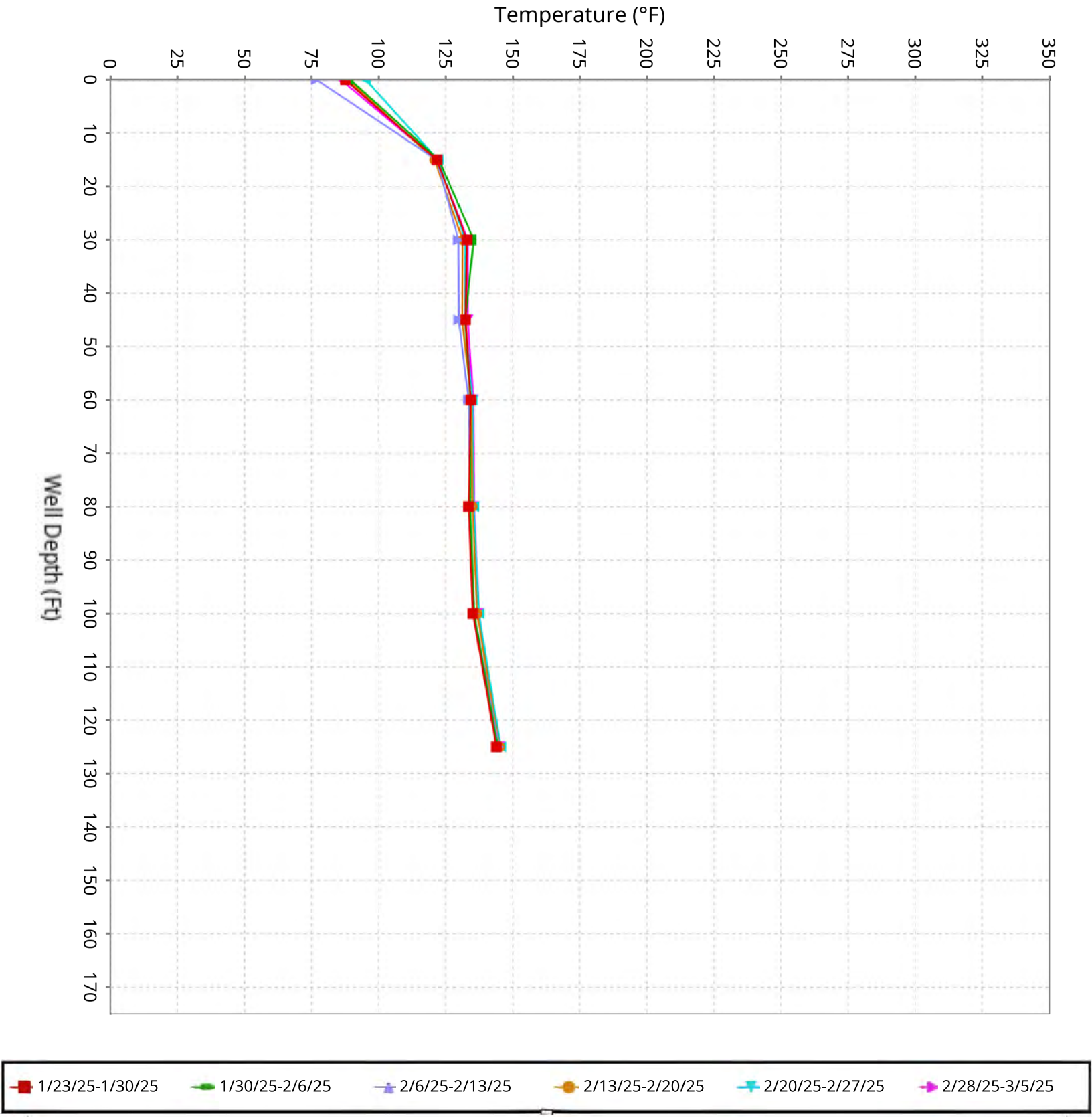
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-9



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-10

Maximum data for 1/23/2025 to 3/5/2025



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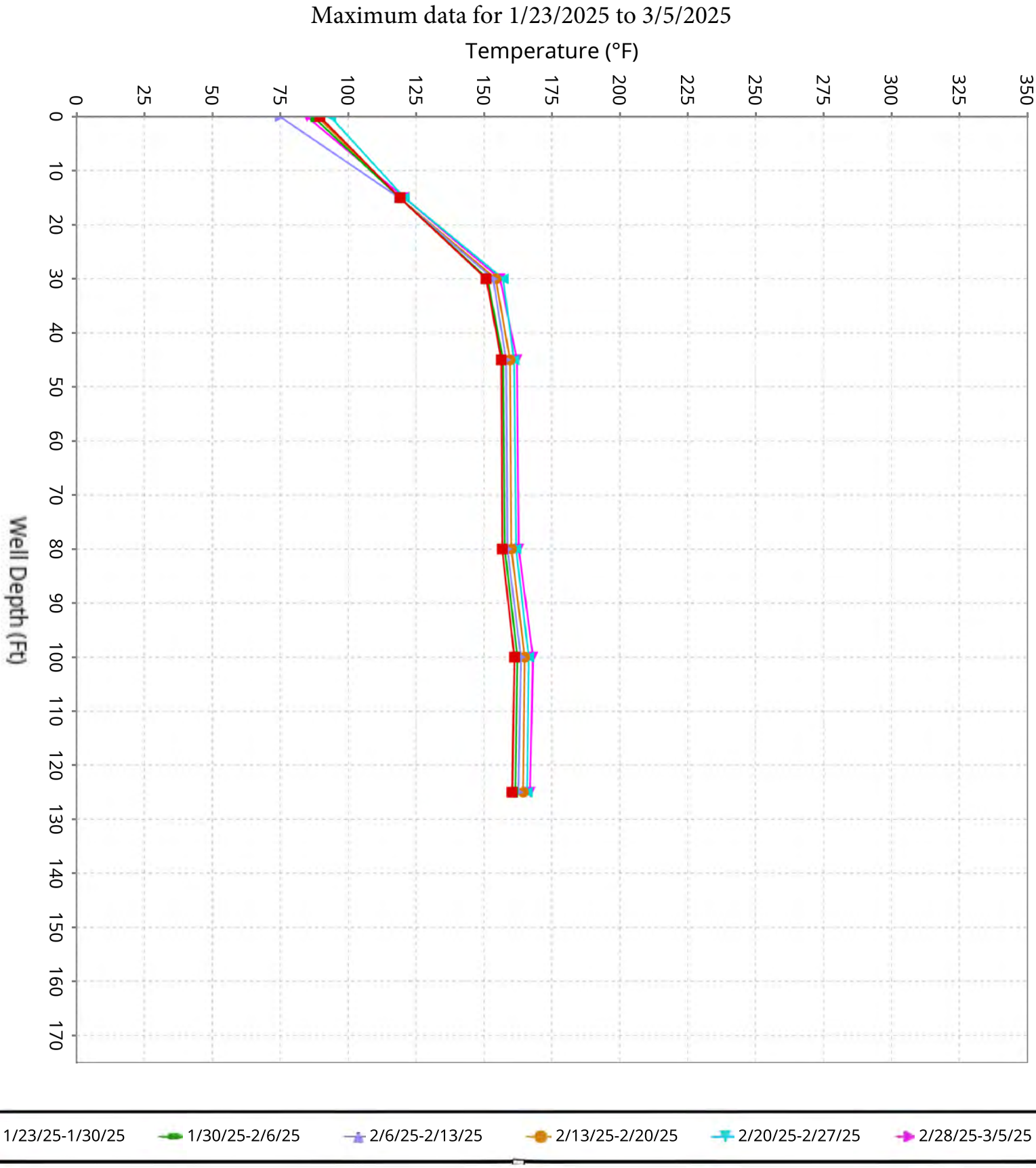
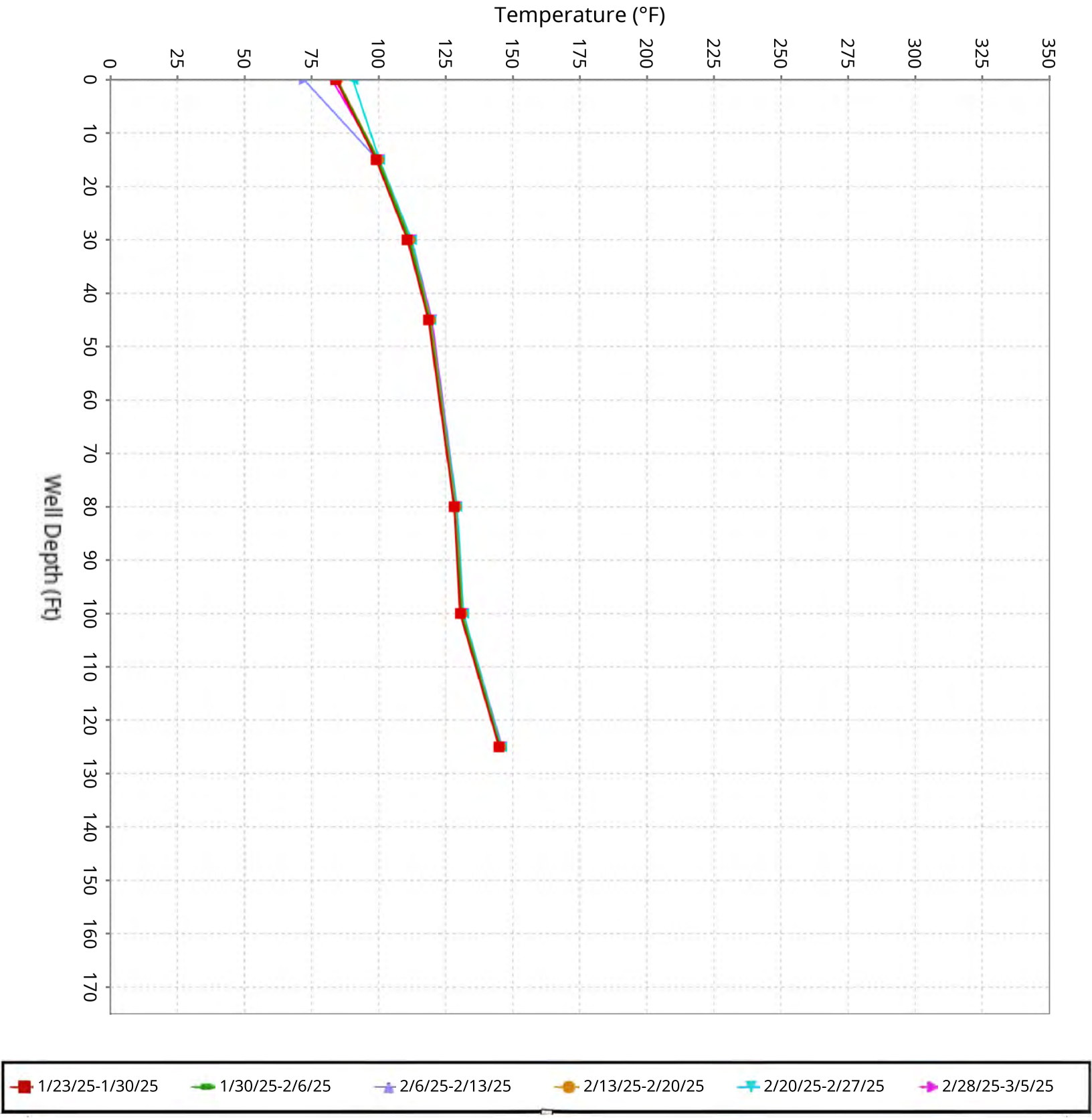
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-11



SCS ENGINEERS

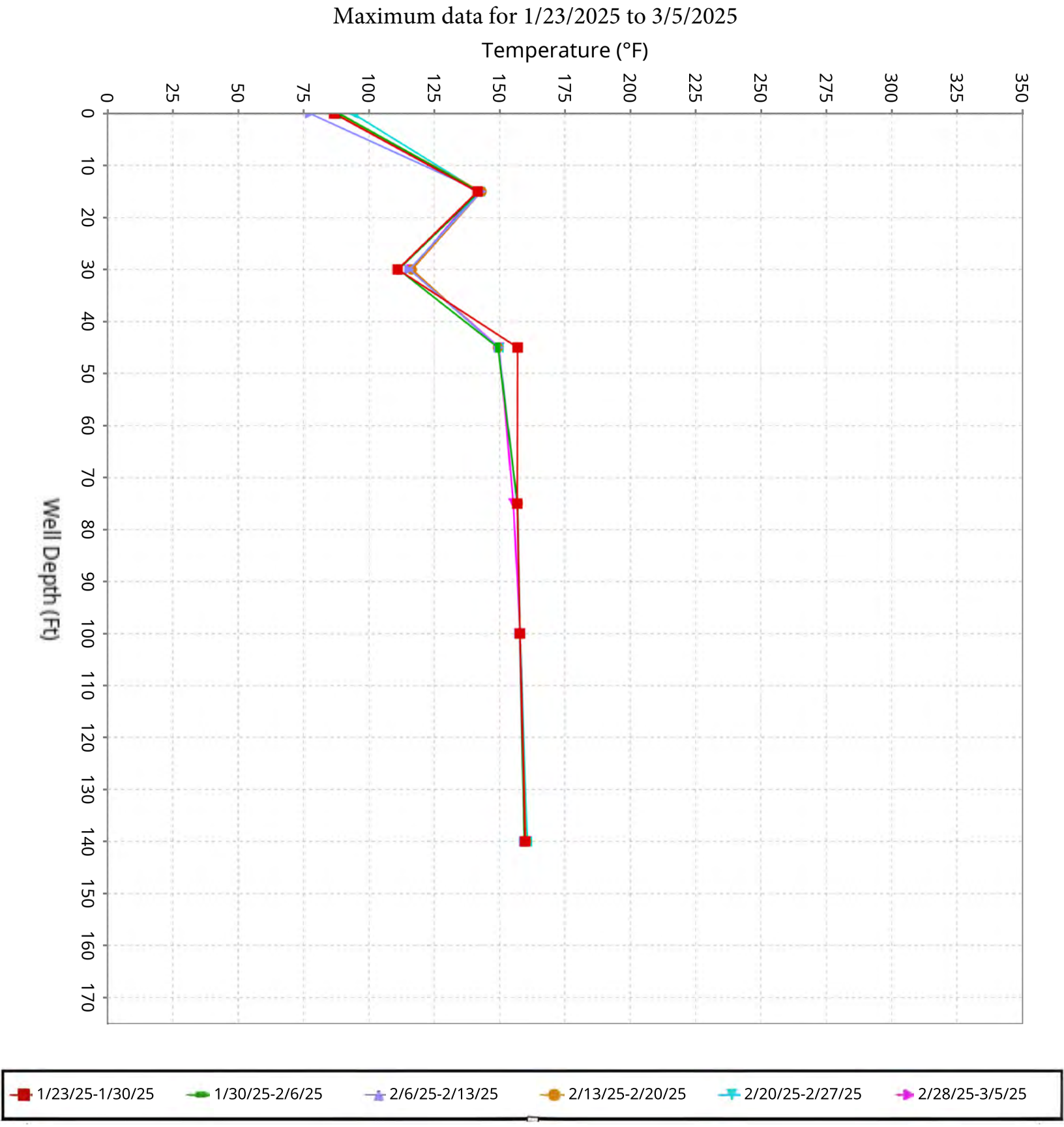
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-12

Maximum data for 1/23/2025 to 3/5/2025



SCS ENGINEERS

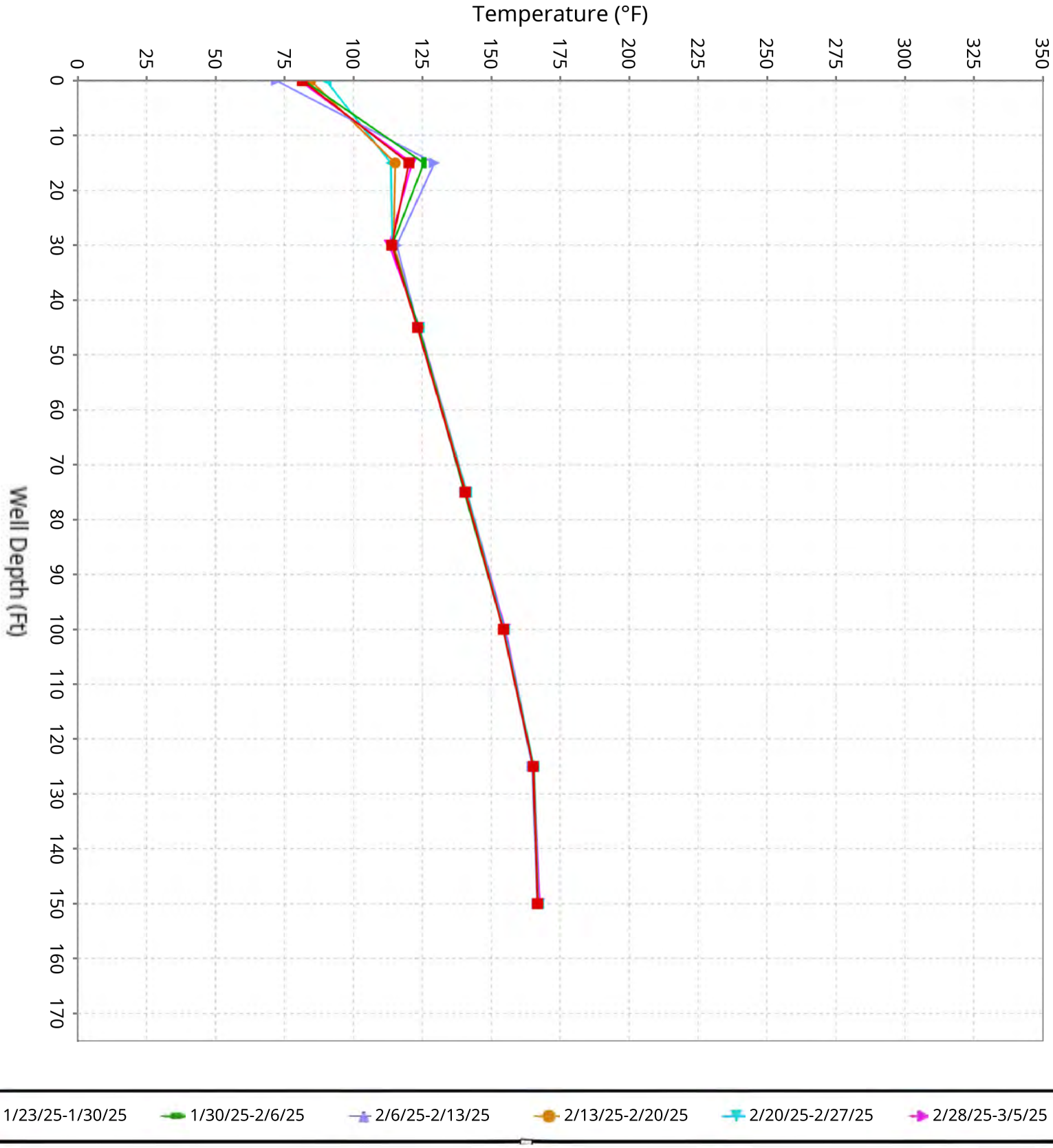
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-13



SCS ENGINEERS

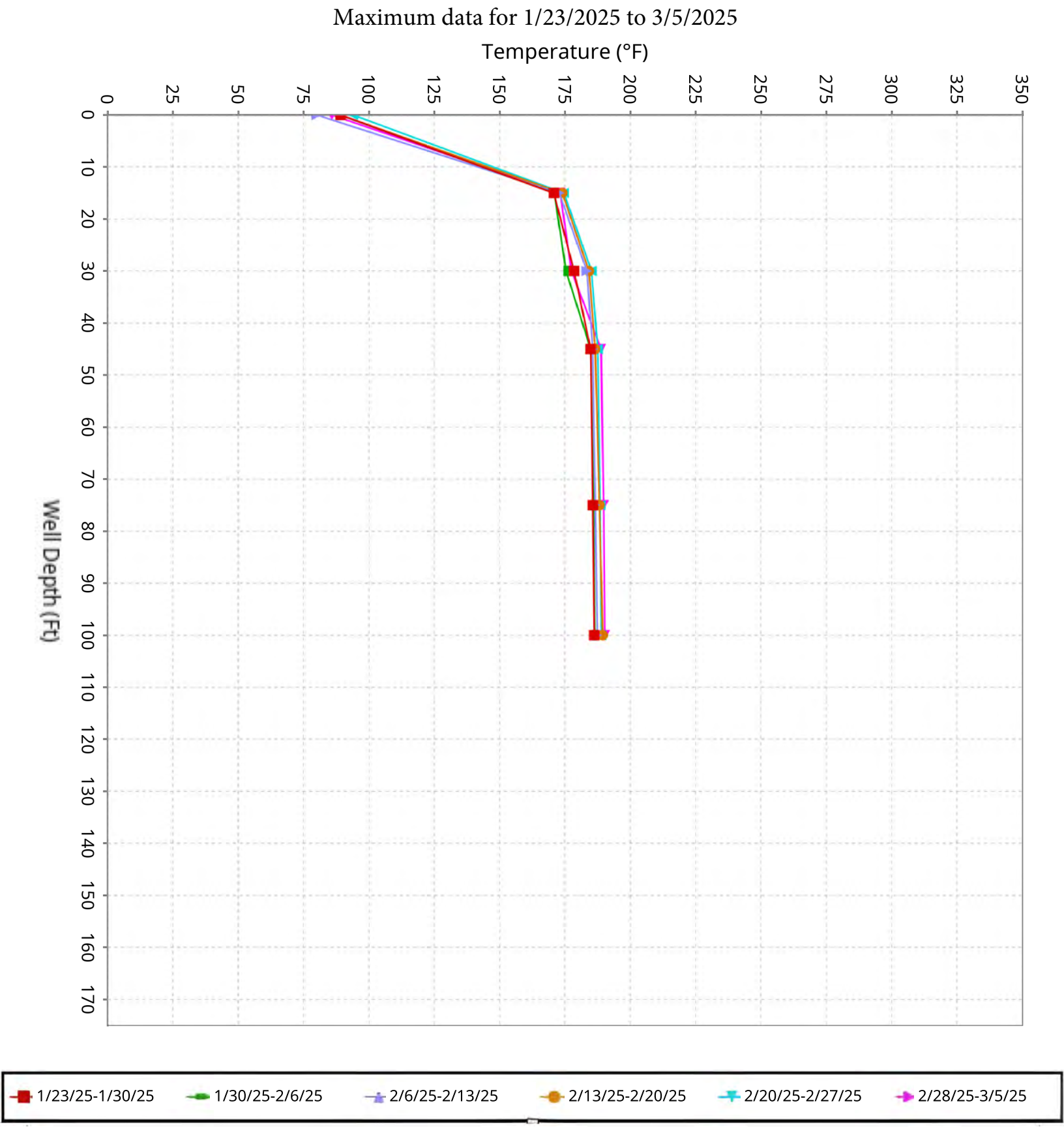
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-14

Maximum data for 1/23/2025 to 3/5/2025



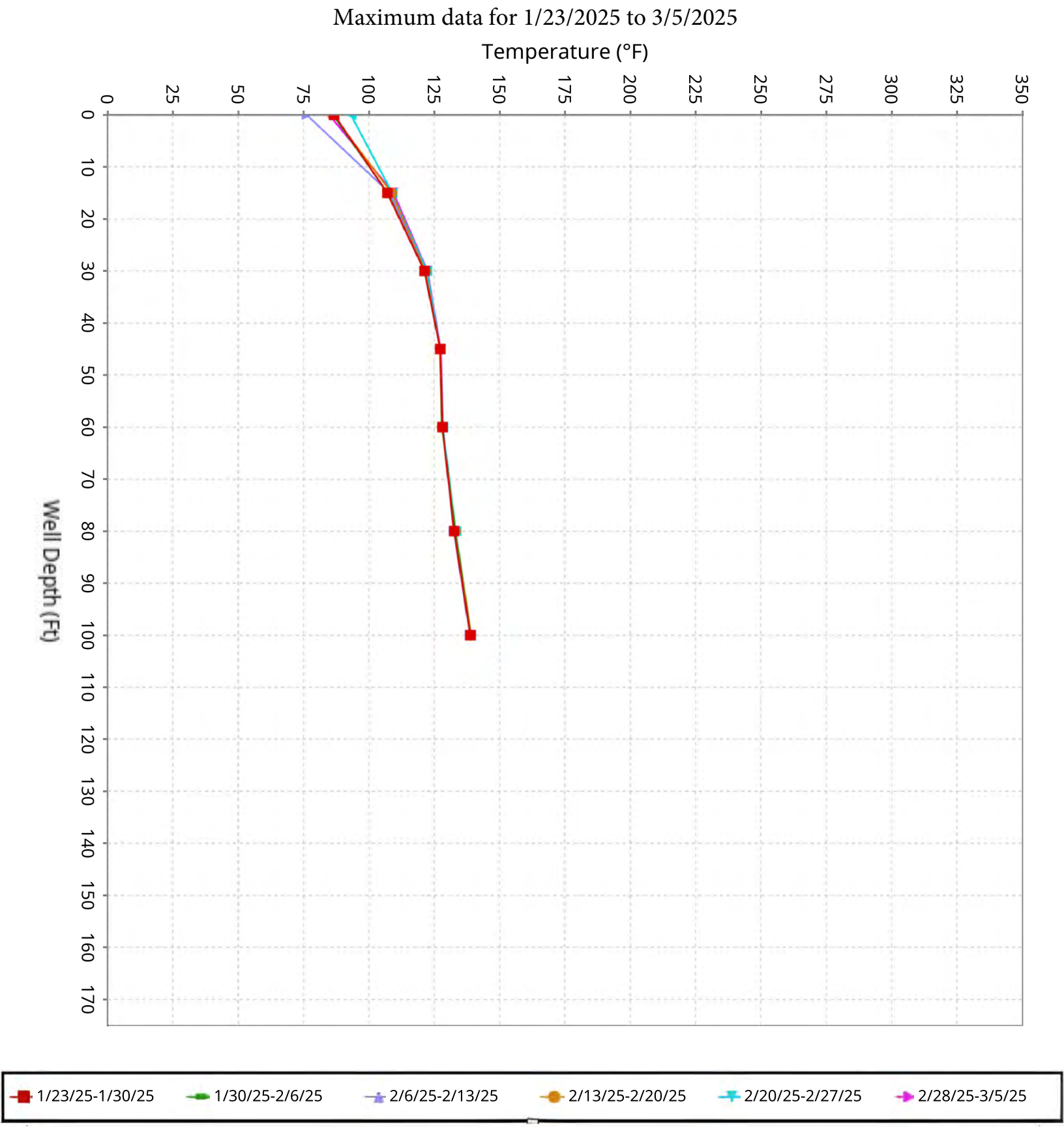
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-15



SCS ENGINEERS

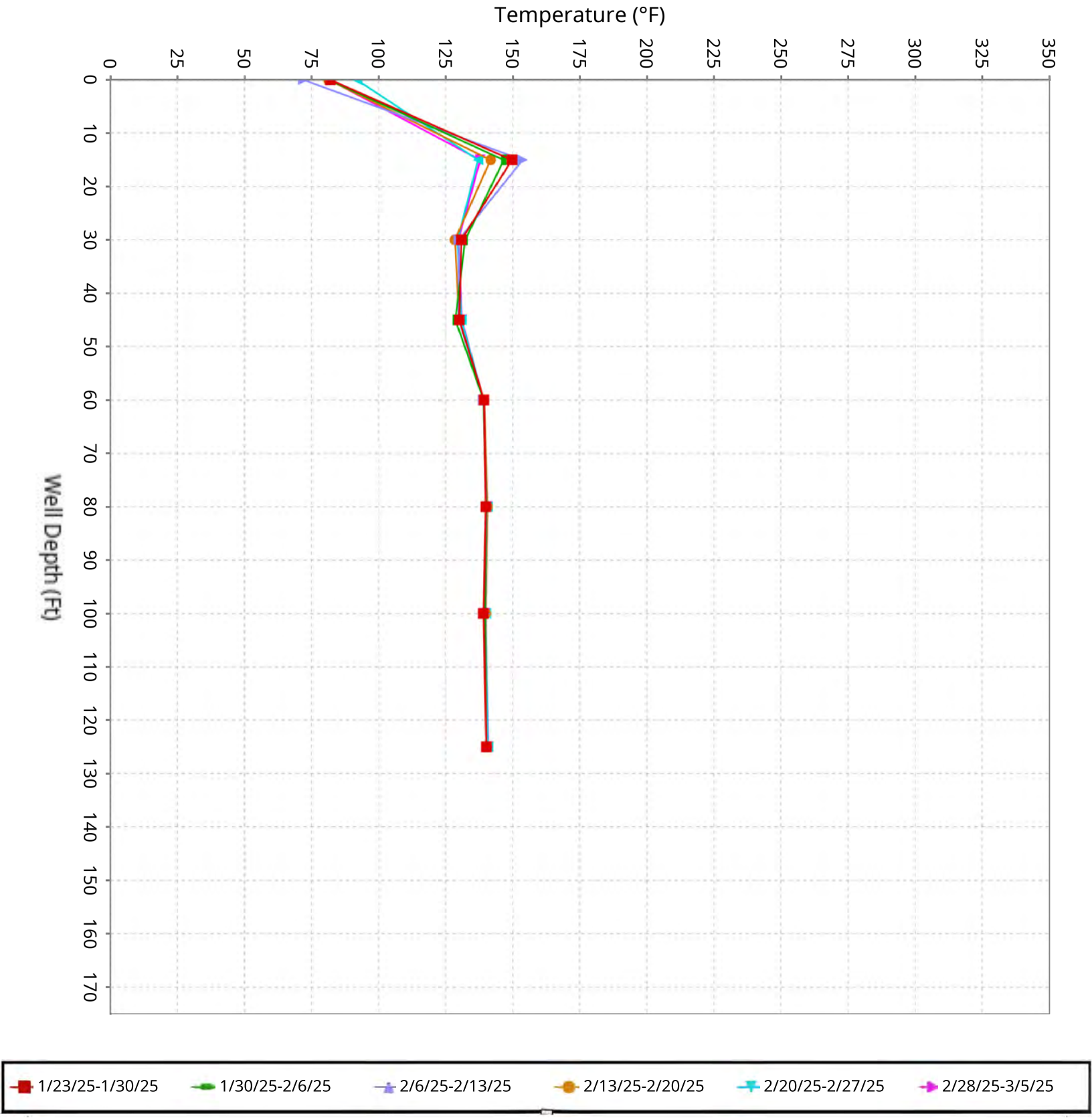
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-16



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-17

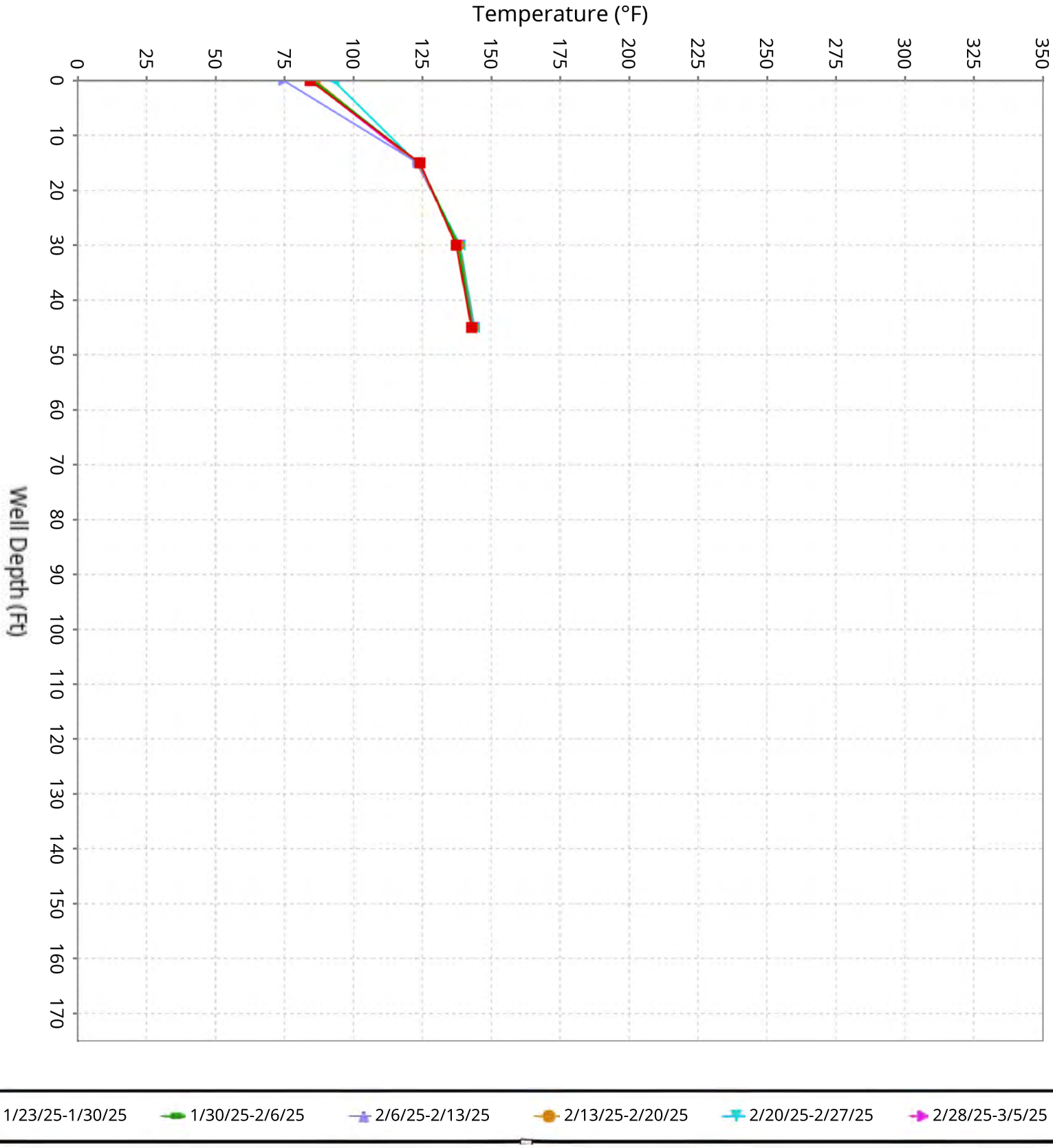
Maximum data for 1/23/2025 to 3/5/2025



SCS ENGINEERS

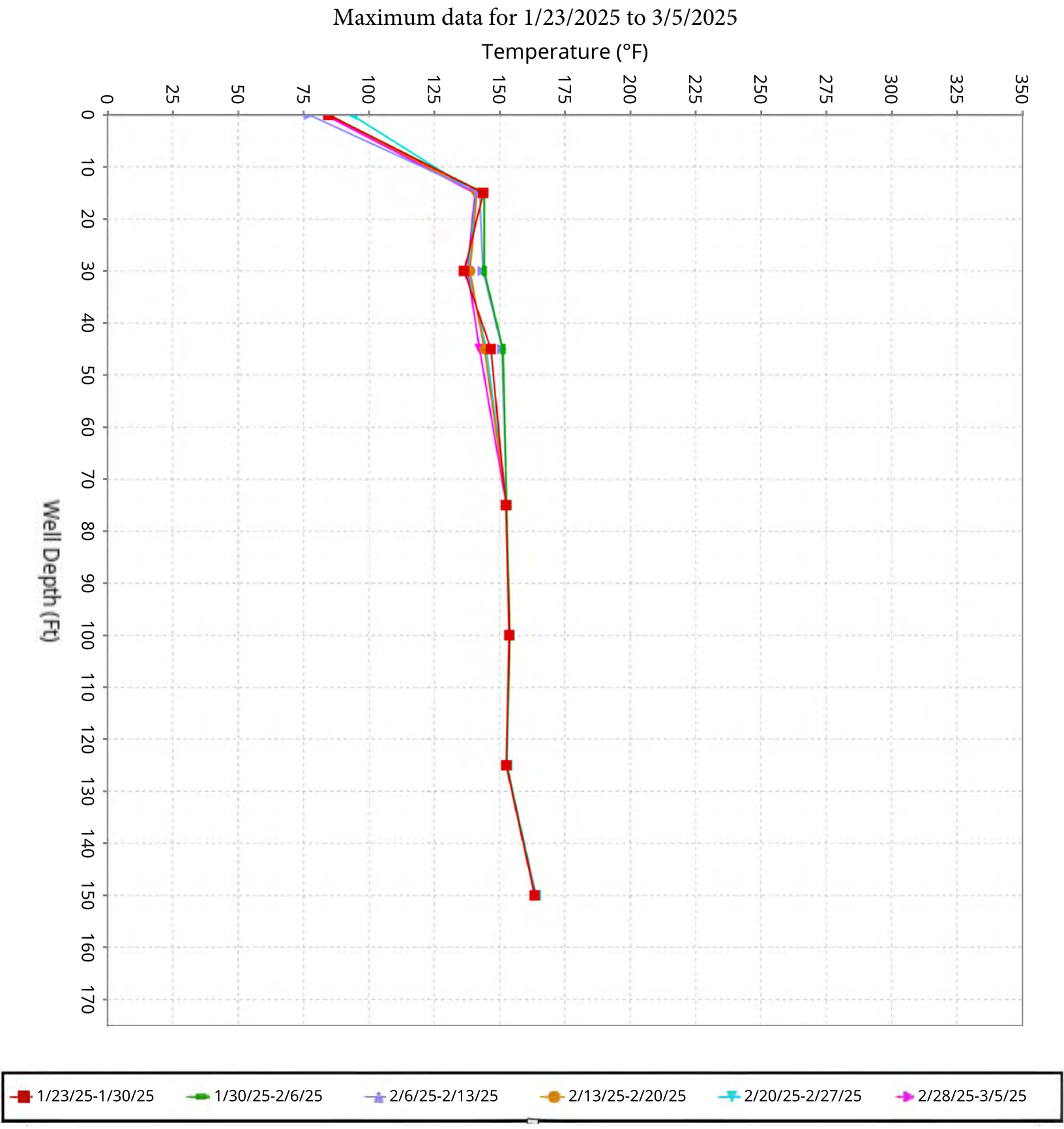
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-18

Maximum data for 1/23/2025 to 3/5/2025



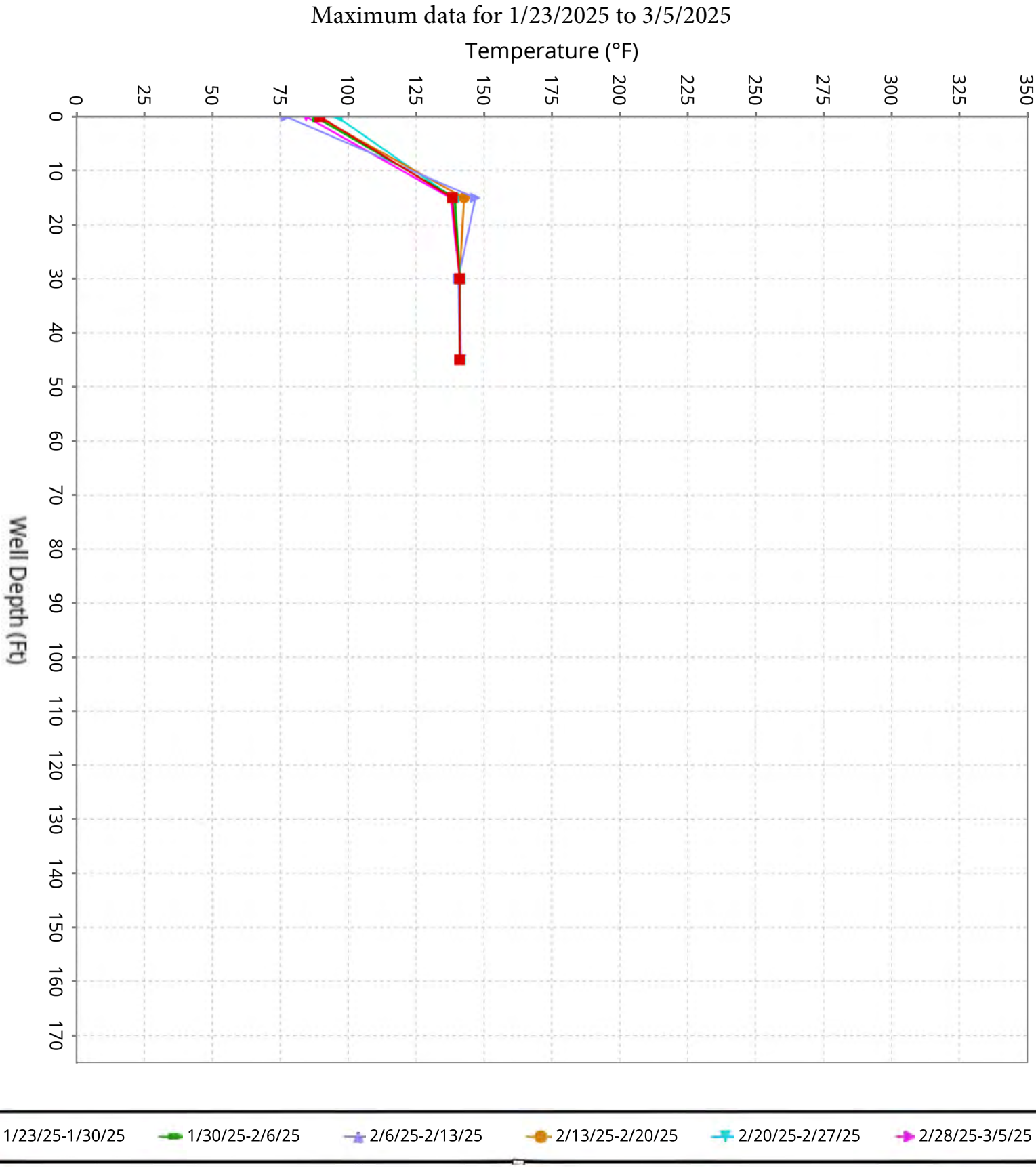
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-19



SCS ENGINEERS

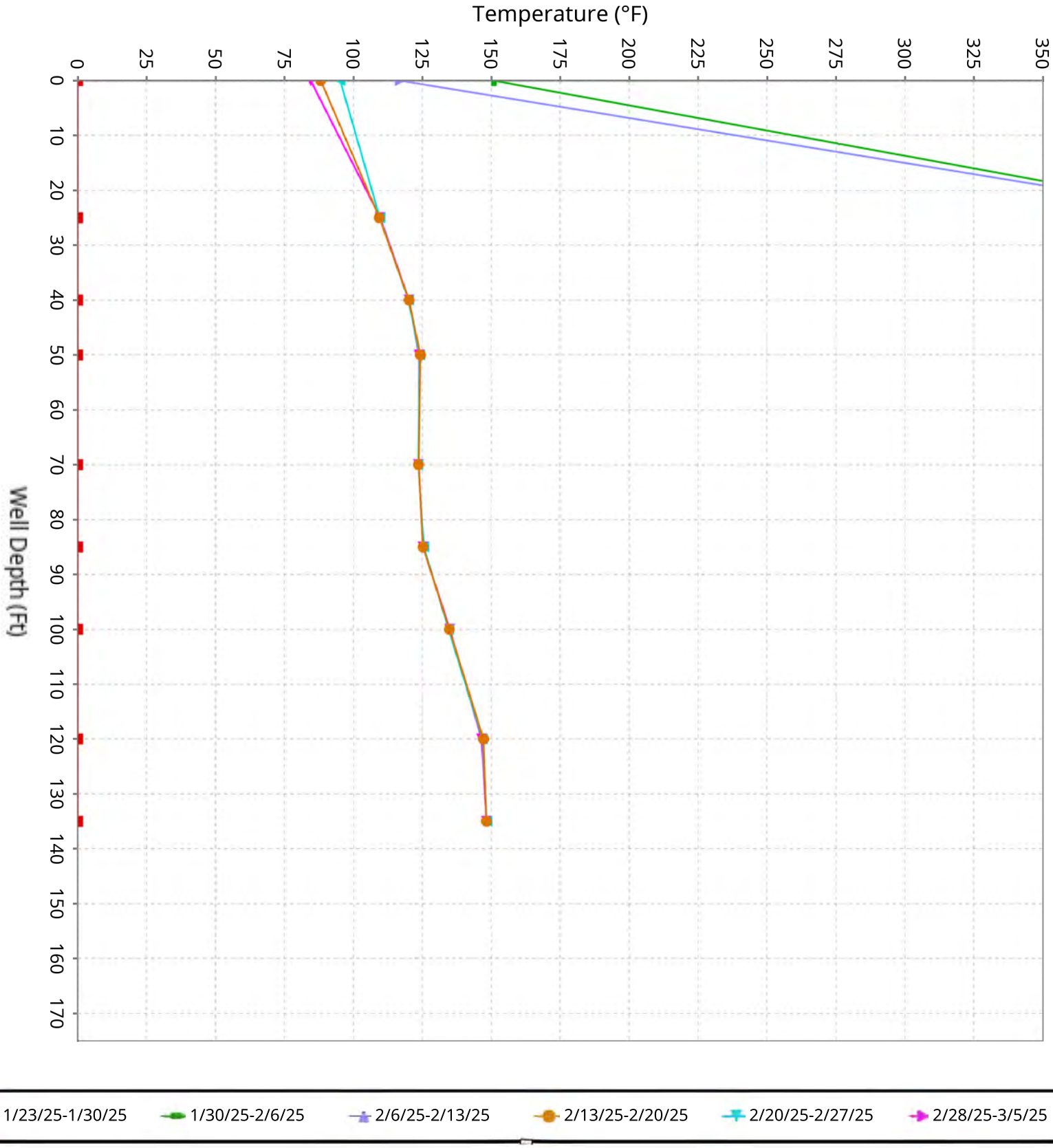
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-20



SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-25

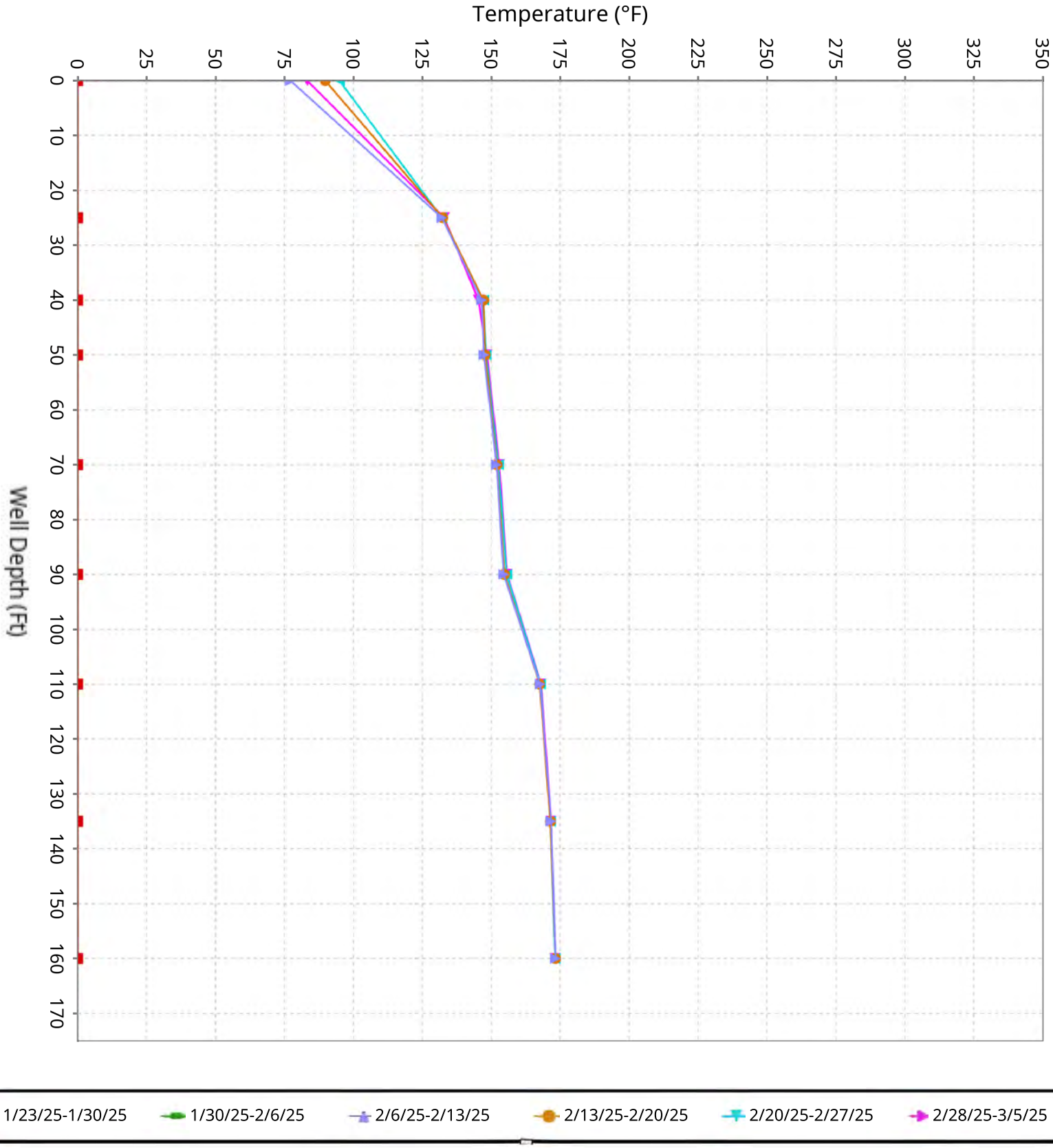
Maximum data for 1/23/2025 to 3/5/2025



SCS ENGINEERS

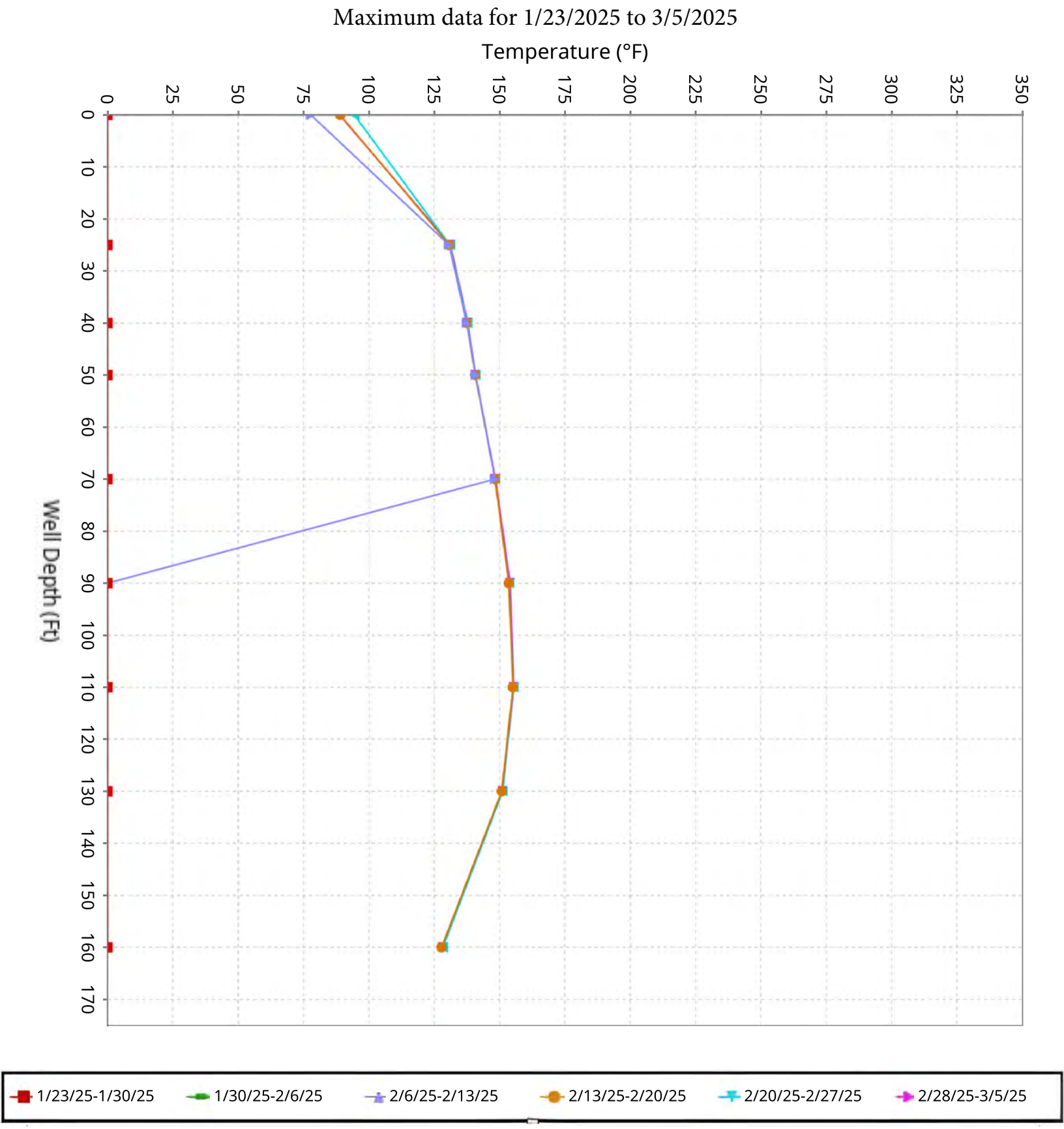
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-26

Maximum data for 1/23/2025 to 3/5/2025



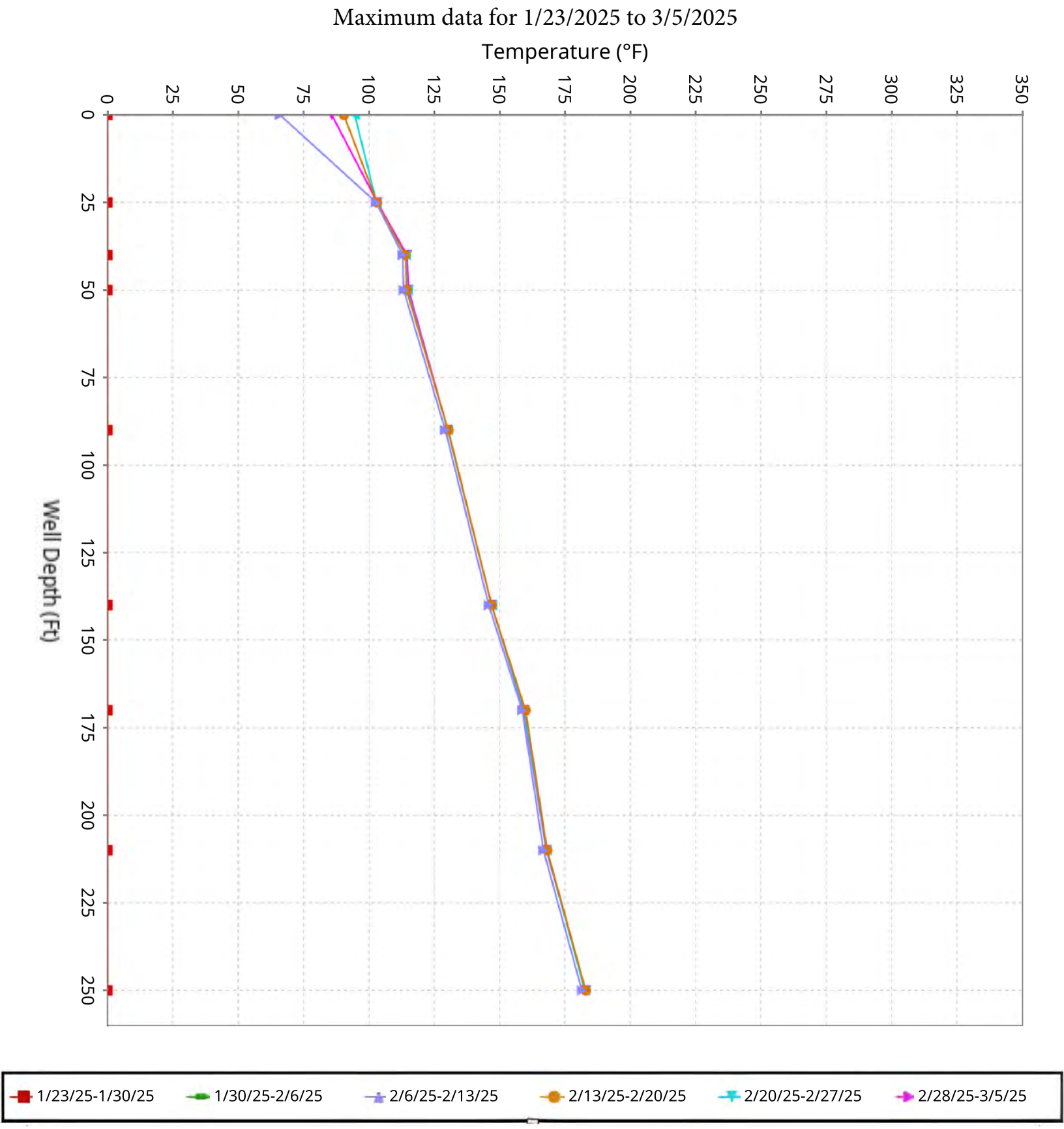
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-27



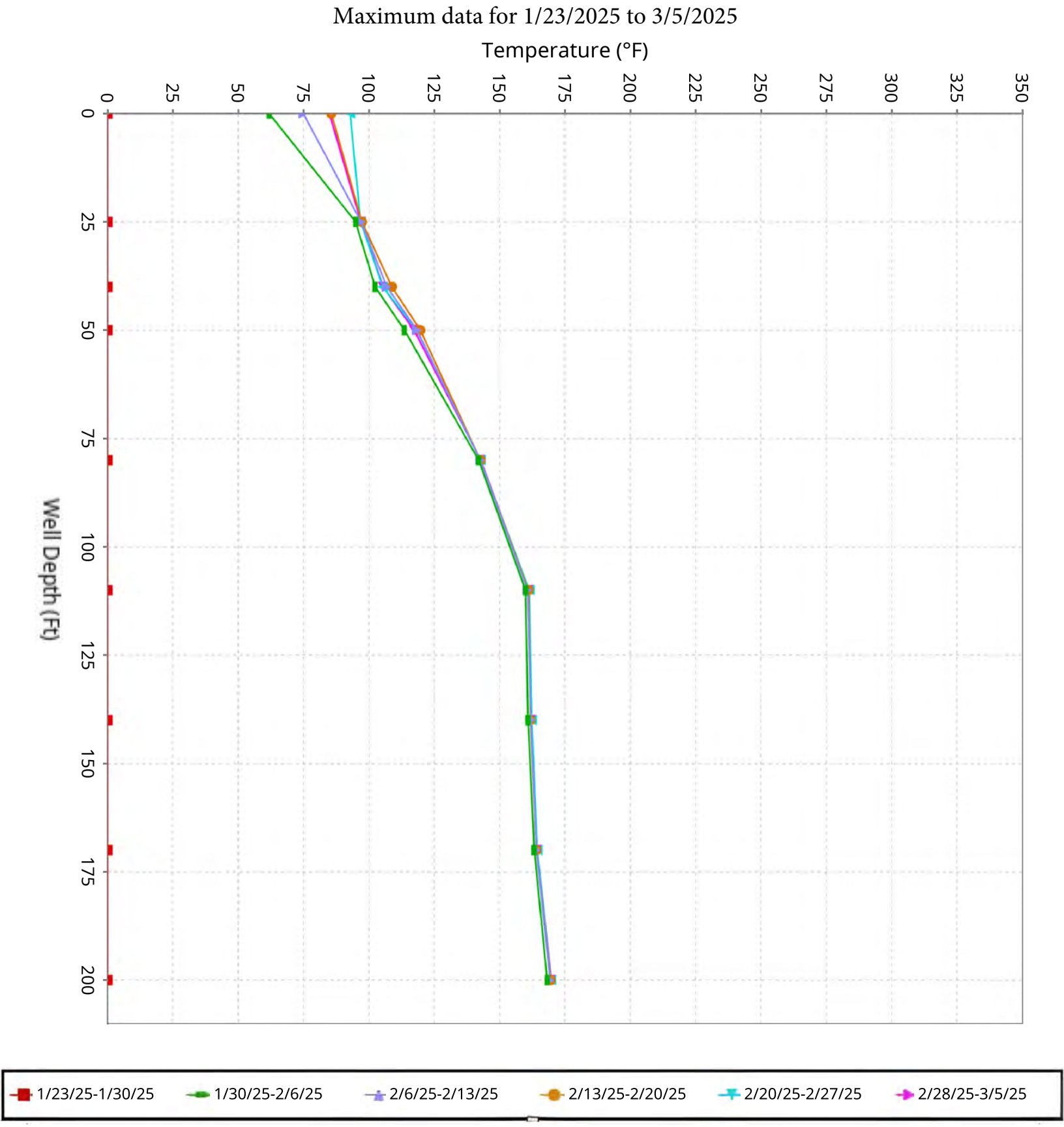
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-29



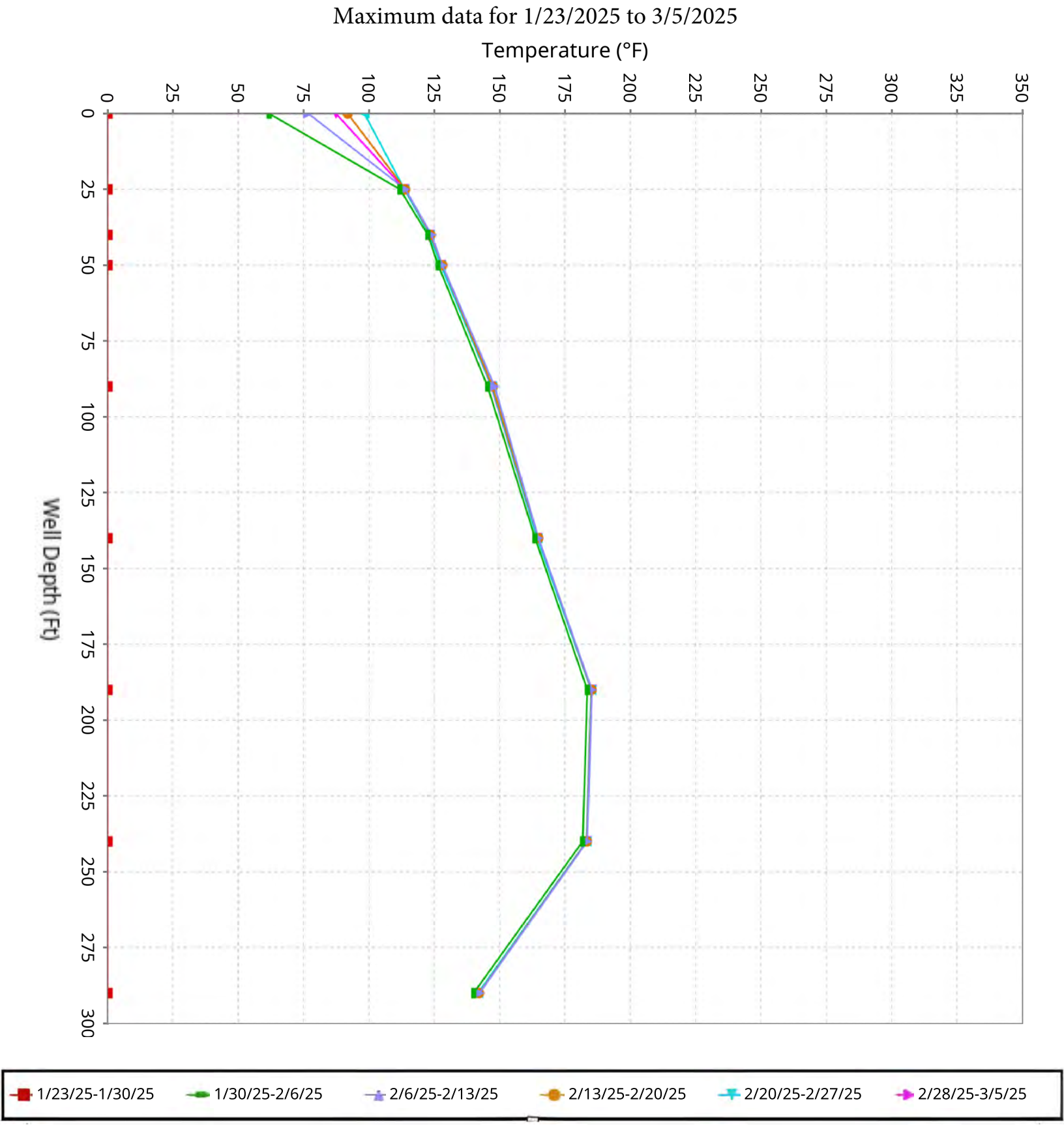
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-30



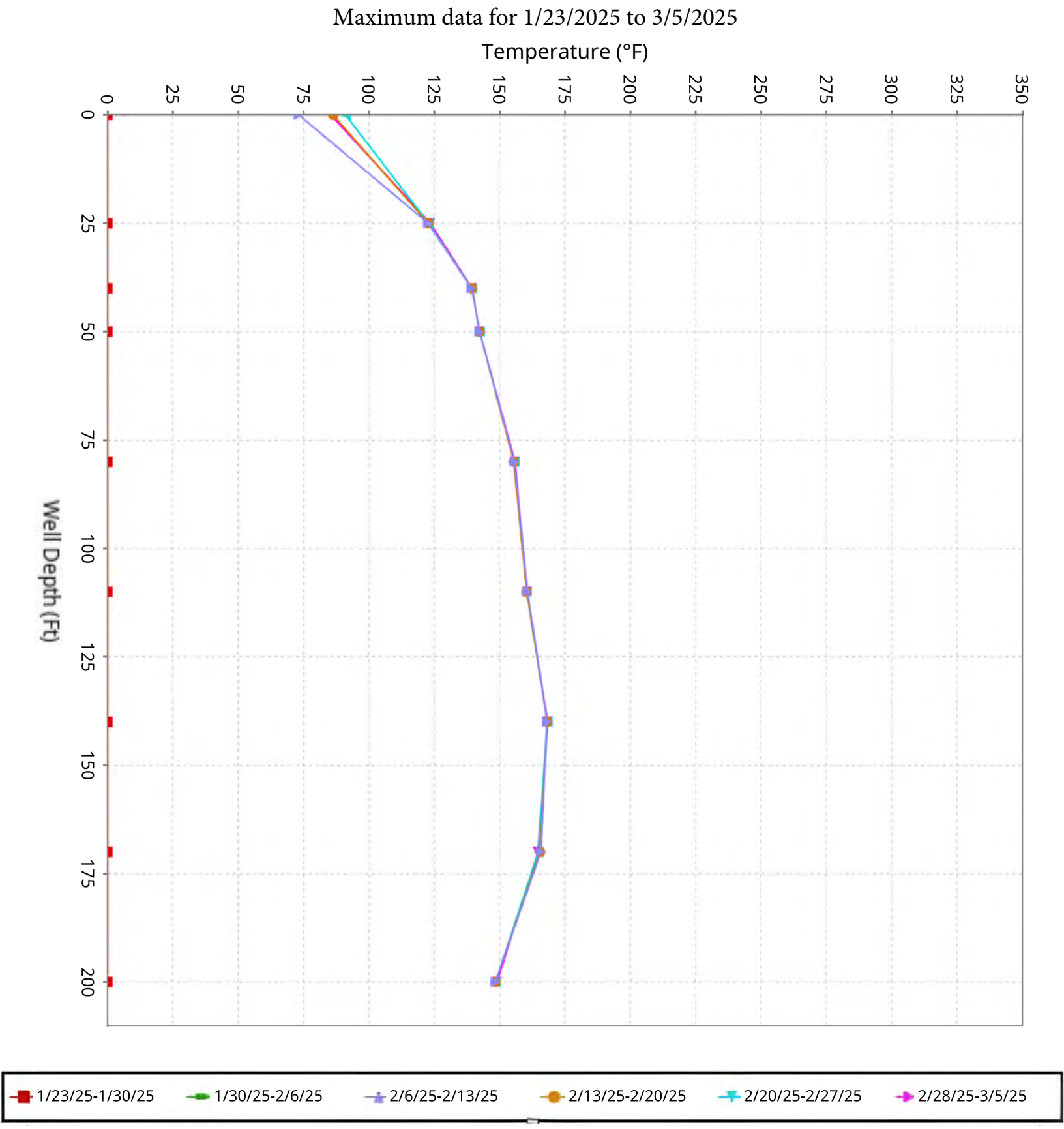
SCS ENGINEERS

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-31



SCS ENGINEERS

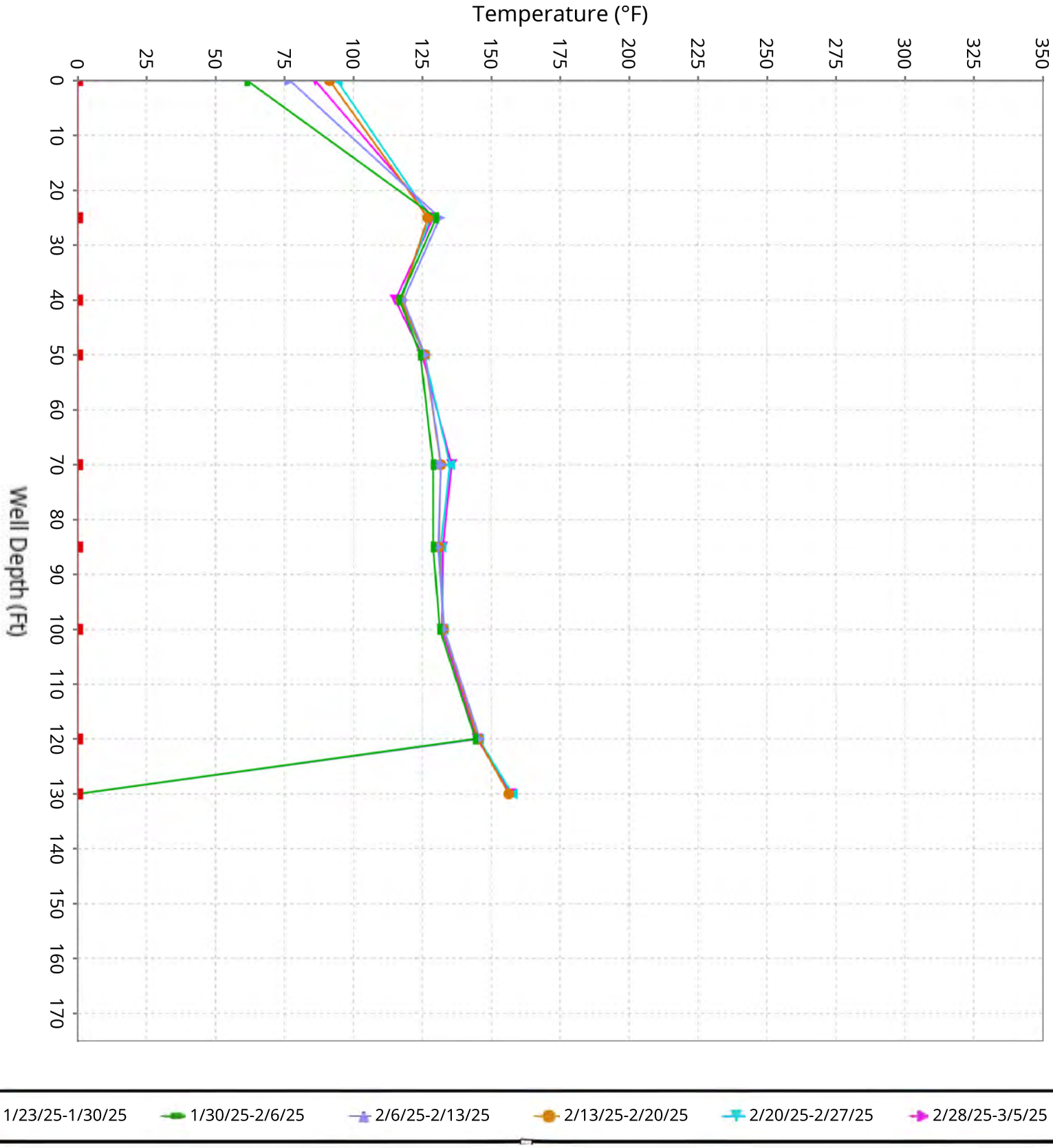
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-32



SCS ENGINEERS

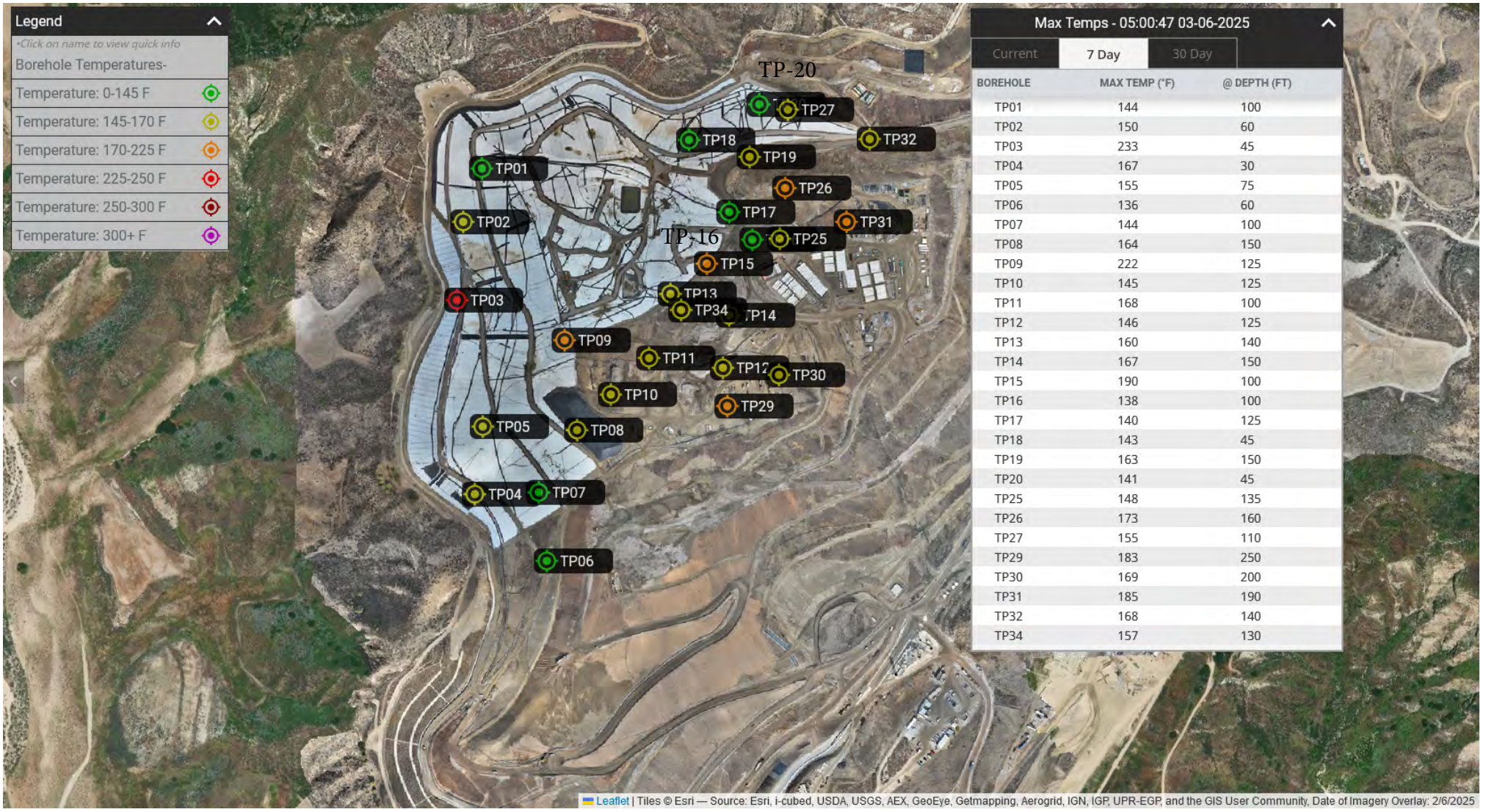
Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill for TP-34

Maximum data for 1/23/2025 to 3/5/2025



SCS ENGINEERS

Maximum Vertical Temperature Map from Temperature Probes at Chiquita Landfill

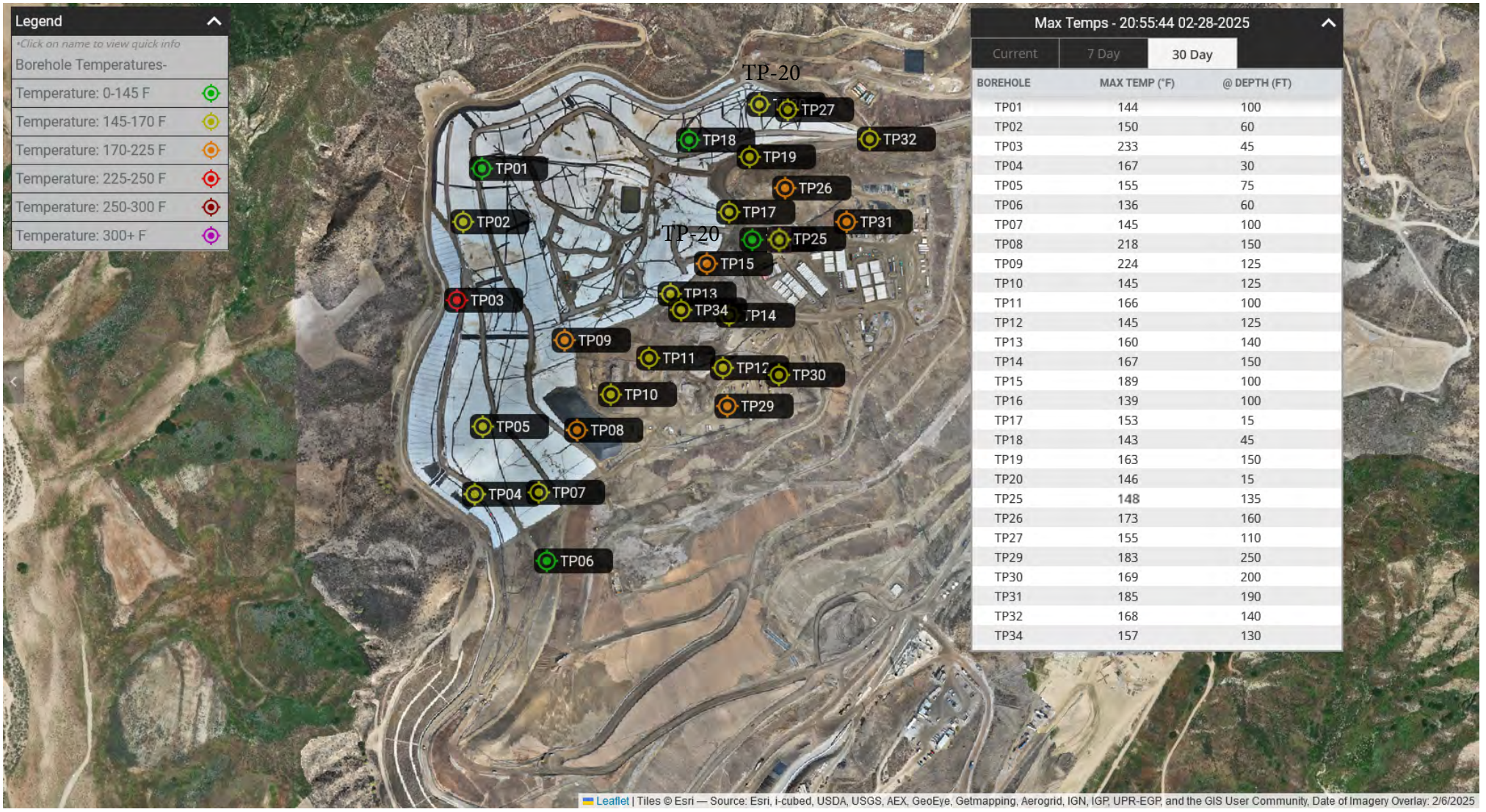


Max Temps - 05:00:47 03-06-2025

Current | 7 Day | 30 Day

BOREHOLE	MAX TEMP (°F)	@ DEPTH (FT)
TP01	144	100
TP02	150	60
TP03	233	45
TP04	167	30
TP05	155	75
TP06	136	60
TP07	144	100
TP08	164	150
TP09	222	125
TP10	145	125
TP11	168	100
TP12	146	125
TP13	160	140
TP14	167	150
TP15	190	100
TP16	138	100
TP17	140	125
TP18	143	45
TP19	163	150
TP20	141	45
TP25	148	135
TP26	173	160
TP27	155	110
TP29	183	250
TP30	169	200
TP31	185	190
TP32	168	140
TP34	157	130

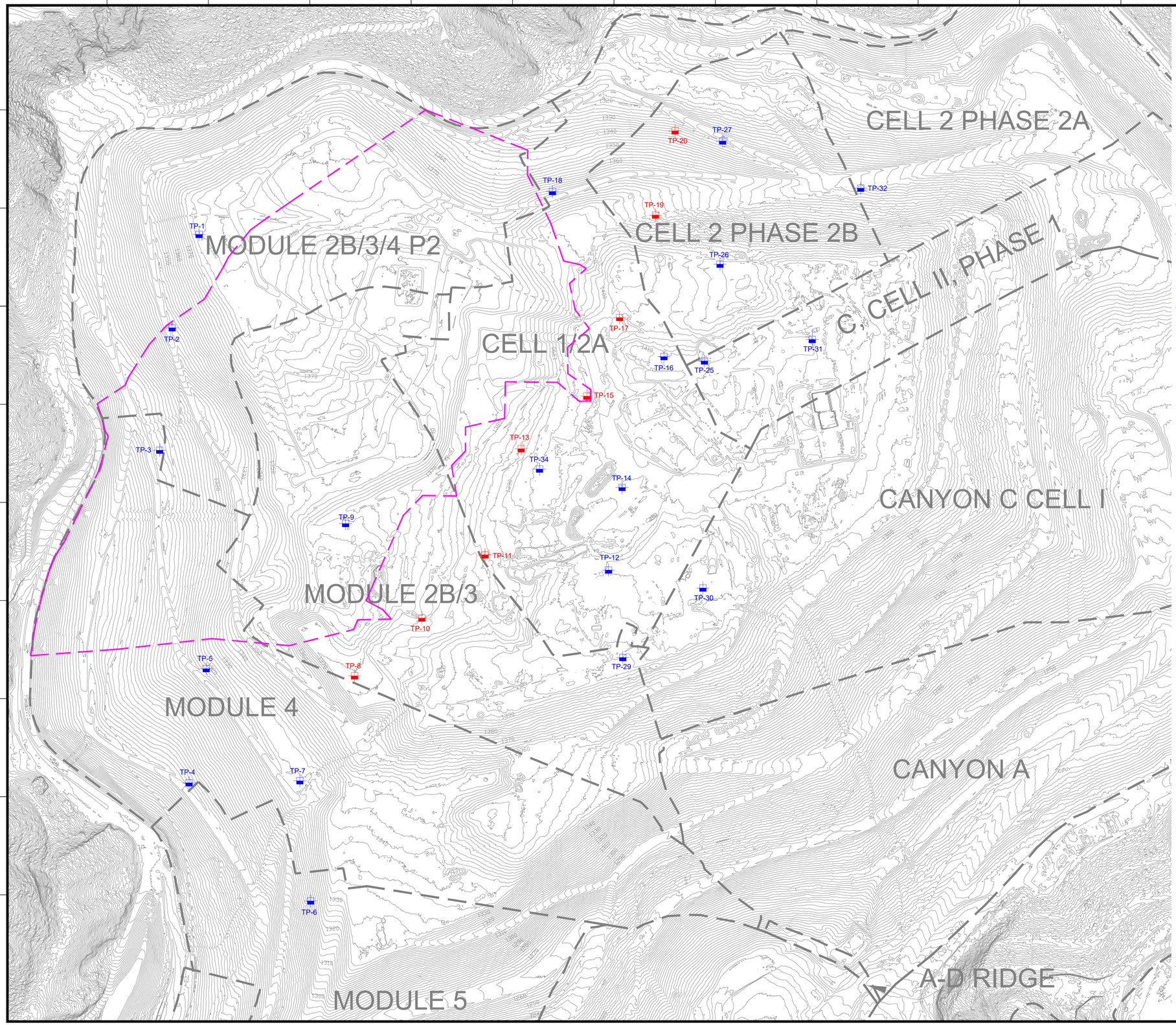
Thirty Day Maximum Vertical Temperature Map from Temperature Probes at Chiquita Landfill



Max Temps - 20:55:44 02-28-2025

Current | 7 Day | 30 Day

BOREHOLE	MAX TEMP (°F)	@ DEPTH (FT)
TP01	144	100
TP02	150	60
TP03	233	45
TP04	167	30
TP05	155	75
TP06	136	60
TP07	145	100
TP08	218	150
TP09	224	125
TP10	145	125
TP11	166	100
TP12	145	125
TP13	160	140
TP14	167	150
TP15	189	100
TP16	139	100
TP17	153	15
TP18	143	45
TP19	163	150
TP20	146	15
TP25	148	135
TP26	173	160
TP27	155	110
TP29	183	250
TP30	169	200
TP31	185	190
TP32	168	140
TP34	157	130



N

GRAPHIC SCALE

130 65 0 130 260 390

SCALE: 1"=130'

LEGEND

- 1150 — EXISTING TOPOGRAPHIC CONTOUR
- EXISTING CELL LIMITS (APPROXIMATE)
- TP-XX — INSTALLED TEMPERATURE PROBES - STANDALONE
- TP-XX — INSTALLED TEMPERATURE PROBES - INSTALLED WITHIN WELL CASING
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW

GENERAL DRAWING NOTES:

1. EXISTING TOPOGRAPHIC SURVEY INFORMATION SHOWN WAS PROVIDED BY PROPELLER. AERIAL PHOTOGRAPHY DATED FEBRUARY 06, 2025.
2. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.

NO.	REVISION	DATE

SHEET TITLE: TEMPERATURE PROBE INSTALLATION MAP

PROJECT TITLE: TEMPERATURE PROBE INSTALLATION PROJECT
CHIQUITA CANYON LANDFILL
CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL
CASTAIC, CALIFORNIA

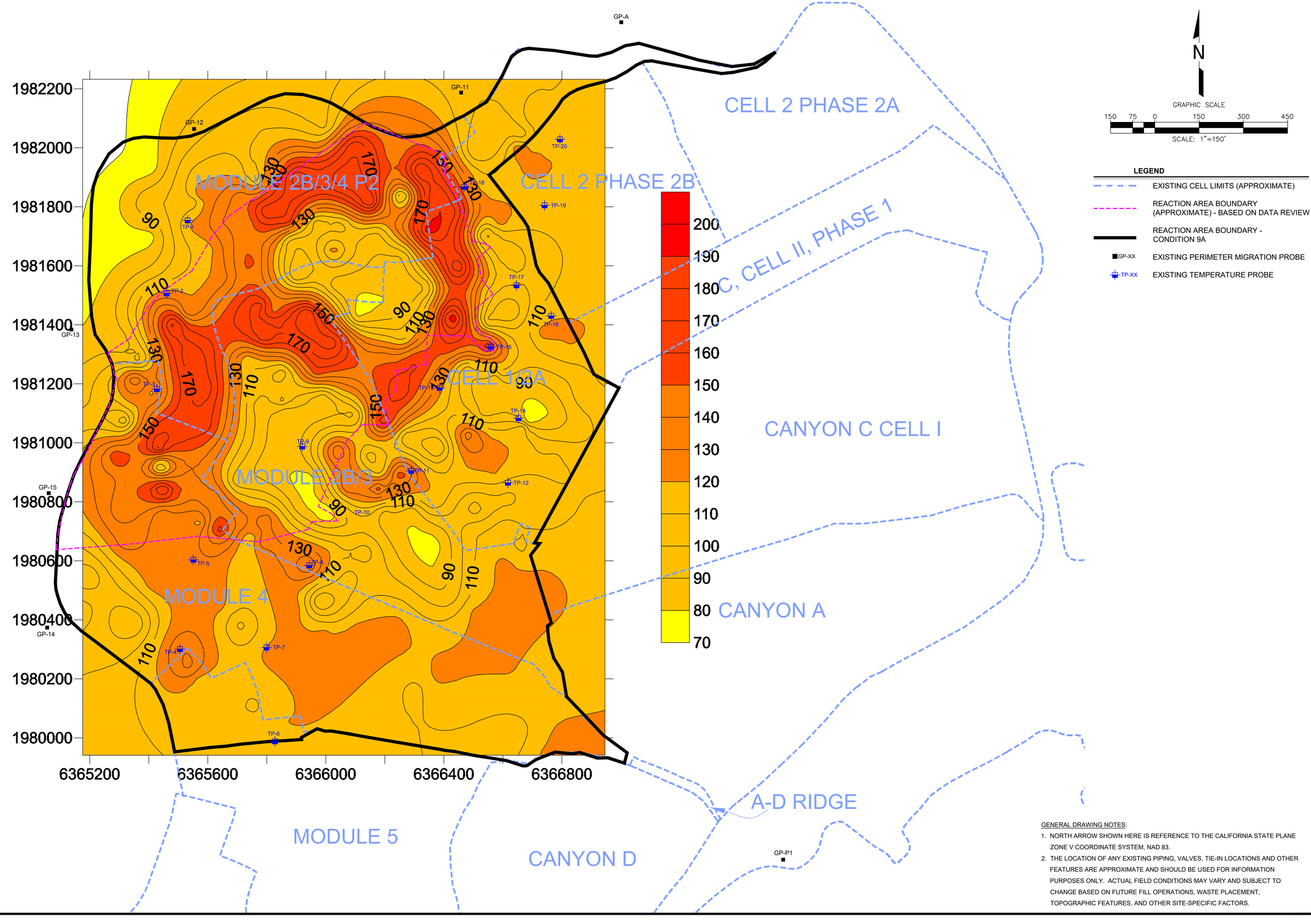
SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
SAN DIEGO, CA 92123
(858) 571-3500 FAX: (562) 427-0805

DSN. BY:	PROJ. NO.	DWN. BY:	CHK. BY:	APP. BY:	ACAD FILE:
JH/SRM	01204123.41	SRM	JH/WCH	WCH	ENGINEERS

DATE: 02/20/2025

SCALE: AS SHOWN

SHEET: 1



N

GRAPHIC SCALE

150 75 0 150 300 450

SCALE: 1"=150'

LEGEND

- EXISTING CELL LIMITS (APPROXIMATE)
- REACTION AREA BOUNDARY (APPROXIMATE) - BASED ON DATA REVIEW
- REACTION AREA BOUNDARY - CONDITION 9A
- GP-XX EXISTING PERIMETER MIGRATION PROBE
- TP-XX EXISTING TEMPERATURE PROBE

GENERAL DRAWING NOTES:

1. NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
2. THE LOCATION OF ANY EXISTING PIPING, VALVES, TIE-IN LOCATIONS AND OTHER FEATURES ARE APPROXIMATE AND SHOULD BE USED FOR INFORMATION PURPOSES ONLY. ACTUAL FIELD CONDITIONS MAY VARY AND SUBJECT TO CHANGE BASED ON FUTURE FILL OPERATIONS, WASTE PLACEMENT, TOPOGRAPHIC FEATURES, AND OTHER SITE-SPECIFIC FACTORS.

DATE | REVISION | NO.

SHEET TITLE: ISOTHERMAL GRADIENT MAP MARCH 2025

PROJECT TITLE: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

CLIENT: CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS
8799 BALBOA AVENUE SUITE 290
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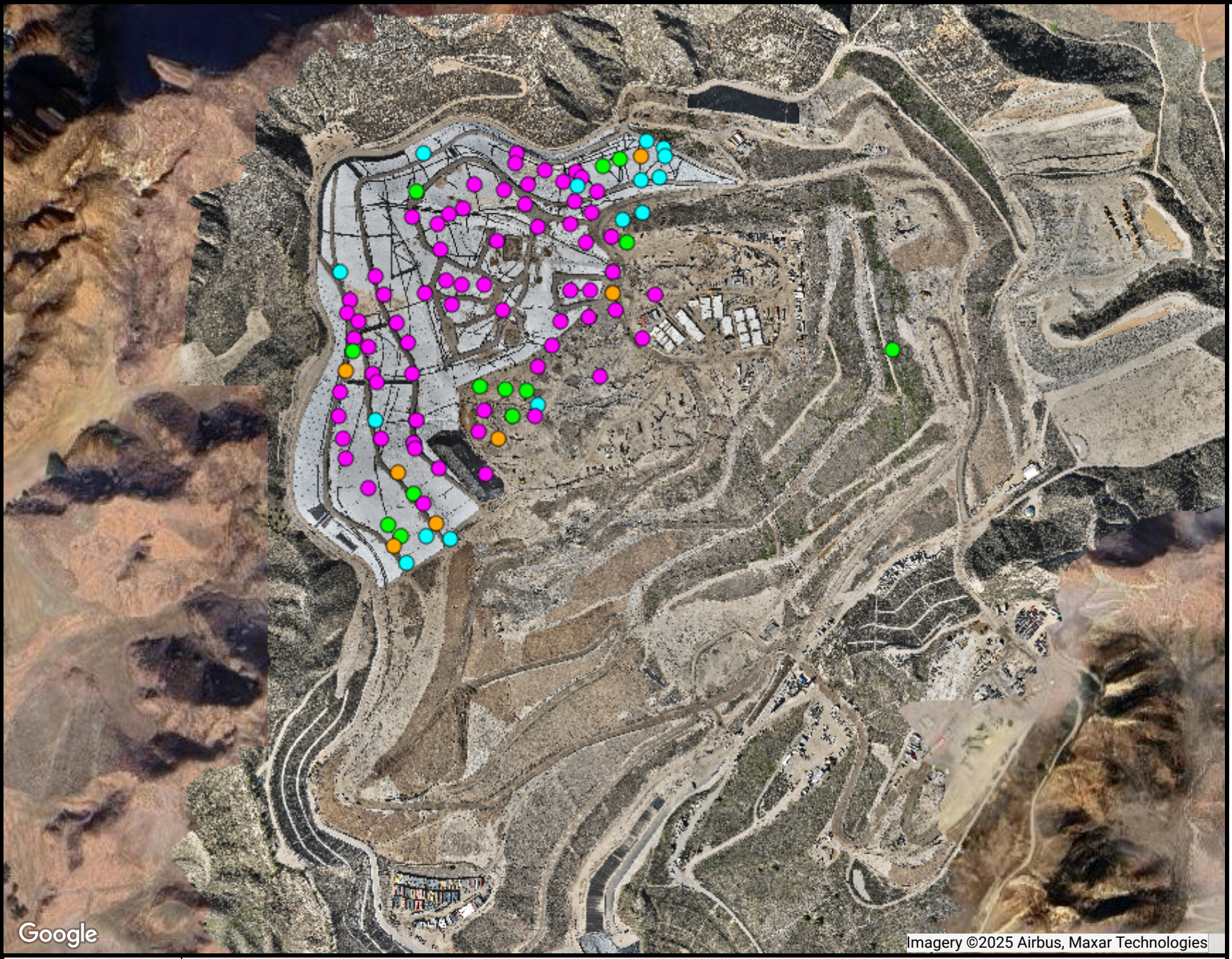
ACAD FILE: -
APP. BY: -
DWN. BY: ETG
CHK. BY: -
PROJ. NO. 01204123.41
DSN. BY: -

DATE: 03/04/2025

SCALE: AS SHOWN

SHEET: 1



Ranges Mapped

				# Points
>=	0	and <	100	16
>=	100	and <	500	13
>=	500	and <	1000	7
>=	1000	and <	1000000	67

Point Type Legend

well

N

SCSeTools

Chiquita Canyon Landfill

Range Map

Parameter: CO (mid range)

Analysis Method: Average

Date Range: 02/01/2025 - 02/28/2025

Map generation date : 03/08/2025

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT H TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

Chiquita Canyon, LLC
Reaction Committee & SCAQMD Staff Monthly Meeting
Tuesday, August 27, 2024 at 3:00 pm PT

AGENDA

I. Leachate & Landfill Gas Updates
   Presentation Leaders – Neal Bolton, PE & Bob Dick, PE, BCEE

II. Public Health
   Presentation Leaders – Dr. Pablo Sanchez-Soria & Dr. Rick Pleus

III. Reaction Area (e.g., temperatures, settlement)
   Presentation Leader – Bob Dick, PE, BCEE

IV. Air Monitoring Updates & Permitting
   Presentation Leader – Pat Sullivan, BCES, CPP, REPA

MEETING SUMMARY

Attendees: *Reaction Committee, SCS & Chiquita—Neal Bolton, Bob Dick, Rick Pleus, Pablo Sanchez-Soria, Pat Sullivan, Bill Haley, Leigh Barton*

South Coast Air Quality Management District (SCAQMD)—Kathryn Roberts, Mary Reichert, Chris Chen, Nate Dickel, Lizabeth Gomez, Larry Israel, John Anderson, Jason Aspell, Ryan Mansell, Andrea Polidori, Amanda Sanders, Angela Shibata

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I. Leachate & Landfill Gas Updates

a. Mr. Bolton presented on the status and locations of leachate seeps observed and reported onsite since the last meeting. Mr. Bolton also provided an overview of the progress of the installation of the geosynthetic cover as well as an update on the west slope excavation project.

b. Mr. Dick provided the dewatering system updates for Ms. Viswanathan. Mr. Dick described the current status of the installation of dewatering pumps, explaining why there are more pumps installed than currently operational. He also provided an overview of the progress on well drilling and installation for the month of August, noting that there is now only one drill rig onsite, and that there is a lot of related equipment, such as header pipes, that are also being prepared for installation and commissioning. Mr. Dick and Mr. Haley both led a further discussion on these installation activities and how they will assist CCL in addressing the reaction.

II. Public Health (health study)

a. Dr. Sanchez-Soria provided an overview of the CTEH-portion of the health impacts report that was submitted on August 1, describing the high-level process and strategy for the 28-day air study which was used as the basis for the report and presenting high-level conclusions that are described in more detail in the report.

b. Dr. Pleus noted that the Intertox-portion of the health impacts report was also submitted on August 1 and that he would be giving his full presentation during the November SCAQMD hearing.

III. Reaction Area (e.g., temperatures, settlement)

a. Mr. Dick led a discussion on the current status of the reaction, focusing especially on recent temperature readings and the July Wellfield Gas Temperature Range Map.

    i. Outstanding Question: Ms. Shibata requested a map of initial temperatures (as opposed to adjusted temperatures).

        1. Response: CCL is working on this map and will provide it to SCAQMD.

IV. Enhanced Air Monitoring & Permitting

a. Mr. Sullivan provided a detailed update on the installation of the new microGC air monitoring stations that are scheduled to be installed in early September. He also reviewed some of the air monitoring data for the primary chemicals of concern, noting that there should be more data to discuss at the next meeting after more of the microGCs have been installed. Finally, he discussed the progress that has been made on the calibration of the hydrogen sulfide and sulfur dioxide sensors.

b. With respect to permitting, Mr. Sullivan noted that he is updating the permitting tracking sheet and briefly discussed some of the most recent applications and communications related to the liquid treatment and gas control systems.

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT I TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

Chiquita Canyon, LLC
Reaction Committee & SCAQMD Staff Monthly Meeting
Thursday, September 26, 2024 at 8:00 am PT

AGENDA

I. Leachate & Landfill Gas Updates
   Presentation Leaders – Neal Bolton, PE

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)
   Presentation Leaders – Dr. Rick Pleus & Pat Sullivan, BCES, CPP, REPA

III. Reaction Area (e.g., temperatures, settlement)
   Presentation Leaders – Bob Dick, PE, BCEE

IV. Permitting
   Presentation Leader – Pat Sullivan, BCES, CPP, REPA

MEETING MINUTES

Attendees: *Reaction Committee, SCS & Chiquita—Neal Bolton, Bob Dick, Bill Haley, Ray Huff, Rick Pleus, Pat Sullivan, Kelli Hackney, Megan Morgan, Leigh Barton*

South Coast Air Quality Management District (SCAQMD)—John Anderson, Chris Chen, Nathaniel Dickel, Stephen Dutz, Lizabeth Gomez, Larry Israel, Ryan Mansell, Mary Reichert, Kathyrn Roberts, Amanda Sanders, Victor Yip

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I. Leachate & Landfill Gas Updates

a. Mr. Bolton summarized the occurrence, location, causation, and subsequent corrective actions associated with leachate seeps and spills that have occurred since the last update. Mr. Bolton also led a discussion on operational issues contributing to the leachate spills, Chiquita's reporting requirements, and Chiquita's efforts to prevent future events.

   i. Outstanding Question: Ms. Roberts inquired whether there are protocols for contractors to receive training on leachate loading and transfer.

      - Response: Yes. Most of the contractors have been onsite before and are familiar with the site and its protocols. When a new person is brought on, they are trained accordingly.

b. Mr. Bolton reported that there has been no change in the size of the area covered by the geosynthetic cover since the August meeting. The geosynthetic cover currently

covers 41.9 acres, and this will not change until the western slope toe drain project is complete. He noted the contractor is accelerating efforts to complete the project, which commenced August 8, 2024.

c. Mr. Haley provided updates on the landfill gas collection and dewatering systems, noting that there is one drill rig onsite drilling wells in Cell 8A that are achieving their targeted depth. Chiquita is delaying the installation of some wells until interference with active working face operations can be avoided. Landfill gas recovery (i.e., flow rates) are averaging approximately 14,000 scfm, which is a substantial increase compared to previous months. Approximately 108 dewatering pumps have been installed in wells and sumps. Approximately 101 of these pumps are operational (not including the sump pumps). Finally, Chiquita is preparing the permit application for Flare 5 and will soon initiate the production of Flare 4.

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)

a. Mr. Pleus noted that he will present on the health impacts study at the November SCAQMD Hearing Board hearing and will defer any additional comments until that point.

b. Mr. Sullivan provided updates on the status of the installation of the new air monitoring stations, announcing that all micro-GCs have been installed, powered, tested, and calibrated. He noted the data recorded by these micro-GCs is available on the website, with the exception of the data from MS-08, which has experienced poor telemetry communications. A satellite uplink has been ordered to resolve the poor signal issue. There have also been other startup issues with several other micro-GCs, which are typical for new equipment. Mr. Sullivan also reported that calibration efforts are ongoing on other pollutant sensors (e.g., methane, hydrogen sulfide, and sulfur dioxide) at the monitoring stations and that completion of a full round of calibration is expected by the end of the month.

    i. Outstanding Question: Mr. Dutz inquired about the anticipated timeline to revise the website.

        1. Response: Chiquita anticipates that the existing webpage will be modified to include SCAQMD's suggested enhancements by October 31, and that the new GIS-based webpage will be ready by November 22.

c. Mr. Sullivan also led a discussion on the volume of recent odor complaints, noting that the data has not demonstrated a corresponding increase in emissions concentrations, but that Chiquita is continuing to investigate.

III. Reaction Area (e.g., temperatures, settlement)

a. Mr. Dick addressed the primary findings and conclusions presented in the Reaction Area Boundary Determination submitted on September 7, 2024. The topics included temperate values recorded in the in-situ waste temperature probes, temperatures and gas composition values measured in the landfill gas wellheads, and the recent slight adjustment to the delineated (data-driven) boundary. Mr. Dick also noted that Chiquita is reviewing the September 24, 2024 correspondence from the Local Enforcement Agency and CalRecycle related to the boundaries of the reaction area and is preparing a response.

IV. Permitting

a. Mr. Sullivan provided updates on the various permitting efforts, including the proposed applications that are due in October. Mr. Sullivan also provided a status update on a couple outstanding requests for additional information.

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT J TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

Chiquita Canyon Landfill, LLC
Reaction Committee & SCAQMD Staff Monthly Meeting
Wednesday, October 23, 2024 at 10:00 am PT

AGENDA

I. Leachate & Landfill Gas Updates
   Presentation Leaders – Neal Bolton, PE

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)
   Presentation Leaders – Pablo Sanchez-Soria, Dr. Rick Pleus & Pat Sullivan, BCES, CPP, REPA

III. Reaction Area (e.g., temperatures, settlement)
   Presentation Leaders – Bob Dick, PE, BCEE

IV. Permitting
   Presentation Leader – Pat Sullivan, BCES, CPP, REPA

MEETING MINUTES

Attendees: *Reaction Committee, SCS & Chiquita—Neal Bolton, Bob Dick, Rick Pleus, Pablo Sanchez-Soria, Pat Sullivan, Kelli Hackney, Leigh Barton, Cymone Gosnell*

South Coast Air Quality Management District (SCAQMD)—John Anderson, Jason Aspell, Chris Chen, Nathaniel Dickel, Stephen Dutz, Lizabeth Gomez, Larry Israel, Ryan Mansell, Christina Ojeda, Andrea Polidori, Mary Reichert, Kathyrn Roberts, Amanda Sanders, Angela Shibata, Victor Yip

CalRecycle—Todd Thalhamer

I. Leachate & Landfill Gas Updates

a. Mr. Bolton used a PowerPoint slideshow to summarize the occurrence, location, causation, and subsequent corrective actions associated with leachate seeps and spills that have occurred since the last update, specifically from 9/16 through 10/14. Mr. Bolton also led a discussion on training for leachate leak response and prevention and Chiquita's efforts to prevent future events.

b. Mr. Bolton reported that there has been no change in the size of the area covered by the geosynthetic cover since the August meeting. The geosynthetic cover currently covers 41.9 acres. He noted the presence of a surface stormwater sump depression

and explained the function of this feature. He also provided an update on the western slope toe drain project.

i. **Outstanding Request:** Mr. Mansell inquired about instances of work stoppage being reflected in daily logs. There was extensive discussion on this issue by representatives from multiple parties. SCAQMD requested a log of the exceedances/work stoppage instances and events.

1. **Written Response:** The daily logs contain information on excavation and other related activities. CCL has also been submitting to SCAQMD the air monitoring and field monitoring information in separate submittals once the air monitoring data is received from the laboratory. Attached to this summary is a table of the exceedance events that would trigger the implementation of approved mitigation measures and/or work stoppage if excavation was occurring at those times.

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)

a. Mr. Sanchez-Soria described the efforts being implemented to provide additional air monitoring data to the Castaic Schools Superintendent.

b. Mr. Sullivan provided updates on the status of the installation of the new air monitoring stations using a location map and referring to the tracking matrix. He noted the recent communication disruption caused by a telemetry issue. He also communicated that the anticipated milestone dates related to website upgrades and enhancements are 10/31/24 and, in parallel, the other website developer is scheduled to complete the GIS-based website by 11/22/24.

c. Dr. Pleus noted that he will present on the odor impacts assessment at the November SCAQMD Hearing Board hearing and will defer any additional comments until that point.

i. Mr. Thalhamer asked how many exceedances have been recorded at monitoring stations for other chemical constituents. Mr. Sanchez-Soria provided an explanation of how the monitoring and notification is accomplished, with specific reference to measurements of carbon monoxide (CO) and volatile organic compounds (VOCs). Mr. Sullivan clarified the distinction between air monitoring stations and field monitoring associated with excavation work. There was a subsequent discussion regarding the application of Recommended Exposure Limits (RELs) amongst the participants.

ii. Mr. Dutz and Mr. Polidori initiated a discussion related to the loss of data when power is restored, and specifically regarding reintroduction of data from September for MS-1 through MS-4. Mr. Sullivan noted that the SOFA requires review of atypical incidents and reporting on a semi-annual basis; however, SCS is reviewing potential correlations and establishing protocols for this analysis.

iii. Mr. Dutz asked about the timeframe and data inputs related to the Odor Impact Report. Mr. Pleus explained the timeframes involved in the study and expanded upon the use of the Nasal Ranger and data characteristics. Mr.

Dutz proceeded to inquire about the frequency of surveillance and comment on the evolution of the odor situation.

iv. Ms. Gomez requested further clarification on odor characterization and Mr. Dutz asked whether the analyses being performed are suitable for chemicals that may be causing odors. Mr. Thalhamer noted that terpenes are a class of chemicals that may be contributing odors.

III. Reaction Area (e.g., temperatures, settlement)

a. Mr. Dick addressed the primary findings and conclusions presented in the Reaction Area Boundary Determination submitted on October 7, 2024. The topics included temperature values recorded in the in-situ waste temperature probes, temperatures and gas composition values measured in the landfill gas wellheads, and the consistency of the delineated (data-driven) boundary. Mr. Dick commented on the progress being achieved related to heat extraction, specifically the increase in LFG flowrate measured during September and the increase in LFG wellfield dewatering pumps.

   i. Ms. Gomez requested that the monthly determinations provide additional visualization exhibits for data of other criteria parameters, in addition to the temperature recorded at various depth intervals at the temperature monitoring probes.

IV. Permitting

a. Mr. Sullivan provided updates on the various permitting efforts, utilizing the permit tracking matrix as a reference to facilitate the discussion.

Monitoring Site	Civil - Grading	Pavers/Concrete Pad	Tricorn Shell Moved to Sample Location	Current Power Source	Final Power Plan	Regulatory Permits	Current Status	Data Online?	Data Online Plan	Security	Communications
GC-01	Complete	Complete	Complete	Solar	Solar		Complete	TCT Website Only	Online at CCL Website (Public) - by November 6th		AQM modem
GC-02	Complete	Complete	Complete	Direct Power	Direct Power		Complete	TCT Website Only	Online at CCL Website (Public) - by November 6th		AQM modem
GC-03	Complete	Complete	Complete	Solar	Solar		Complete	TCT Website Only	Online at CCL Website (Public) - by November 6th		AQM modem
GC-04	Complete	Complete	Complete	Direct Power	Direct Power		Complete. Evaluating UPS for intermittent power outages.	TCT Website Only	Online at CCL Website (Public) - by November 6th		Cell Signal Booster, AQM modem, (Starlink - Purchased and waiting arrival)
GC-06	N/A		Complete	Solar	Solar		Running on expanded solar panel setup.	Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
GC-07	Complete	Complete	Complete	Solar	Solar		Complete	Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
GC-08	N/A	N/A	Complete	Battery	Power Drop (meter)	Recently received address approval. Service request has been submitted and awaiting SCE review.	Battery trailers on-site; on battery rotation	Online at CCL Website (Public)	Online at CCL Website (Public)	Evaluating options for camera/alert system	Starlink Satellite, Cell Signal Booster
GC-10	Complete	Complete	Complete	Direct Power	Direct Power		Complete	Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
GC-11	Complete	Complete	Complete	Direct Power	Direct Power		Complete	Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
GC-12	N/A	N/A	Complete	Battery	Power Drop (meter)	Revised civil plans were submitted for the floodplain study yesterday to Epic LA.	Battery trailers on-site; on battery rotation. Currently in Flood Permitting process.	Online at CCL Website (Public)	Online at CCL Website (Public)	Evaluating options for camera/alert system	Cell Signal Booster, AQM modem, (Starlink - Purchased and waiting arrival)
MS-01	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-02	Complete	Complete	N/A	Direct Power	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-03	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-04	Complete	Complete	N/A	Direct Power	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem, (Starlink - Purchased and waiting arrival)
MS-05	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-06	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-07	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-08	Complete	Complete	N/A	Solar	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)	Evaluating options for camera/alert system	Starlink Satellite, Cell Signal Booster
MS-09	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-10	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-11	Complete	Complete	N/A	Direct Power	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-12	Complete	Complete	N/A	Battery	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)	Evaluating options for camera/alert system	AQM modem, (Starlink - Purchased and waiting arrival)

Period	Gas Generation	Average Gas Recovery	Collection Efficiency	Notes
	(cfm)	(cfm)	(%)	
Jan-24	16,986	9,116	53.67%	
Feb-24	16,986	8,519	50.15%	
Mar-24	16,986	8,968	52.80%	
Apr-24	16,986	10,688	62.92%	
May-24	16,986	10,906	64.21%	
Jun-24	16,986	11,830	69.65%	
Jul-24	16,986	12,100	71.24%	
Aug-24	16,986	12,046	70.92%	
Sep-24	16,986	13,197	77.69%	
Oct-24	16,986	13,184	77.62%	Downtime at the end of October impacted overall flow. Flow rate with downtime removed was 13,615
Nov-24	16,986	13,160	77.48%	Also some downtime in early November, without downtime, average was 13,650

Chiquita Canyon Landfill
Current Air Permit Applications

Application Name	Description	Submittal Date	Application Nos.	Status	Notes	Priority
Permit to Construct/Permit to Operate and Title V Modification for Diesel Engine at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed diesel-powered I.C. engine generator (518 bhp) for backup power to existing flare station	5/14/2020	621906 and 621907	Deemed complete on 6/2/20; Pending	Additional information request from SCAQMD on 7/26/24; response provided on 8/9/24	Lower
Title V Renewal Application at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Title V Renewal (Title V Expiration 5/17/22)	5/11/2022	637021	Deemed complete on 6/3/22; Pending		Lower
Permit to Operate and Title V Modification Application to Landfill Gas Condensate and Leachate Collection/Storage System and Landfill Gas Collection System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed modification to LFG collection system to update equipment description and add 203 vertical gas wells and 90,000 feet of horizontal gas collection per Condition No. 16 of the SOFA; modification to condensate/leachate/collection system per Condition No. 19 of SOFA to add four 45,000 gallon clarifier tanks and fifty 21,000 gallon frac tanks	10/4/2023	647475, 647476, and 647477	Deemed complete on 12/21/23; Pending	Additional information request from SCAQMD on 10/25/23; response provided on 10/31/23; Additional information request No. 2 from SCAQMD on 10/31/23; responses provided on 11/7/23 and 12/15/23; Additional information request No. 3 from SCAQMD on 12/6/23; response provided on 12/8/23; Additional information request No. 4 from SCAQMD on 2/23/24; response provided on 2/29/24	Lower
Permit to Construct/Permit to Operate and Title V Modification for New Blower and Flare Station at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZULE Flare (Flare No. 4/FL-130); will replace existing Flare No. 1/FL-150 per Condition No. 21 of SOFA	10/30/2023	647995 and 647996	Deemed complete on 2/6/24; Pending	Additional information request from SCAQMD on 11/28/23; response provided on 12/5/23; Information request No. 2 from SCAQMD on 4/4/24; response provided on 4/5/24	High
Facility-Wide Condition and Title V Permit Revision Application for Temperature Higher Operating Values at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed temperature Higher Operating Values for LFG Extraction Wells	1/26/2024	650025 and 650026	Deemed complete on 5/14/24; Pending	Additional information request from SCAQMD on 2/28/24; response provided on 3/8/24; Additional email from SCAQMD on 3/28/24 (and follow up on 4/4/24) noting that they do not anticipate moving forward on HOV request but want to confirm facility is following NESHAP Subpart AAAA; response provided on 4/5/24 confirming compliance with AAAA and asking for AQMD to reconsider HOV request; Additional information request from SCAQMD on 5/2/24; response provided on 5/6/24	High

Application Name	Description	Submittal Date	Application Nos.	Status	Notes	Priority
Rule 1150 Excavation Management Plan, Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed Rule 1150 EMP per Condition No. 41 of SOFA	1/29/2024	650024	Deemed complete on 3/12/24; Pending	Additional information request from SCAQMD on 2/23/24; response provided on 2/28/24	Lower
Permit to Operate and Title V Modification Application to Landfill Gas Condensate and Leachate Collection/Storage System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed additional modifications per SOFA Condition No. 57 to the pending application submitted under Condition No. 19 for the addition of 211 tanks	4/19/2024	652106 and 652107	Deemed complete on 5/14/24; Pending		Medium
Permit to Operate and Title V Modification to the Landfill Gas Collection System at the Chiquita Canyon Landfill (Facility ID 119219)	Proposed Modification to LFG Collection System to add modify equipment description to add in the tie-in of the LFG condensate and leachate treatment system vapor vent lines per SOFA Condition No. 60	4/19/2024	652118 and 652119	Deemed complete on 5/14/24; Pending		Lower
Permit to Operate and Title V Modification Application to Landfill Gas Flare System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed modification to flares (No. 1 and No. 2 under PTO and Flare No. 3 under PTC) under equipment description to include the combustion of vapor vented from the liquid storage tanks in the LFG condensate and leachate collection/storage system and LFG condensate and leachate treatment system per SOFA Condition Nos. 61 and 62	5/20/2024	652678, 652679, and 652680	Deemed complete on 8/29/24; Pending	Additional information request from SCAQMD on 6/20/24; response provided on 6/28/24; Information request No. 2 from SCAQMD on 7/2/24; response provided on 7/11/24	Lower
Permit to Operate and Title V Modification Application to the Landfill Gas Collection System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed Modification to LFG Collection System to include collectors above and/or underground for purpose of collecting LFG under geosynthetic cover per SOFA Condition No. 31	5/20/2024	652688 and 652689	Deemed complete on 8/27/24; Pending	Additional information request from SCAQMD on 6/20/24; response provided on 6/28/24; Information request No. 2 from SCAQMD on 7/2/24; response provided on 7/11/24	Lower
Permit to Construct/Permit to Operate and Title V Modification for Thermal Oxidizer at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZEECO Thermal Oxidizer application per SOFA Condition No. 58	6/13/2024	653610 and 653611	Deemed complete on 7/31/24; Pending	Additional data request on 6/28/24 and response provided on 7/12/24; Information request from SCAQMD on 20/11/24; response provided on 10/18/24	Medium

Application Name	Description	Submittal Date	Application Nos.	Status	Notes	Priority
Permit to Construct/Permit to Operate and Title V Revision for Landfill Gas Condensate and Leachate Treatment System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed treatment system for hazardous liquid waste per SOFA Condition No. 59	6/20/2024	653742 and 653743 (Rejected)	--	Additional data request on 7/19/24 and response provided on 7/30/24. Additional data request on 8/21/24 and response provided on 8/28/24 requesting meeting. Meeting held 9/10/24 and follow-up required including a second application for separate treatment system; Application rejected on 9/26/24	N/A
Permit to Construct/Permit to Operate and Title V Revision for Generator Engines at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed three (3) rental generator IC engines per SOFA Condition No. 73 (temporarily for power at flare station and TOX)	6/27/2024	653902, 653903, 653904, and 653906	Deemed complete on 9/10/24; Pending	Additional information request from SCAQMD on 7/26/24; response provided on 8/9/24; Permanent power in place for TOX as of 8/19/24 so need to rescind TOX generator; permanent power for flare station close; however, flare station generators died and were replaced so new application required	Lower
Permit to Construct/Permit to Operate and Title V Revision for Engine Generator for Tipper, Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed portable diesel-powered I.C. engine generator (124 bhp) to power tipper	8/23/2024	655042 and 655043	Deemed complete on 10/4/24; pending	Additional information request from SCAQMD on 9/24/24; response provided on 10/1/24	High
Permit to Construct/Permit to Operate and Title V Modification for New Blower and Flare Station at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZULE Flare (Flare No. 5)	10/30/2024	Pending	Pending		Medium
Permit to Operate and Title V Modification for Flare No. 2 at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed Modification ZULE Flare (Flare No. 2)	10/30/2024	Pending	Pending	Need to increase stack height due to heat impacts from future taller flares/blower reconfiguration	Medium
Permit to Operate and Title V Modification for Flare No. 3 at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed Modification ZULE Flare (Flare No. 3)	10/30/2024	Pending	Pending	Blower reconfiguration	Medium
Modification to Pending Permit to Construct/Permit to Operate and Title V Modification for New Blower and Flare Station at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZULE Flare (Flare No. 4/FL-130)	10/30/2024	647995 and 647996 (Current)	Pending	Modify application to reflect that Flare No. 1 will not be replaced when Flare No. 4 installed - include Flare No. 1 emissions to site-wide total/blower reconfiguration	Lower

Application Name	Description	Submittal Date	Application Nos.	Status	Notes	Priority
Modification to Pending Permit to Construct/Permit to Operate and Title V Modification for Thermal Oxidizer at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZEECO Thermal Oxidizer application per SOFA Condition No. 58	11/11/2024	653610 and 653611 (Current)	Pending	Modify application to reflect that Flare No. 1 will not be replaced when Flare No. 4 installed - include Flare No. 1 emissions to site-wide total - senta app to SCAQMD via email as requested to confirm if fees needed	Lower
Permit to Construct/Permit to Operate and Title V Revision for Landfill Gas Condensate and Leachate Treatment System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Permit for leachate tank cleaning	11/12/2024 (delivery on 11/13/24)	Pending	Pending	SCAQMD said they wanted this operation under permit since it has potential to emit VOCs	Lower
Permit to Construct/Permit to Operate and Title V Revision for Generator Engines at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed two (2) generator IC engines per SOFA Condition No. 73 (switch from temporary to permanent backup power at flare station)	Planned: Late November/Early December			Generators under previous application for temporary power at flare station recently died; new application for replacement generators in progress and consdering permanent backup power	Lower
Permit to Construct/Permit to Operate and Title V Revision for Landfill Gas Condensate and Leachate Treatment System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed treatment system(s) for hazardous liquid waste (application that was rejected)	Planned: Late November/Early December			Resubmit two applications (one for each system) after previous application rejected	Medium

Rule 1150 Excavation Notification Log

Event #	Multi-Day?	Start	End	Event Type	Reason	Notification Type	Notification Issued (Day and Time)	Rule 1150 Excavation Occurring When Notification Issued?	Time Rule 1150 Excavation Halted and/or Modified	Notification Lifted (Day and Time)
1	N	9/4/2024	9/4/2024	Exceedance	MS-04 H2S Exceedance	Stop & approved mitigation measures needed if Rule 1150 excavation is occurring	9/4/2024 14:04	No		9/4/2024 15:03
2	N	9/5/2024	9/5/2024	Exceedance	MS-02 H2S Exceedance	Stop & approved mitigation measures needed if Rule 1150 excavation is occurring	9/5/2024 14:04	Yes	14:05	9/5/2024 19:09
3	N	9/6/2024	9/6/2024	Exceedance	MS-02 H2S Exceedance	Stop & approved mitigation measures needed if Rule 1150 excavation is occurring	9/6/2024 13:07	No		9/6/2024 17:00
4	N	9/11/2024	9/11/2024	Exceedance	MS-04 H2S Exceedance	Stop & approved mitigation measures needed if Rule 1150 excavation is occurring	9/11/2024 15:04	Yes	15:08	9/11/2024 20:06
5	N	9/12/2024	9/12/2024	Exceedance	MS-02 H2S Exceedance	Stop & approved mitigation measures needed if Rule 1150 excavation is occurring	9/12/2024 15:06	No		9/12/2024 17:41
6	N	9/23/2024	9/23/2024	Exceedance	MS-06 H2S Exceedance*	Stop & approved mitigation measures needed if Rule 1150 excavation is occurring	9/23/2024 15:23	No		9/23/2024 15:24
7	N	9/25/2024	9/25/2024	Exceedance	MS-02 H2S Exceedance	Stop & approved mitigation measures needed if Rule 1150 excavation is occurring	9/25/2024 13:22	No		9/25/2024 14:24
8	N	9/30/2024	9/30/2024	Outage	GC-04, GC-08, GC-12 Offline	Approved mitigation measures needed if Rule 1150 excavation is occurring	9/30/2024 8:52	No		9/30/2024 17:00
9	Y	10/2/2024	10/4/2024	Outage	GC-08, MS-04, MS-08, MS-11 Offline	Approved mitigation measures needed if Rule 1150 excavation is occurring	10/2/2024 8:09	No		10/4/2024 9:39
10	N	10/4/2024	10/4/2024	Outage	GC-04, GC-08, MS-04, MS-07, MS-08 Offline	Approved mitigation measures needed if Rule 1150 excavation is occurring	10/4/2024 14:18	No		10/4/2024 15:26
11	Y	10/9/2024	10/10/2024	Outage	GC-03, GC-04, GC-08 Offline	Approved mitigation measures needed if Rule 1150 excavation is occurring	10/9/2024 9:40	No		10/10/2024 8:28
12	Y	10/15/2024	10/16/2024	Outage	GC-04, GC-08, MS-02 Offline	Approved mitigation measures needed if Rule 1150 excavation is occurring	10/15/2024 16:13	No		10/16/2024 8:06
13	N	10/16/2024	10/16/2024	Outage	MS-04, MS-05, MS-08 Offline	Approved mitigation measures needed if Rule 1150 excavation is occurring	10/16/2024 12:14	No		10/16/2024 15:21

No Rule 1150 excavation was occurring at the time that the notification was issued
If Rule 1150 excavation is occurring, approved mitigation measures needed due to >25% monitoring stations offline
If Rule 1150 excavation is occurring, cessation of excavation and approved mitigation measures needed due to REL exceedance

* Further analysis confirmed this was not a true exceedance. There was an erroneous spike in H2S due to unit coming back online. However, notification had already been made.

MS Aeroqual monitors
GC MicroGC monitors

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT K TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

Chiquita Canyon Landfill, LLC
Reaction Committee & SCAQMD Staff Monthly Meeting
Wednesday, November 20, 2024 at 10:00 am PT

AGENDA

I. Leachate & Landfill Gas Updates
   Presentation Leaders – Vidhya Viswanathan, PE

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)
   Presentation Leaders – Pablo Sanchez-Soria, Dr. Rick Pleus & Pat Sullivan, BCES, CPP, REPA

III. Reaction Area (e.g., temperatures, settlement)
   Presentation Leaders – Bob Dick, PE, BCEE

IV. Permitting
   Presentation Leader – Pat Sullivan, BCES, CPP, REPA

MEETING MINUTES

Attendees: *Reaction Committee, SCS & Chiquita — Bob Dick, Rick Pleus, Pablo Sanchez-Soria, Pat Sullivan, Vidhya Viswanathan, Bill Haley, Kelli Hackney, Jake Duginski, Leigh Barton*

South Coast Air Quality Management District (SCAQMD)—John Anderson, Chris Chen, Nathaniel Dickel, Stephen Dutz, Lizabeth Gomez, Larry Israel, Ryan Mansell, Christina Ojeda, Andrea Polidori, Mary Reichert, Kathyrn Roberts, Amanda Sanders, Angela Shibata, Gerardo Vergara

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I. Leachate & Landfill Gas Updates

a. Mr. Bolton was unable to participate in the meeting due to illness. Mr. Dick shared the PowerPoint slideshow that Mr. Bolton had prepared, which had been distributed in advance of the meeting.

   i. **Outstanding Request:** Ms. Roberts asked about the circumstances contributing to the increase in the number of leaks (14) that had occurred as well as the circumstances affiliated with the leachate seep located in the southeast portion of the landfill footprint.

      1. **Written Response:** Chiquita attributes the majority of the leaks to the operations of the leachate trucks and truck drivers. At the outset, please note that Chiquita began consistently reporting leaks after the August 2024 SOFA, so comparison of the number of leaks before and

after August 2024 is not an apples-to-apples comparison. All of the leaks that have been occurring around the scale area have occurred when a leachate truck comes down the hill, and the leachate within the truck levels out. While the leachate is levelling out, it leaks out of any valve on the truck that has inadvertently been left open by the truck driver. To address this issue and prevent future such leaks, Chiquita has created a truck tagging protocol in which the truck drivers tag out every valve that could leak. This helps to ensure that the truck valves are closed and marked as such. One leak was due to human error when a tank overflowed. To address this issue, Chiquita is implementing the new standard operating procedures for tank filling activities and is further increasing the tools its employees have to track tank levels. Chiquita attributes the leachate seep in the southeast corner to the drilling of a line of wells on the southeast side, which then filled with liquid. These columns of liquid exerted new fluid pressure in the area, which then led to the seepage. Chiquita is addressing this issue by pumping.

ii. **Outstanding Request:** Ms. Roberts inquired about the additional details that were anticipated to be discussed between Mr. Bolton and SCAQMD staff related to the training for leak prevention.

1. **Written Response:** As discussed in the response above, the majority of the leaks are due to the operations of the leachate trucks and the truck drivers. As also discussed above, Chiquita is addressing this issue by implementing a new valve tag out protocol.

iii. **Outstanding Request:** Ms. Gomez inquired whether the written Standard Operating Procedures (SOPs), which had been previously submitted to SCAQMD, have been revised or updated to address these 14 recent leaks.

1. **Written Response:** The standard operating procedures for tank filling have not been further updated to address these recent leaks. Instead, as described in the two responses above, Chiquita is implementing additional procedures to reduce leaks from the leachate trucks and is increasing its tools that allow employees to track tank levels.

b. Ms. Viswanathan provided an overview of pump and well installation activities. She reported that 104 pumps have been installed within the Reaction Area. 95 of these pumps are currently operational, while the remaining 9 pumps have not yet been put into operation or are non-functional for a variety of reasons. 83 additional pumps are planned for installation within the Condition 9(a) boundary. With respect to well installations, she reported that recent drilling activities have installed 8 additional wells within the Condition 9(a) boundary, yielding a total of 238 wells installed within this area. There are 3 additional wells planned for installation, pending the resumption of drilling activities. She also noted that 8 wells within this area have been abandoned to date. The total number of LFG wells installed at the facility since drilling commenced in July 2023 is 282.

i. **Outstanding Request:** Ms. Gomez inquired about the timeframe for the installation of the 83 additional pumps.

1. **Written Response:** Chiquita expects to install the additional pumps in wells within the reaction area by the end of April 2025. It is imperative that Chiquita installs the additional pumps carefully in order to achieve a manageable and consistent increase in leachate extraction as opposed to a sudden surge. This allows additional flexibility that Chiquita needs for unexpected increases from the installation of pumps in new areas, which could otherwise have the potential to tax Chiquita's accumulation capacity or offsite disposal options.

ii. **Outstanding Request:** Ms. Shibata asked about the timeframe for the abandonment of the 8 wells mentioned.

1. **Written Response:** Chiquita has already abandoned these wells so there is no further timeline to provide.

iii. **Outstanding Request:** Ms. Roberts inquired about how many of the 238 wells are positioned within the data-driven reaction area boundary.

1. **Written Response:** As of November 19, 2024, there were 78 vertical LFG extraction wells in the data-driven reaction area.

c. Mr. Haley presented an update on the efforts to enhance the electrical power supply at the existing blower/flare station as well as on the status of Flare 4 procurement and installation.

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)

a. Mr. Sanchez-Soria provided a short update on the west slope project. He reported that, between August 8, 2024 and November 4, 2024, there were no "stop work" instances that extended for an entire day; however, there were multiple instances of an exceedance of action level(s) which contributed to short-duration stop-work instances. The majority of these exceedances were related to carbon monoxide (CO), and the duration of these events typically averaged about 10 minutes or so. He stated that there were no injuries, and no illnesses associated with these exceedances.

i. **Outstanding Request:** Ms. Roberts inquired about the stop work under Condition 42 of the Stipulated Order.

1. **Written Response:** Chiquita's excavation notification log is attached to this summary. Chiquita will continue to update this log as needed when excavation work occurs.

b. Dr. Pleus stated that he had no updates related to the Odor Impacts Assessment.

c. Mr. Sullivan provided updates on the status of the installation and functioning of the new air monitoring stations using a location map and the tracking matrix. He noted that all 10 units are deployed, activated, and data is being uploaded and recorded onto the website. He noted some issues with GC-07, GC-08, and GC-12, and that SCS installed Starlink satellite service at GC-07 and GC-12 to address recent communication disruption caused by a telemetry issue. He addressed SCAQMD's questions from the October meeting on: 1) data compilation and recordkeeping; 2) REL exceedance notification procedures; and, 3) trigger of reduction in excavation work. Mr. Sullivan also discussed the backup power supply being provided to the various LFG combustion units (flares and TOX). He also provided an update on the flux chamber testing activities occurring this week and reported that SCAQMD staff were on-site observing this work.

He noted that the lab will be analyzing for additional chemical constituents per the modified SOFA. Mr. Sullivan concluded by presenting the LFG recovery matrix.

i. **Outstanding Request:** Mr. Dickel inquired whether the vapor flow from the leachate tanks are incorporated into the matrix.

1. **Written Response:** Yes, the flows in the matrix did include the leachate tank vapor. Mr. Sullivan has updated the spreadsheet to separate out the vapor flow. This updated spreadsheet is attached to this summary.

III. Reaction Area (e.g., temperatures, settlement)

a. Mr. Dick addressed the primary findings and conclusions presented in the Reaction Area Boundary Determination submitted on November 7, 2024. The topics included temperature values recorded in the in-situ waste temperature probes, temperatures and gas composition values measured in the landfill gas wellheads, and the consistency of the delineated (data-driven) boundary. Mr. Dick reviewed the most recent TMP temperature graphs, provided a status update on the sonic drilling activities associated with new TMPs, and outlined findings of an analysis of the data for various parameter measurements from "border region" wells.

IV. Permitting

a. Mr. Sullivan provided updates on the various permitting efforts, utilizing the permit tracking matrix as a reference to facilitate the discussion.

Chiquita Canyon Landfill

AQMD Update on Leachate Seeps & Leaks, Geomembrane Capping, and West Slope Toe Drain

November 20, 2024

Leachate Seep & Leak Summary

- There were 3 seeps reported since our last update.
- These were located in Grids 150 (1), 93 (1), and 210 (1).
- Leachate volume ranged from 16-90 gallons.
- No leachate reached storm channel or sed-basin.

- There were 14 leaks reported since our last update.
- These were located in Grid 173 (2), Grid 220 (1), Grid 81 (1), Grid 246 (1), Grid 247 (1), Grid 150 (1), Near the scale house (3), and Tank Farm #7 (4).
- Leak volume ranged from 2-6000 gallons.
- Additional training measures to prevent leaks being implemented.

Leachate Seeps Reported
October 13 – October 30, 2024

Date	Time of Inspection	Type of Discharge	Volume *(gallons)*	Location	In Drainage Channel	Notes
17-Oct-2024	7:31 AM	Seep	36	150	No	Contaminated soil removed. Berm reenforced around active work area.
21-Oct-2024	10:30 PM	Seep	90	93	No	Work began to dig in the direction the leachate was coming from to find the path it was following and determine a permanent solution. Work was ongoing throughout the day. Leachate was vacuumed out throughout the day as needed.
30-Oct-2024	7:45 AM	Seep	16	210	No	Contaminated soil removed. Fresh dirt added and compacted with excavator.

Leachate Leak Reported
October 14 – November 11, 2024

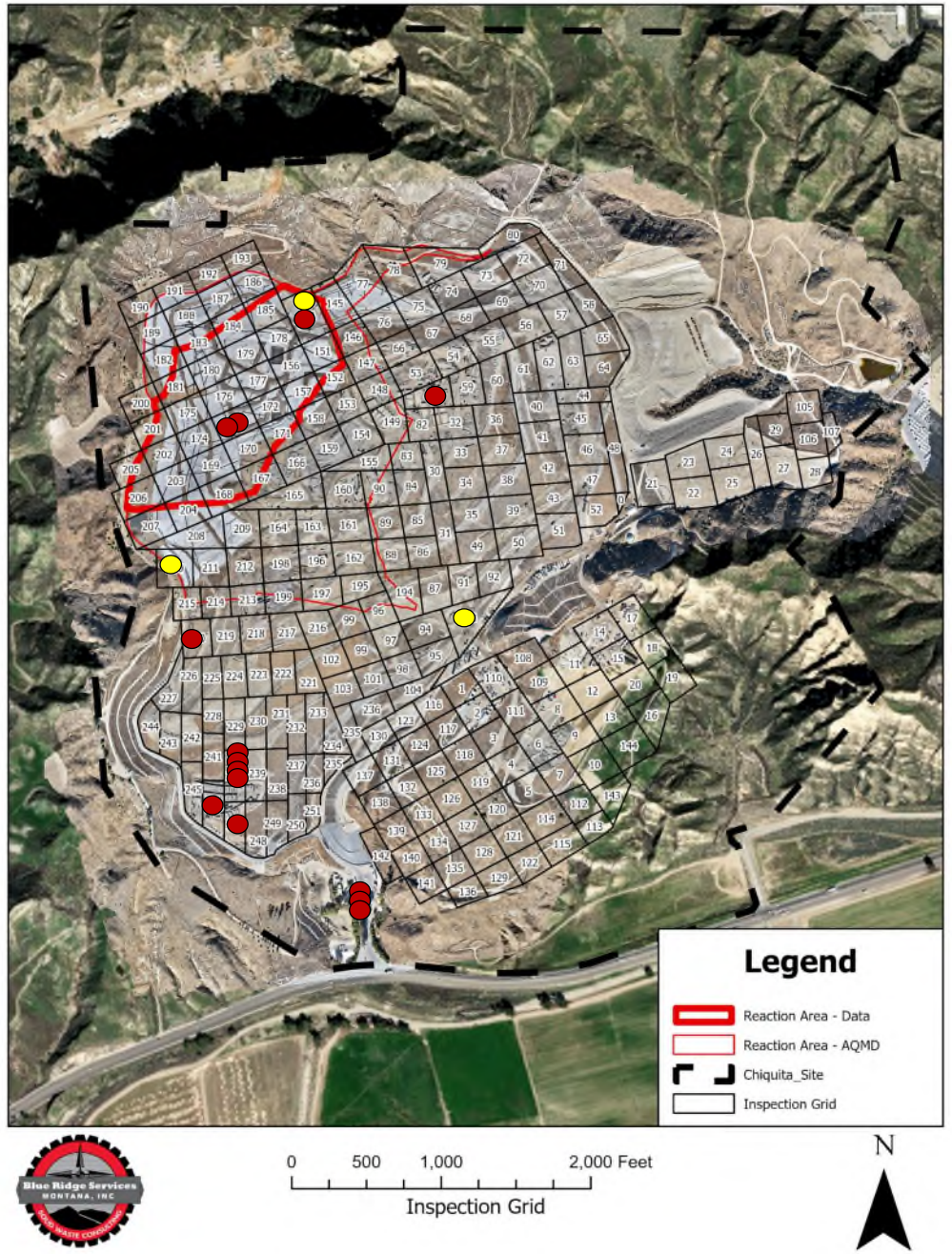
Date	Time of Inspection	Type of Discharge	Volume *(gallons)*	Location	In Drainage Channel	Notes
14-Oct-2024	9:54 AM	Leak	5	173	No	The leak occurred from a sump pump discharge hose located in grid 173. Liquids from the leak did not leave the landfill footprint or reach any stormwater channel or either stormwater basin.
17-Oct-2024	1:00 PM	Leak	50	Tank Farm #7	No	The spill occurred from a hose in Tank Farm 7. Liquids from the spill did not leave the landfill footprint or reach any stormwater channel or either stormwater basin. The leachate was completely contained within secondary containment.
17-Oct-2024	7:20 AM	Leak	15	Near Scale House	No	The spill occurred from a third-party truck at the exit scale near the scale house. Liquids from the spill did not leave the landfill footprint or reach any stormwater channel or either stormwater basin.
18-Oct-2024	8:17 AM	Leak	6000	Tank Farm #7	No	The spill occurred from a tank within the containment area of the leachate collection system near the front office. The tank collects leachate that drains into the tank from various areas of the landfill and then pumps that leachate to Tank Farm 7. Liquids from the spill did not reach any stormwater channel or either stormwater basin. Leachate from the spill was fully contained within secondary containment.
21-Oct-2024	8:45 AM	Leak	100	173	No	The spill occurred from the well force main for well 24044 in grid 173, on top of the geosynthetic cover. Liquids from the spill did not leave the landfill footprint or reach any stormwater channel or either stormwater basin.
22-Oct-2024	11:30 AM	Leak	200	Tank Farm #7	No	The spill appears to have occurred from Tank 4 located within Tank Farm 7. Liquids from the spill did not leave the landfill footprint or reach any stormwater channel or either stormwater basin. Leachate from the spill was fully contained within secondary containment.
23-Oct-2024	7:00 AM	Leak	2	Near Scale House	No	The spill occurred from a third-party truck at the exit scale near the scale house. Liquids from the spill did not leave the landfill footprint or reach any stormwater channel or either stormwater basin.
24-Oct-2024	12:00 PM	Leak	20	81	No	The spill occurred from a vacuum line within grid 81. Liquids from the spill did not leave the landfill footprint or reach any stormwater channel or either stormwater basin.
24-Oct-2024	2:00 AM	Leak	2	247	No	The spill occurred from a truck hose in grid 247. Liquids from the spill did not leave the landfill footprint or reach any stormwater channel or either stormwater basin.
30-Oct-2024	3:00 PM	Leak	50	220	Yes	The spill occurred from a decommissioned pipe within grid 220. Leachate crossed the road and entered the west side drainage channel.
31-Oct-2024	11:45 AM	Leak	150	246	No	The spill occurred from a frac tank within grid 246. Liquids from the spill remained on the landfill's liner and did not reach any stormwater channel or either stormwater basin.
2-Nov-2024	12:40 PM	Leak	20	150	No	The spill occurred from a flex hose/vacuum line located within grid 150. Liquids from the spill remained on the landfill's liner, did not leave the geosynthetic cover area, and did not reach any stormwater channel or either stormwater basin.
6-Nov-2024	3:30 AM	Leak	20	Tank Farm #7	No	The pinhole leak was identified in the bottom of a frac tank located within Tank Farm 7 within grid 240. Liquids from the leak remained on the landfill's liner and did not reach any stormwater channel or either stormwater basin.
11-Nov-2024	3:00 AM	Leak	20	Near Scale House	No	The spill occurred from a third-party truck at the exit near the scale house. Liquids from the spill did not reach any stormwater channel or either stormwater basin.

Training for Leak Prevention

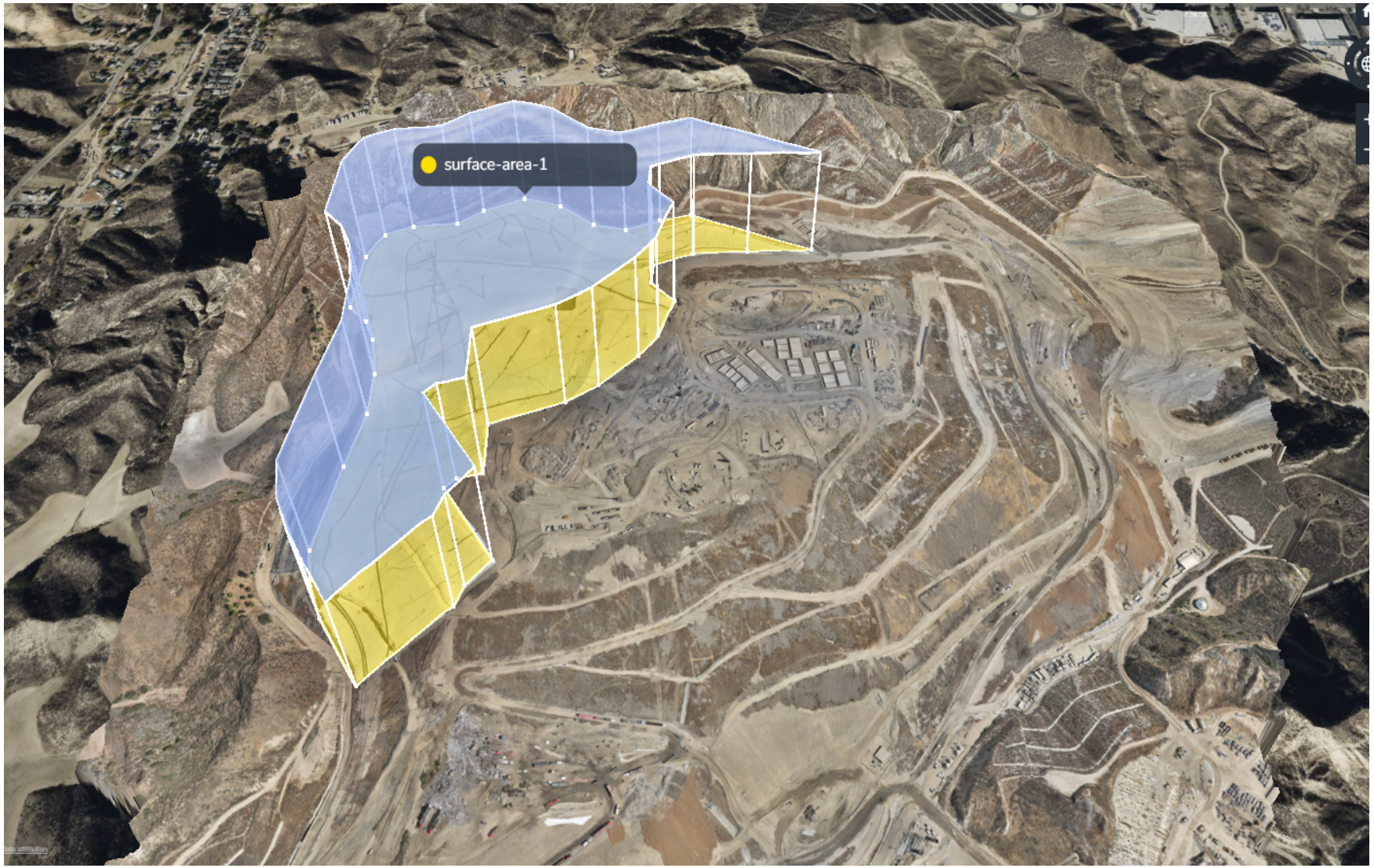
- Chiquita has implemented additional valve check and walk-around inspection SOPs to prevent leaks.
- Additional details to be provided during this month’s presentation to AQMD.

October 2024

Seeps
Leaks



Approximately 41.9 Acres Capped
Additional Capping on West Slope in Progress



Geomembrane Cap
Surface Drainage Sump

Update on West Slope Toe Drain Project

- Construction began on August 8th.
- Initial progress was slow as the crews got into a routine with the safety and workplan procedures.
- Progress has increased dramatically thanks to CCL oversight and Contractor effort.
- Progressive staging of project working smoothly.
- Crew is encountering less liquid than anticipated during excavation.
- All sumps completed.
- All excavation of West Toe Drain Completed.

Chiquita Canyon Landfill
Current Air Permit Applications

Application Name	Description	Submittal Date	Application Nos.	Status	Notes	Priority
Permit to Construct/Permit to Operate and Title V Modification for Diesel Engine at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed diesel-powered I.C. engine generator (518 bhp) for backup power to existing flare station	5/14/2020	621906 and 621907	Deemed complete on 6/2/20; Pending	Additional information request from SCAQMD on 7/26/24; response provided on 8/9/24	Lower
Title V Renewal Application at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Title V Renewal (Title V Expiration 5/17/22)	5/11/2022	637021	Deemed complete on 6/3/22; Pending		Lower
Permit to Operate and Title V Modification Application to Landfill Gas Condensate and Leachate Collection/Storage System and Landfill Gas Collection System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed modification to LFG collection system to update equipment description and add 203 vertical gas wells and 90,000 feet of horizontal gas collection per Condition No. 16 of the SOFA; modification to condensate/leachate/collection system per Condition No. 19 of SOFA to add four 45,000 gallon clarifier tanks and fifty 21,000 gallon frac tanks	10/4/2023	647475, 647476, and 647477	Deemed complete on 12/21/23; Pending	Additional information request from SCAQMD on 10/25/23; response provided on 10/31/23; Additional information request No. 2 from SCAQMD on 10/31/23; responses provided on 11/7/23 and 12/15/23; Additional information request No. 3 from SCAQMD on 12/6/23; response provided on 12/8/23; Additional information request No. 4 from SCAQMD on 2/23/24; response provided on 2/29/24	Lower
Permit to Construct/Permit to Operate and Title V Modification for New Blower and Flare Station at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZULE Flare (Flare No. 4/FL-130); will replace existing Flare No. 1/FL-150 per Condition No. 21 of SOFA	10/30/2023	647995 and 647996	Deemed complete on 2/6/24; Pending	Additional information request from SCAQMD on 11/28/23; response provided on 12/5/23; Information request No. 2 from SCAQMD on 4/4/24; response provided on 4/5/24	High
Facility-Wide Condition and Title V Permit Revision Application for Temperature Higher Operating Values at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed temperature Higher Operating Values for LFG Extraction Wells	1/26/2024	650025 and 650026	Deemed complete on 5/14/24; Pending	Additional information request from SCAQMD on 2/28/24; response provided on 3/8/24; Additional email from SCAQMD on 3/28/24 (and follow up on 4/4/24) noting that they do not anticipate moving forward on HOV request but want to confirm facility is following NESHAP Subpart AAAA; response provided on 4/5/24 confirming compliance with AAAA and asking for AQMD to reconsider HOV request; Additional information request from SCAQMD on 5/2/24; response provided on 5/6/24	High

Application Name	Description	Submittal Date	Application Nos.	Status	Notes	Priority
Rule 1150 Excavation Management Plan, Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed Rule 1150 EMP per Condition No. 41 of SOFA	1/29/2024	650024	Deemed complete on 3/12/24; Pending	Additional information request from SCAQMD on 2/23/24; response provided on 2/28/24	Lower
Permit to Operate and Title V Modification Application to Landfill Gas Condensate and Leachate Collection/Storage System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed additional modifications per SOFA Condition No. 57 to the pending application submitted under Condition No. 19 for the addition of 211 tanks	4/19/2024	652106 and 652107	Deemed complete on 5/14/24; Pending		Medium
Permit to Operate and Title V Modification to the Landfill Gas Collection System at the Chiquita Canyon Landfill (Facility ID 119219)	Proposed Modification to LFG Collection System to add modify equipment description to add in the tie-in of the LFG condensate and leachate treatment system vapor vent lines per SOFA Condition No. 60	4/19/2024	652118 and 652119	Deemed complete on 5/14/24; Pending		Lower
Permit to Operate and Title V Modification Application to Landfill Gas Flare System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed modification to flares (No. 1 and No. 2 under PTO and Flare No. 3 under PTC) under equipment description to include the combustion of vapor vented from the liquid storage tanks in the LFG condensate and leachate collection/storage system and LFG condensate and leachate treatment system per SOFA Condition Nos. 61 and 62	5/20/2024	652678, 652679, and 652680	Deemed complete on 8/29/24; Pending	Additional information request from SCAQMD on 6/20/24; response provided on 6/28/24; Information request No. 2 from SCAQMD on 7/2/24; response provided on 7/11/24	Lower
Permit to Operate and Title V Modification Application to the Landfill Gas Collection System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed Modification to LFG Collection System to include collectors above and/or underground for purpose of collecting LFG under geosynthetic cover per SOFA Condition No. 31	5/20/2024	652688 and 652689	Deemed complete on 8/27/24; Pending	Additional information request from SCAQMD on 6/20/24; response provided on 6/28/24; Information request No. 2 from SCAQMD on 7/2/24; response provided on 7/11/24	Lower
Permit to Construct/Permit to Operate and Title V Modification for Thermal Oxidizer at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZEECO Thermal Oxidizer application per SOFA Condition No. 58	6/13/2024	653610 and 653611	Deemed complete on 7/31/24; Pending	Additional data request on 6/28/24 and response provided on 7/12/24; Information request from SCAQMD on 20/11/24; response provided on 10/18/24	Medium

Application Name	Description	Submittal Date	Application Nos.	Status	Notes	Priority
Permit to Construct/Permit to Operate and Title V Revision for Landfill Gas Condensate and Leachate Treatment System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed treatment system for hazardous liquid waste per SOFA Condition No. 59	6/20/2024	653742 and 653743 (Rejected)	--	Additional data request on 7/19/24 and response provided on 7/30/24. Additional data request on 8/21/24 and response provided on 8/28/24 requesting meeting. Meeting held 9/10/24 and follow-up required including a second application for separate treatment system; Application rejected on 9/26/24	N/A
Permit to Construct/Permit to Operate and Title V Revision for Generator Engines at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed three (3) rental generator IC engines per SOFA Condition No. 73 (temporarily for power at flare station and TOX)	6/27/2024	653902, 653903, 653904, and 653906	Deemed complete on 9/10/24; Pending	Additional information request from SCAQMD on 7/26/24; response provided on 8/9/24; Permanent power in place for TOX as of 8/19/24 so need to rescind TOX generator; permanent power for flare station close; however, flare station generators died and were replaced so new application required	Lower
Permit to Construct/Permit to Operate and Title V Revision for Engine Generator for Tipper, Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed portable diesel-powered I.C. engine generator (124 bhp) to power tipper	8/23/2024	655042 and 655043	Deemed complete on 10/4/24; pending	Additional information request from SCAQMD on 9/24/24; response provided on 10/1/24	High
Permit to Construct/Permit to Operate and Title V Modification for New Blower and Flare Station at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZULE Flare (Flare No. 5)	10/30/2024	Pending	Pending		Medium
Permit to Operate and Title V Modification for Flare No. 2 at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed Modification ZULE Flare (Flare No. 2)	10/30/2024	Pending	Pending	Need to increase stack height due to heat impacts from future taller flares/blower reconfiguration	Medium
Permit to Operate and Title V Modification for Flare No. 3 at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed Modification ZULE Flare (Flare No. 3)	10/30/2024	Pending	Pending	Blower reconfiguration	Medium
Modification to Pending Permit to Construct/Permit to Operate and Title V Modification for New Blower and Flare Station at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZULE Flare (Flare No. 4/FL-130)	10/30/2024	647995 and 647996 (Current)	Pending	Modify application to reflect that Flare No. 1 will not be replaced when Flare No. 4 installed - include Flare No. 1 emissions to site-wide total/blower reconfiguration	Lower

Application Name	Description	Submittal Date	Application Nos.	Status	Notes	Priority
Modification to Pending Permit to Construct/Permit to Operate and Title V Modification for Thermal Oxidizer at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed ZEECO Thermal Oxidizer application per SOFA Condition No. 58	11/11/2024	653610 and 653611 (Current)	Pending	Modify application to reflect that Flare No. 1 will not be replaced when Flare No. 4 installed - include Flare No. 1 emissions to site-wide total - senta app to SCAQMD via email as requested to confirm if fees needed	Lower
Permit to Construct/Permit to Operate and Title V Revision for Landfill Gas Condensate and Leachate Treatment System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Permit for leachate tank cleaning	11/12/2024 (delivery on 11/13/24)	Pending	Pending	SCAQMD said they wanted this operation under permit since it has potential to emit VOCs	Lower
Permit to Construct/Permit to Operate and Title V Revision for Generator Engines at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed two (2) generator IC engines per SOFA Condition No. 73 (switch from temporary to permanent backup power at flare station)	Planned: Late November/Early December			Generators under previous application for temporary power at flare station recently died; new application for replacement generators in progress and consdering permanent backup power	Lower
Permit to Construct/Permit to Operate and Title V Revision for Landfill Gas Condensate and Leachate Collection and Storage System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed additional modifications per SOFA Condition No. 90 to the pending applications submitted under Condition Nos. 19 and 57.	Due: January 31, 2025 per SOFA			Revision to existing application to update for capacity, tanks, and equipment	Medium
Permit to Construct/Permit to Operate and Title V Revision for Landfill Gas Condensate and Leachate Treatment System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed treatment system(s) for hazardous liquid waste (application that was rejected)	Planned: Late November/Early December			Resubmit two applications (one for each system) after previous application rejected. These will be cancled once the one below is submitted	Medium
Permit to Construct/Permit to Operate and Title V Revision for Landfill Gas Condensate and Leachate Treatment System at the Chiquita Canyon Landfill (Facility ID 119219), Castaic, California	Proposed treatment system(s) for hazardous liquid waste (application that was rejected). New application per Condition 91	Due: January 31, 2025 per SOFA			Submittal of application for single leachate treatment system	Medium

Monitoring Site	Civil - Grading	Pavers/Concrete Pad	Tricorn Shell Moved to Sample Location	Current Power Source	Final Power Plan	Regulatory Permits	Current Status	Data Online?	Data Online Plan	Security	Communications
GC-01	Complete	Complete	Complete	Solar	Solar		Complete	TCT Website Only	Online at CCL Website (Public) - by November 6th		AQM modem
GC-02	Complete	Complete	Complete	Direct Power	Direct Power		Complete	TCT Website Only	Online at CCL Website (Public) - by November 6th		AQM modem
GC-03	Complete	Complete	Complete	Solar	Solar		Complete	TCT Website Only	Online at CCL Website (Public) - by November 6th		AQM modem
GC-04	Complete	Complete	Complete	Direct Power	Direct Power		Complete. Evaluating UPS for intermittent power outages.	TCT Website Only	Online at CCL Website (Public) - by November 6th		Cell Signal Booster, AQM modem, (Starlink - Purchased and waiting arrival)
GC-06	N/A		Complete	Solar	Solar		Running on expanded solar panel setup.	Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
GC-07	Complete	Complete	Complete	Solar	Solar		Complete	Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
GC-08	N/A	N/A	Complete	Battery	Power Drop (meter)	Recently received address approval. Service request has been submitted and awaiting SCE review.	Battery trailers on-site; on battery rotation	Online at CCL Website (Public)	Online at CCL Website (Public)	Evaluating options for camera/alert system	Starlink Satellite, Cell Signal Booster
GC-10	Complete	Complete	Complete	Direct Power	Direct Power		Complete	Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
GC-11	Complete	Complete	Complete	Direct Power	Direct Power		Complete	Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
GC-12	N/A	N/A	Complete	Battery	Power Drop (meter)	Revised civil plans were submitted for the floodplain study yesterday to Epic LA.	Battery trailers on-site; on battery rotation. Currently in Flood Permitting process.	Online at CCL Website (Public)	Online at CCL Website (Public)	Evaluating options for camera/alert system	Cell Signal Booster, AQM modem, (Starlink - Purchased and waiting arrival)
MS-01	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-02	Complete	Complete	N/A	Direct Power	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-03	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-04	Complete	Complete	N/A	Direct Power	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem, (Starlink - Purchased and waiting arrival)
MS-05	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-06	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-07	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-08	Complete	Complete	N/A	Solar	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)	Evaluating options for camera/alert system	Starlink Satellite, Cell Signal Booster
MS-09	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-10	Complete	Complete	N/A	Solar	Solar	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-11	Complete	Complete	N/A	Direct Power	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)		AQM modem
MS-12	Complete	Complete	N/A	Battery	Direct Power	N/A		Online at CCL Website (Public)	Online at CCL Website (Public)	Evaluating options for camera/alert system	AQM modem, (Starlink - Purchased and waiting arrival)

Period	LFG Generation	Total Average Gas Recovery	Flow of Leachate Vapor*	Average LFG Only Recovery	LFG Collection Efficiency
	(cfm)	(cfm)	(cfm)	(cfm)	(%)
Jan-24	16,986	9,116		9,116	53.67%
Feb-24	16,986	8,519		8,519	50.15%
Mar-24	16,986	8,968		8,968	52.80%
Apr-24	16,986	10,688		10,688	62.92%
May-24	16,986	10,906	15	10,891	64.12%
Jun-24	16,986	11,830	15	11,815	69.56%
Jul-24	16,986	12,100	146	11,954	70.38%
Aug-24	16,986	12,046	202	11,844	69.73%
Sep-24	16,986	13,197	399	12,798	75.34%
Oct-24	16,986	13,184	418	12,766	75.16%
Nov-24	16,986	12,727	585	12,142	71.48%

*Leachate vapor flow is estimated for January-June, and measured July to present

Notes
Downtime at the end of October impacted overall flow. Flow rate with downtime removed was 13,615
Downtime in early and late November impacted overall flow. Without downtime, average was 13,650

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT L TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

Chiquita Canyon Landfill, LLC
Reaction Committee & SCAQMD Staff Monthly Meeting
Wednesday, December 18, 2024 at 10:00 am PT

AGENDA

I. Leachate & Landfill Gas Updates
   Presentation Leaders – Vidhya Viswanathan, PE & Neal Bolton, PE

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)
   Presentation Leaders – Dr. Pablo Sanchez-Soria, Dr. Rick Pleus & Pat Sullivan, BCES, CPP, REPA

III. Reaction Area (e.g., temperatures, settlement)
   Presentation Leaders – Bob Dick, PE, BCEE

IV. Permitting
   Presentation Leader – Pat Sullivan, BCES, CPP, REPA

MEETING MINUTES

Attendees: *Reaction Committee, SCS & Chiquita — Bob Dick, Rick Pleus, Pablo Sanchez-Soria, Pat Sullivan, Vidhya Viswanathan, Neal Bolton, Ray Huff, Bill Haley, Kelli Hackney, Leigh Barton*

South Coast Air Quality Management District (SCAQMD)—John Anderson, Chris Chen, Nathaniel Dickel, Stephen Dutz, Lizabeth Gomez, Larry Israel, Christina Ojeda, Andrea Polidori, Mary Reichert, Kathyrn Roberts, Angela Shibata, Gerado Vergara

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I. Leachate & Landfill Gas Updates

a. Ms. Viswanathan reported that 107 pumps have been installed within the Condition 9(a) Reaction Area and 97 of these pumps are currently operational, while the remaining 10 pumps have been deactivated or are non-functional for a variety of reasons. 80 additional pumps are planned for installation within the 9(a) Reaction Area. She also reported Chiquita has completed all the well drilling within the 9(a) Reaction Area, for a total of 241 wells within this area.

b. Mr. Bolton used a PowerPoint slideshow to summarize the occurrence, location, causation, and subsequent corrective actions associated with leachate seeps and spills that have occurred since the last meeting. Mr. Bolton also led a discussion on Chiquita's efforts to prevent future leachate leaks.

c. Mr. Bolton reported that there has been an additional 1.8 acres covered by the geosynthetic cover since the previous meeting. The geosynthetic cover currently covers 43.7 acres. He also noted that all excavation activities for the west toe drain project have been completed, and all sumps have been installed. Mr. Bolton then led a discussion on the process for completing the installation and tie-in of the geosynthetic cover, including applying vacuum.

    i. **Outstanding Question:** Ms. Roberts inquired about the schedule for completing installation of the geomembrane cap.

        1. **Written Response:** Chiquita completed the installation of the geosynthetic cover as of December 27, 2024,

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)

a. Dr. Sanchez-Soria noted he is working with SCAQMD staff, SCS, and the Aeroqual air monitoring instrument manufacturer on notifications of Reference Exposure Limit (REL) exceedances due to false positives associated with field instrument restarts. He also led a discussion on working with EPA and EPA's contractor to incorporate data being collected by other contractors at the Castaic Middle School.

    i. **Outstanding Request:** Mr. Dutz requested documentation on the instrument deployed at the Castaic Middle School.

        1. **Written Response:** Dr. Sanchez-Soria followed up with SCAQMD staff with the requested instrumentation specifications.

b. Dr. Pleus stated that he had no updates related to the Odor Impacts Assessment, but was available for questions.

c. Mr. Sullivan presented the landfill gas flowrate matrix that has been adjusted to segregate the leachate tank vapor flow quantities. Mr. Haley explained circumstances related to the replacement of the variable frequency drive (VFD) for the combustion air blower on one flare unit and more generally discussed the power situation at the flare station.

d. Mr. Sullivan provided updates on the status of the installation and functioning of the new air monitoring stations using a location map and referring to the tracking matrix. He noted that all 10 units are deployed, activated, and data is being uploaded and recorded onto the website. He and Mr. Huff relayed detailed information regarding Starlink satellite upgrades, power connections, methane sensor malfunctions, and resolution of instrumentation issues at specific air monitoring stations. He also provided an update on the results of the flux chamber study.

    ii. **Outstanding Request:** Mr. Dutz inquired about a change to Chiquita's website pertaining to the sign-up form for the flare downtime notifications.

        1. **Written Response:** Chiquita's website team has revised Chiquita's main webpage to more clearly emphasize the link by which the public can sign up to receive the downtime notifications.

III. Reaction Area (e.g., temperatures, settlement)

a. Mr. Dick addressed the primary findings and conclusions presented in the Reaction Area boundary determination submitted on December 10, 2024. The topics included

temperature values recorded in the in-situ waste temperature monitoring probes (TMP), temperatures and gas composition values measured in the landfill gas wellheads, and the consistency of the delineated (data-driven) reaction area boundary. Mr. Dick reviewed and led a discussion on the most recent TMP temperature graphs, isothermal gradient range drawing, and wellhead carbon monoxide lab concentration data. He also provided a status update on the sonic drilling activities associated with new TMPs.

IV. Permitting

a. Mr. Sullivan provided updates and led a discussion on the various permitting efforts, utilizing the permit tracking matrix as a reference to facilitate the discussion.

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT M TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

Chiquita Canyon, LLC
Reaction Committee & SCAQMD Staff Monthly Meeting
Wednesday, January 15, 2025 at 10:00 am PT

AGENDA

I. Leachate & Landfill Gas Updates
   Presentation Leaders – Neal Bolton, PE & Vidhya Viswanathan, PE

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)
   Presentation Leaders – Dr. Pablo Sanchez-Soria, Dr. Rick Pleus & Pat Sullivan, BCES, CPP, REPA

III. Reaction Area (e.g., temperatures, settlement)
   Presentation Leader – Bob Dick, PE, BCEE

IV. Permitting
   Presentation Leader – Pat Sullivan, BCES, CPP, REPA

MEETING MINUTES

Attendees: *Reaction Committee, SCS & Chiquita — Bob Dick, Rick Pleus, Pablo Sanchez-Soria, Pat Sullivan, Vidhya Viswanathan, Neal Bolton, Ray Huff, Bill Haley, Kelli Hackney, Leigh Barton*

South Coast Air Quality Management District (SCAQMD) — John Anderson, Jason Aspell, Chris Chen, Nathaniel Dickel, Lizabeth Gomez, Christina Ojeda, Andrea Polidori, Mary Reichert, Kathryn Roberts, Angela Shibata, Gerado Vergara, Victor Yip, Amanda Sanders

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I. Leachate & Landfill Gas Updates

a. Mr. Bolton used a PowerPoint slideshow to summarize and lead a discussion on the occurrence, location, causation, and subsequent corrective actions associated with leachate seeps, spills, and leaks that have occurred since the last update.

b. Mr. Bolton also reported that the west slope toe drain installation and capping project was completed. More specifically, the geosynthetic cover portion was completed on 1/3/25. The steel plates along the western stormwater channel were being removed. Mr. Bolton and Mr. Haley also led a discussion on the process for increasing vacuum across the landfill now that the geosynthetic cover was installed.

c. Ms. Viswanathan reported that 109 pumps have been installed within the Condition 9(a) Reaction Area boundary. 101 of these pumps were currently operational, while the

remaining 8 pumps had been deactivated or were non-functional for a variety of reasons. She also reported that no drilling of landfill gas wells had occurred since 12/9/24 and that a total of 241 wells had been installed within the Condition 9(a) Reaction Area boundary.

II. Public Health & Air Monitoring Updates (health study, notifications, enhanced air monitoring)

a. Dr. Sanchez-Soria led a discussion on air monitoring equipment updates, explaining that the powering of the instrumentation was causing notifications of exceedances and retraction emails to be disseminated. He noted he was working with SCAQMD staff, SCS, and the instrument manufacturer on correcting these false notifications. He also provided an update on the work in progress with the U.S. Environmental Protection Agency (EPA) and EPA's contractor to incorporate data collected by air monitoring equipment at the Castaic Middle School on Chiquita's website.

b. Dr. Pleus stated that he had no updates related to the Odor Impacts Assessment.

c. Mr. Sullivan presented exhibits documenting the results of the most recent flux chamber study, which were excerpted from the report that would be submitted on January 15, 2025. He commented on the findings related to emissions measured during the flux chamber test and noted that the next testing event was scheduled for March 2025. He also stated the protocol for the next testing event had been submitted to SCAQMD.

d. Mr. Sullivan also presented the landfill gas flowrate matrix and explained the rationale regarding the increased modeled landfill gas generation value for 2025 compared to 2024. He also noted that they needed to update the model with the landfill's closure date.

e. Mr. Sullivan also provided updates on the status of the installation and functioning of the new air monitoring stations using a location map and referring to the air monitor tracking matrix. He provided commentary on the data being measured and recorded at the air monitoring stations. He and Mr. Huff also led a discussion on the incorporation of acrolein into the air monitoring stations.

III. Reaction Area (e.g., temperatures, settlement)

a. Mr. Dick addressed and led a discussion on the primary findings and conclusions presented in the Reaction Area boundary determination submitted on January 10, 2025. The topics included temperature values recorded in the in-situ waste temperature probes (TMPs), temperatures and gas composition values measured in the landfill gas wellheads, and the consistency of the delineated (data-driven) boundary. Mr. Dick reviewed the most recent TMP temperature graphs, isothermal gradient range drawing, and wellhead carbon monoxide lab concentration data. He also provided a status update on the sonic drilling activities associated with new TMPs that are in the process of being installed.

IV. Permitting

a. Mr. Sullivan provided updates on the various permitting efforts, utilizing the permit tracking matrix as a reference to facilitate the discussion.

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT N TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

Chiquita Canyon, LLC
Reaction Committee & SCAQMD Staff Monthly Meeting
Wednesday, February 19, 2025 at 10:00 am PT

AGENDA

I. Leachate & Landfill Gas Updates
   Presentation Leaders – Neal Bolton & Bill Haley, PE

II. Public Health & Air Monitoring Updates (e.g., notifications, enhanced air monitoring)
   Presentation Leaders – Dr. Pablo Sanchez-Soria, Dr. Rick Pleus & Pat Sullivan, BCES, CPP, REPA

III. Reaction Area (e.g., temperatures, settlement)
   Presentation Leaders – Bob Dick, PE, BCEE

IV. Permitting
   Presentation Leader – Pat Sullivan, BCES, CPP, REPA

MEETING MINUTES

Attendees: *Reaction Committee, SCS Engineers & Chiquita — Bob Dick, Rick Pleus, Pablo Sanchez-Soria, Pat Sullivan, Neal Bolton, Ray Huff, Bill Haley, Kelli Hackney, Leigh Barton*

South Coast Air Quality Management District (SCAQMD) & California Air Resources Board — John Anderson, Chris Chen, Nathaniel Dickel, Stephen Dutz, Lizabeth Gomez, Ryan Mansell, Mary Reichert, Kathyrn Roberts, Amanda Sanders, Victor Yip, Angela Shibata, Jeff Lindberg, Larry Israel, Nancy Fletcher

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I. Leachate & Landfill Gas Updates

a. Mr. Bolton used a PowerPoint slideshow to summarize the occurrence, location, causation, and subsequent corrective actions associated with leachate seeps, leaks, and spills that have occurred since the last update. He also presented and led a discussion on ongoing training activities related to the observed and repaired leachate spills and leaks, and on leachate spills vs leaks. In response to a request made by Ms. Roberts, Mr. Bolton is reviewing and analyzing the prior leachate spill and leak logs, and will present on the results of this review and analysis at the next meeting, as well as at future meetings.

b. Mr. Bolton reported that the west slope toe drain capping project has been completed.

c. Mr. Haley noted that no landfill gas (LFG) well drilling has occurred since the last monthly meeting as the Landfill has hit the density requirements for wells in the reaction area. LFG well drilling is suspended until there is a need for redrills or further expansion. He

announced that the replacement/expansion of LFG header piping is ongoing, and the final sump for the expansion of the west slope header was pending installation. Also, construction crews are installing the road crossing near the sulfur treatment vessels. Mr. Haley also provided an update on planned and unplanned flare shutdowns, new flare procurement status, and the status of the installation of additional wellfield dewatering pumps.

II. Public Health & Air Monitoring Updates (e.g., notifications, enhanced air monitoring)

a. Dr. Sanchez-Soria provided an update and led a discussion on the notification system and the results of testing the instrumentation upon reactivation after power outages. He also commented and addressed questions on the integration of the middle school air monitoring instrumentation with the existing database that was requested by SCAQMD staff.

b. Dr. Pleus stated that he had no updates related to the Odor Impacts Assessment.

c. Mr. Sullivan presented the landfill gas flowrate matrix and noted the impacts on the overall and LFG flowrate of planned and unplanned flare shutdowns for maintenance. Mr. Sullivan also provided updates on the status of the installation, maintenance on, and functioning of the new air monitoring stations, specifically the connections to Starlink satellite and to grid and backup power supplies, referring to the tracking matrix. He then provided commentary on the data being measured and recorded at the specific air monitoring stations, including during periods of LFG system shutdown, which will be included in the study that will be completed and submitted to SCAQMD in March.

III. Reaction Area (e.g., temperatures, settlement)

a. Mr. Dick addressed and led a discussion on the primary findings and conclusions presented in the Reaction Area Boundary Determination submitted to South Coast AQMD on February 10, 2025. The topics included temperature values recorded in the in-situ waste temperature probes, temperatures measured in the landfill gas wellheads, and concentrations of various constituents in the LFG being collected from certain LFG wells. Mr. Dick reviewed the most recent temperature monitoring probe (TMP) temperature graphs, isothermal gradient range drawing, and wellhead carbon monoxide lab concentration data. He also presented the initial temperature values being recorded within the new TMPs.

IV. Permitting

a. Mr. Sullivan provided updates on the various permitting efforts, utilizing the permit tracking matrix as a reference to facilitate the discussion.

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT O TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

Chiquita Canyon, LLC
Reaction Committee & SCAQMD Staff Monthly Meeting
Wednesday, March 19, 2025 at 10:00 am PT

AGENDA

I. Leachate & Landfill Gas Updates
   Presentation Leaders – Neal Bolton, PE & Vidhya Viswanathan, PE

II. Public Health and Air Monitoring Updates (notifications, enhanced air monitoring)
   Presentation Leaders – Dr. Pablo Sanchez-Soria, Dr. Rick Pleus, & Pat Sullivan, BCES, CPP, REPA

III. Reaction Area (e.g., temperatures, settlement)
   Presentation Leader – Bob Dick, PE, BCEE

IV. Permitting
   Presentation Leader – Pat Sullivan, BCES, CPP, REPA

MEETING MINUTES

Attendees: *Reaction Committee, SCS & Chiquita—Neal Bolton, Bob Dick, Kelli Hackney, Bill Haley, Ray Huff, Dr. Rick Pleus, Pablo Sanchez-Sori, Pat Sullivan, Vidhya Viswanathan, Jake Duginski*

South Coast Air Quality Management District (SCAQMD) & California Air Resources Board—John Anderson, Baitong (Chris) Chen, Nathaniel Dickel, Stephen Dutz, Lizabeth Gomez, Ryan Mansell, Christina Ojeda, Andrea Polidori, Kathyrn Roberts, Amanda Sanders, Nancy Fletcher, Jeff Lindberg

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I. Leachate & Landfill Gas Updates

a. Mr. Bolton used a PowerPoint slideshow to summarize the occurrence, location, causation, and subsequent corrective actions associated with leachate seeps, leaks, and spills that have occurred since the last update. In response to a request from SCAQMD during the February meeting, he used a separate PowerPoint slideshow to present the findings and conclusions for the spill/leak analysis, which evaluated events from September 2024 through March 13, 2025 and outlined the definitions for the terms “spill” and “leak”. In response to a request made by Ms. Roberts, Mr. Bolton is investigating whether there is a change in policy after each spill/leak event, and will present on this issue at the next meeting.

b. Ms. Viswanathan presented the specific number of pumps that are installed within, as well as outside, the boundary prescribed in Condition 9(a) of the Stipulated Order

and identified and led a discussion on the operational versus non-operational pump count. She also addressed the number of additional pumps that are pending installation. She noted that no landfill gas (LFG) well drilling has occurred since December 2024 and provided an update regarding the status of drilling and installation of the additional temperature monitoring probes (TMPs).

II. Public Health and Air Monitoring Updates (notifications, enhanced air monitoring)

a. Dr. Sanchez-Soria provided an update and led a discussion on an exceedance communicated by the air monitoring notification system. He also commented on the ongoing coordination with SCAQMD personnel related to deployment of air monitoring instrumentation at the Castaic Middle School.

b. Dr. Pleus stated that he had no updates related to the Odor Impacts Assessment.

c. Mr. Sullivan presented the landfill gas flowrate matrix and noted the impacts on the overall gas quantities and LFG flowrate of planned and unplanned flare shutdowns for maintenance. He also discussed the Reaction Committee's rationale for re-mobilizing a second portable thermal oxidizer (TOX) to the site. He commented on the flux chamber testing event that was occurring during the week of March 17th and explained that this is the initial testing event in which the Reaction Area is being bifurcated into a "capped" section and an "uncapped" section. Mr. Sullivan also provided updates on the status of the installation, maintenance, and functioning of the new air monitoring stations, specifically the acrolein modules, referring to the tracking matrix. He then provided commentary on the data being measured and recorded at the air monitoring stations, including during periods of LFG system downtime, which is included in the study that was completed and submitted to SCAQMD in March.

III. Reaction Area (e.g., temperatures, settlement)

a. Mr. Dick addressed and led a discussion on the primary findings and conclusions presented in the Reaction Area Boundary Determination submitted to SCAQMD on March 10, 2025. The topics included temperature values recorded in the in-situ waste temperature probes, temperatures measured in the landfill gas wellheads, and concentrations of various constituents in the LFG being collected from certain LFG wells. Mr. Dick reviewed the most recent TMP temperature graphs, isothermal gradient range drawing, and wellhead carbon monoxide lab concentration data. He also presented the temperature values being recorded within the new TMPs. In response to a request from SCAQMD staff, the viewport of the isothermal gradient range drawing will be expanded in future determination submittals.

IV. Permitting

a. Mr. Sullivan provided updates on the various permitting efforts, utilizing the permit tracking matrix as a reference to facilitate the discussion.

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT P TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT P TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

From: Leigh S. Barton
Sent: Tuesday, December 24, 2024 1:29 PM
To: Kathryn Roberts; Mary Reichert; Ryan Mansell
Cc: Megan L. Morgan; Jake Duginski
Subject: South Coast AQMD v. Chiquita Canyon, LLC (Case No. 6177-4) - Condition 66(a)(v) Compliance

Kathryn, Mary, and Ryan,

This email on behalf of Chiquita Canyon, LLC confirms compliance with Condition 66(a)(v) of the Stipulated Order for Abatement in Case No. 6177-4, requiring installation and operation of a remote monitoring system for temperature in at least 20 wellheads.

Best regards,
Leigh

Leigh S. Barton
She | Her | Hers
Associate

Beveridge & Diamond

1900 N Street, NW, Suite 100 ~ Washington, DC 20036 ~ bdlaw.com
O +1.202.789.6051 ~ M +1.617.755.3507 ~ LBarton@bdlaw.com

BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,

Petitioner,

vs.

CHIQUITA CANYON, LLC a Delaware Corporation,
[Facility ID No. 119219]

Respondent.

Case No. 6177-4

EXHIBIT Q TO DECLARATION OF ROBERT DICK, P.E., B.C.E.E

Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150

Hearing Date:	April 16 and 17, 2025
Hearing Time:	9:30 A.M.
Place:	Hearing Board South Coast Air Quality Management District, 21865 Copley Drive Diamond Bar, CA 91765

Proposal to Assess the Viability and Functionality of Landfill Gas Wellfield Automated Remote Monitoring System

Chiquita Canyon Landfill
Castaic, California
SCAQMD Facility No. 119219

Waste Connections
29201 Henry Mayo Drive
Castaic, CA 91384

Submitted to:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
909-396-2000

SCS ENGINEERS

01204123.21-13 | January 31, 2025

15521 Midlothian Turnpike, Suite 305
Midlothian, VA 23113
804-378-7440

Table of Contents

Section Page

INTRODUCTION

Chiquita Canyon, LLC (Chiquita) operates a municipal solid waste (MSW) landfill/solid waste disposal facility located in Castaic, California, under South Coast Air Quality Management District (SCAQMD) Facility No. 119219. The Reaction Committee prepared this Proposal to Assess the Viability and Functionality of Landfill Gas Wellfield Automated Remote Monitoring System on behalf of Chiquita in accordance with Condition No. 66(a)(vi) of the Modified Stipulated Order of Abatement (SOFA) (Case No. 6177-4) pertaining to the Chiquita Canyon Landfill (CCL, Facility, or Landfill). This Proposal presents the proposed Work Plan to conduct a field test to assess the viability and functionality, as well as feasibility, of certain instrumentation, equipment, telemetry, and control components that may be suitable for a remote monitoring system (RMS) for the automated remote measurement of temperature and pressure within landfill gas (LFG) extraction wells with pumps located within the Reaction Area. Accordingly, this Proposal serves as a test protocol outlining the proposed activities anticipated for this pilot feasibility study and is referenced herein as the Test Protocol.

Condition No. 66(a)(vi) of the Modified SOFA requires:

> *By January 31, 2025, the Reaction Committee shall submit a proposal to assess the viability and functionality of a remote monitoring system which measures temperature and pressure within a well with a pump located within the Reaction Area, including assessment of multiple depths within the well (e.g. shallow, middle, and deep). The Proposal shall be submitted to Baitong Chen [bchen@aqmd.gov]; Nathaniel Dickel [ndickel@aqmd.gov]; Christina Ojeda [cojeda@aqmd.gov] for review. Upon approval by South Coast AQMD, Respondent shall conduct the feasibility assessment. The Reaction Committee shall submit a final report to the South Coast AQMD (to Baitong Chen [bchen@aqmd.gov]; Nathaniel Dickel [ndickel@aqmd.gov]; Christina Ojeda [cojeda@aqmd.gov]) detailing the results of the feasibility study, and recommendations on further deployment of the remote monitoring system not later than 150 days from the approval of the feasibility proposal.*

Previous documentation prepared in accordance with various provisions of the Modified SOFA that address automated RMS equipment for LFG wells and wellheads, and which serve as references to this Test Protocol and provide background information on the anticipated viability, functionality, and feasibility, of certain components, include the following:

- **LFG Wellfield Automated Remote Monitoring Plan, prepared by SCS Engineers, dated 4/19/24.** This Plan was prepared in accordance with a prior version of SOFA Condition 66 and identified the applicable operational parameters of LFG extraction wells and wellheads, outlined the purpose and objectives for the remote monitoring of these operational parameters, discussed specific monitoring instrumentation and equipment, and presented the Reaction Committee's recommendations for implementation of a remote monitoring system at the Landfill.

- **Response to South Coast Air Quality Management Stipulated Order for Abatement in Case No. 6177-4 Condition 66(a)(ii), prepared by SCS Engineers, dated 9/17/24.** This correspondence outlined the anticipated issues and concerns associated with the design, specification, installation, and implementation of remote monitoring of the LFG wellfield and identified the six primary system components being considered. The correspondence included evidence of communication with system, device, and component vendors/manufacturers and/or contractors, and also commented on supply chain and lead times.

- **Response to South Coast Air Quality Management Stipulated Order for Abatement in Case No. 6177-4 Condition 66(a)(iii), prepared by SCS Engineers, dated 10/11/24**. This correspondence provided documentation of continued communications with vendors, manufacturers, and distributors of RMS components.

- **Landfill Gas Well Selection for Installation of Remote Monitoring System Equipment, prepared by the Reaction Committee, dated 10/15/24.** This correspondence presented the Reaction Committee's determination on the locations for installation of the initial RMS equipment, which involved twenty (20) LFG wells to be equipped with temperature measurement instrumentation and associated telemetry equipment, in accordance with Condition 66(a)(v). This determination included a review of background information and a discussion of the criteria and field conditions that were considered by the Reaction Committee in selecting these locations.

This Test Protocol presents the proposed activities, including field installation as well as data review and validation, planned to facilitate the assessment of the viability, functionality, and feasibility of the six (6) primary RMS components (along with ancillary instrumentation, equipment, and controls) that have been specified and selected as described in the reference documentation noted above. This Test Protocol also presents a proposed schedule to accomplish the pilot feasibility study.

The objectives of this pilot feasibility study are noted below:

- Assess the technical feasibility of installation of RMS components into wells and wellheads with a pump positioned within the Reaction Area, including assessment of multiple depths within the well (e.g., shallow, middle, and deep);

- Evaluate the viability, functionality, performance, and reliability of RMS instrumentation and equipment under varying operational conditions;

- Identify potential criteria for selection of well locations;

- Assess and validate measurements and monitoring data received from RMS instrumentation; and,

- Assess operational protocols for RMS components to be implemented beyond this pilot feasibility study.

INSTALLED REMOTE MONITORING SYSTEM EQUIPMENT

Chiquita and SCS Engineers (SCS) have previously installed the following RMS equipment to enable automated remote measurement of certain LFG system operational parameters, as well as in-situ subsurface waste temperatures within separate temperature monitoring probes at the Landfill:

- RMS equipment was installed and is in operation to measure temperature in 20 wellheads operated in the Initial Reaction Area, in accordance with SOFA Condition 66(a)(v), consistent with the Reaction Committee's October 15, 2024 submittal. Stainless steel-encased temperature transmitters were installed at the twenty (20) LFG wellheads in December 2024 to measure and record the temperature of landfill gas flowing through these wellheads. A battery-powered cellular IIoT device is installed and in operation at each wellhead.

- Pressure transmitters were installed at five (5) locations within header pipes in October 2024 to measure vacuum within the LFG collection piping network. A cellular IIoT device and solar power system are installed and in operation at each sensor insertion point.

- High-temperature thermocouples equipped with magnesium oxide-filled stainless-steel tubing to house the signal wire are positioned at various depth intervals within twenty (20) temperature monitoring probes (TMPs) that were installed in March and April 2024. Some of the TMPs are co-located within a common borehole with vertical LFG extraction well riser pipes. A cellular IIoT device, remote input card, and solar power system are installed and in operation at each probe.

- Submersible liquid level transmitters were inserted into six (6) wells/TMPs to enable measurement of liquid levels in October through December 2024.

PROPOSED PILOT FEASIBILITY STUDY ASSESSING RMS INSTRUMENTATION, EQUIPMENT, AND CONTROLS

The Reaction Committee proposes to assess this RMS through this pilot feasibility study, which involves procurement and installation of the referenced RMS instrumentation, equipment, and controls, and other components, will be procured and installed within approximately five (5) wells within the Reaction Area that are equipped with pumps at the locations identified in this Test Protocol. The data will be reviewed and analyzed as outlined in this Test Protocol and the viability, functionality, and performance of the components in use will be assessed. Future implementation of these components will be assessed and a report will be prepared and submitted to the SCAQMD. The pilot feasibility study will assess the viability, functionality, and feasibility of the following six (6) primary system components as further described in the reference documentation noted above. These six components are summarized as:

- Component 1: three (3) down-well thermocouples to measure temperature at varying depths.

- Component 2: one (1) down-well liquid level transmitter to measure liquid level within the well.

- Component 3: one (1) top-mounted pressure transmitter to measure vacuum applied within the upper region of the well casing pipe; this is a single pressure transmitter on top of the well riser pipe, which is where the wellhead is positioned, and does not involve suspending multiple pressure transmitters into the well casing pipe.

- Component 4: one (1) industrial cellular IIoT device to gather data from the sensors and transmit it to SCS' cloud-based Supervisory Control and Data Acquisition system for remote monitoring, alarming, and reporting.

- Component 5: remote input cards to gather data from the sensors and transmit it to the IIoT device.

- Component 6: one (1) solar power system to source DC power for the sensors and IIoT device.

ASSESS TECHNICAL FEASIBILITY OF INSTALLATION AND FUNCTIONALITY OF RMS INSTRUMENTS AND EQUIPMENT

Down-Well Temperature Measurement

As discussed in the reference documentation, the selected Component 1 devices are thermocouples encased in a stainless steel tubing jacket with powdered magnesium oxide in the interstitial space and suspended into the well casing pipe at multiple depths to measure fluid (gas or liquid) temperatures. These thermocouples have been observed to yield suitable performance for greater than one year but have exhibited failures due to a variety of factors at other elevated temperature landfill temperature monitoring locations. Thermocouples will be suspended at 40-foot, 80-foot, and 120-foot-depth intervals. The thermocouples will be encased within stainless steel tubing within the well so that the wiring is not exposed to landfill gas or landfill liquids. The tubing will be attached to the well using compression fittings in the top flange to prevent leaks and reduce the potential for fugitive emissions/odors. The wiring will be connected into the RMS panel.

Liquid Level Measurement

As discussed in the reference documentation, the selected Component 2 device is a submersible electronic level transmitter to measure the hydrostatic head pressure of liquid present above the sensor elevation. This accomplishes pressure measurement from a position below the leachate surface within the well rather than applied vacuum above the leachate surface. The transmitter will be suspended no closer than 20 feet above the well bottom and be equipped with a signal cable attached to the well using a compression fitting in the top flange to prevent leaks and reduce the potential for fugitive emissions or odors. The cable will connect into the RMS panel.

Pressure Measurement

As discussed in the reference documentation, the selected Component 3 device is a fixed electronic pressure transmitter to measure the applied vacuum on the well side of the wellhead control valve. Gas cooling adapters will be utilized to provide additional protection against high temperature failure of the pressure transmitters. This single transmitter device will be positioned within the wellhead or top flange of the well cap, which is at the top of (and within) the well casing pipe and obtains measurements within the interior of the well, but is not suspended below ground surface. A fixed pressure sensor will be utilized to seek to avoid potential interference during routine tuning and balancing efforts as well as common pump servicing and replacement and other maintenance activities involving the wellhead components. One pressure transmitter will be installed at each selected wellhead. The transmitter will be threaded into the wellhead and the cable from it will connect into the RMS panel. Recognizing the selected wellheads are constructed of steel piping, a new well cap will likely need to be equipped with the necessary fittings to avoid drilling, tapping, and threading into steel pipe.

Industrial IIoT Device and Remote Input Cards

Remote input cards will be utilized to collect the data from the transmitters and send it to the cellular IIoT device. The cellular IIoT device will transmit data back to SCS' SCSRMC.com cloud-based Supervisory Control and Data Acquisition platform. SCS is already utilizing these devices at CCL and multiple other landfill sites.

Solar Power System

SCS has designed the solar power systems for this project to provide power to the sensors and the cellular IIoT devices at each location. Solar-powered systems designed by SCS are also already being utilized at CCL and multiple other landfill sites.

ASSESS PERFORMANCE, VIABILITY, AND RELIABILITY OF INSTRUMENTS UNDER VARYING REACTION AREA CONDITIONS

The above-described reference documents raise issues and concerns associated with the viability, functionality, and feasibility of installation and operation of the RMS instrumentation, equipment, and controls at the Landfill. The suspension of the Component 1 thermocouples down the well casing piping, the insertion of the Component 2 liquid level transducer to a position near the bottom of the wells, and the insertion of the Component 3 pressure transducer into the wellheads present short- and long-term risks, including but not limited to potential malfunctioning and/or failure attributable to the various conditions within the wells and wellheads, interference with pumping systems, and disturbances associated with well maintenance.

The potential Reaction Area conditions to be observed and assessed include, but are not limited to:

- **Elevated Temperatures:** Component 1, 2, and 3 devices will be exposed to gaseous-phase and liquid-phase fluids with temperatures exceeding 200 degrees Fahrenheit or greater. This Pilot Feasibility Study will observe and assess the performance, reliability, viability, longevity, and resilience of these sensors and the associated signal wires to withstand the atypical heat that is present within wells located within the Reaction Area.

- **Fouling and Debris Build-Up:** Component 1, 2, and 3 devices will be exposed to liquids and/or foam with excessive solids (suspended and dissolved) content. These sensors are likely to experience formation and accumulation of precipitate, calcification, sludge, gelatinous “goo”, grit, grime, and/or aggregation of other solid material that may impede accurate measurement of temperature and pressure. This Pilot Feasibility Study will observe and assess the performance, reliability, viability, longevity, and resilience of these sensors and the associated signal wires to withstand the potential fouling and build-up of solids that are present within wells located within the Reaction Area

- **Chemical Compatibility:** Component 1, 2, and 3 devices will be exposed to liquids, gases, and/or foam that have been known to cause premature failure of equipment and sensors due to chemical compatibility issues and may therefore be incompatible with these RMS component devices. The sensors may corrode, deteriorate, or otherwise be rendered non-functional due to the chemicals present in the liquids and/or foam. Even commonly used and trusted corrosion-resistant materials used for electronic instrumentation such as Type 316 stainless steel have been known to dissolve or experience pitting in similar elevated temperature landfill situations. This Pilot Feasibility Study will observe and assess the performance, reliability, viability, longevity, and resilience of these sensors and the associated signal wires to withstand the potential chemical compatibility issues that are present within wells located within the Reaction Area.

- **Entanglement and Interference with Dewatering Pump Operations and Maintenance:** Component 1, 2, and 3 devices will be suspended in active dual phase extraction wells

where pumps and pumping infrastructure are present and in operation. These pumps require maintenance so that they can continue to operate effectively. To maintain the pumps, they must be removed from the well, cleaned and/or replaced, and reinserted. Component 1, 2, and 3 devices could potentially be damaged by these necessary pump maintenance activities. Furthermore, the pump and its associated tubing, wiring, etc., may become entangled with the down-well sensors, Components 1 and 2, which could damage and/or destroy the pump in addition to Components 1 and 2, potentially rendering the pump unmovable and causing the dual phase extraction well to be ineffective, forcing its abandonment. This Pilot Feasibility Study will observe and assess any entanglement and interference with dewatering pump operations and maintenance within wells located within the Reaction Area.

LOCATION AND CRITERIA FOR SELECTION OF WELLS

The Committee has evaluated the existing LFG wells at the Landfill that serve as potential candidates to receive the RMS equipment for the pilot study. Criteria to select wells for RMS pilot implementation included spatial variability, presence of a pump, range of temperature, pressurized leachate release, and well piping material. Based on this criteria, the following wells are selected for pilot study:

- CV-2306
- CV-2338
- CV-24038
- CV-24126
- CV-24140

VALIDATION OF DATA RECEIVED FROM RMS

Data integrity checks will be performed every four weeks on an interim basis during the Assessment Period phase, which is after installation and commissioning of the RMS and during the duration of this pilot study. The checks will be performed by, for example, comparing the temperature, pressure, and liquid level measurements recorded using the automated remote instrumentation with the manual measurements and the historical trends. These manual measurement results will be compared to the data reported by the RMS directly preceding the manual measurements. These data integrity checks are distinctly different than the Data Review and Validation and Report phase performed after the conclusion of the Assessment Period.

The real time data from transmitters and thermocouples will be monitored for stability and repeatability, and any outliers or inconsistencies will be used to improve the system.

Sensors will be factory-calibrated as appropriate before installation.

ASSESS FUTURE RMS IMPLEMENTATION

The Reaction Committee will review the results of the pilot feasibility study, prepare a report detailing the results of the study, and make recommendations regarding further use of the RMS at CCL. This report with recommendations will be submitted not later than 150 days from the SCAQMD's approval of this feasibility proposal.

PILOT FEASIBILITY STUDY SCHEDULE

The timeframes associated with each task presented below are referenced from the date of the SCAQMD's approval of this Test Protocol and assume the quantity for deployment of RMS components under this pilot feasibility study will be approximately five (5) wells:

- 8 weeks - Procurement of RMS instrumentation, equipment, and controls
- 2 weeks – Field Installation
- 8 weeks – Assessment Period
- 3 weeks – Data Review and Validation and Report