

12 de junio de 2024

Steve Cassulo
Gerente de Distrito
Vertedero de Chiquita Canyon
29201 Henry Mayo Drive
Castaic, CA 91384

Asunto: Respuesta a la revisión de LEA sobre la actualización semanal del Plan de Monitoreo de Temperatura para la Medida de Mitigación #1B en el Vertedero de Chiquita Canyon, Castaic, California

Estimado Sr. Cassulo:

El 29 de mayo de 2024, Chiquita Canyon, LLC (Chiquita) recibió una carta de respuesta del Programa de Gestión de Desechos Sólidos del Departamento de Salud Pública del Condado de Los Ángeles, que actúa como Agencia de Cumplimiento Local (LEA) que en su requerimiento 3b indicaba la instalación de tres (3) sondas de monitoreo de temperatura adicionales para evaluar la potencial expansión de la reacción y propagación del calor asociado en la subsuperficie. Este requerimiento se basa en que la LEA cree que la zona reactiva se está extendiendo hacia el sur en áreas fuera del límite de la zona reactiva previamente definida. El 31 de mayo de 2024 Chiquita y SCS Engineers (SCS) tuvieron una reunión con la LEA y con CalRecycle para analizar el requerimiento y agregar 3 sondas de monitoreo de temperatura (TMPs) cerca de la zona identificada y SCS proporcionó datos que indicaban que la zona reactiva no se estaba expandiendo. Como se indicó en la Orden de Cumplimiento de la LEA del 6 de junio de 2024, la LEA le indicó a Chiquita durante la reunión que responda antes del 12 de junio de 2024 con un plan de instalación, una propuesta alternativa o una justificación por la que no debería tomar acción, en base a la información compartida en esa reunión. Mediante este documento, SCS le está proporcionando a Chiquita la siguiente justificación por la que no se debería tomar acción, basada en la información compartida en la reunión del 31 de mayo de 2024.

Todos los meses SCS realiza la toma y revisión de datos, para determinar si cambiaron los límites de la Zona Reactiva, como se definen en la Orden de Depuración Estipulada en el Distrito de Gestión de la Calidad del Aire de la Costa Sur (SCAQMD). El Comité de Reacción, formado por expertos bajo la Orden Estipulada, analiza en mayor profundidad y presenta estas determinaciones mensuales al SCAQMD. Estas determinaciones también se encuentran en el sitio web de Chiquita. Como parte de esta revisión mensual, SCS considera los siguientes factores para determinar el límite estimado de la zona reactiva:

- Temperaturas del cabezal del pozo de biogás (LFG) que exceden aproximadamente los 160 grados Fahrenheit.
- Mala calidad del gas (definido como niveles de metano inferiores al 30 por ciento) junto con proporciones de metano-dióxido de carbono (CH₄:CO₂) inferiores a 1.0.

- La concentración de hidrógeno (H₂) en el LFG que mide más del 2 por ciento por volumen.
- Asentamiento acelerado de la superficie del vertedero, definida como aproximadamente 6 pulgadas o más dentro de un período de 60 días y grietas en la cubierta del vertedero.
- Observaciones de primera mano del Vertedero de Chiquita Canyon (el Vertedero) y/o del personal de campo de ingeniería, construcción y operaciones y mantenimiento de SCS que está en el sitio: 1) exceso atípico de cantidades de lixiviados (presencia y cantidad de líquidos); 2) instancias de líquidos presurizados que salen de la superficie del Vertedero, de pozos durante la perforación y de pozos de LFG; y 3) las características de los olores que se originan en áreas selectas de la huella de desechos (generalmente descritas como "similares a productos químicos" y distintivamente diferentes al LFG típico u olores del trabajo del vertedero).
- Observaciones de condiciones y características de los desechos de la subsuperficie como se indica en los registros de perforación del pozo para nuevos pozos y/o TMPs, recién instalados.
- Temperaturas iniciales de la subsuperficie registradas en las TMPs de desechos in-situ que se pusieron en abril de 2024.

La determinación que abarca el mes de mayo de 2024, presentada al SCAQMD el 7 de junio de 2024 indicaba que actualmente no hay datos que respalden la declaración de que la zona reactiva se está moviendo y expandiendo. Además, los ejercicios mensuales de desarrollar la determinación para el período que va de septiembre de 2023 a mayo de 2024 han indicado de forma consistente que no hay evidencia que indique que la reacción (o el calor asociado) haya migrado al área identificada por la LEA para las 3 TMPs adicionales. La determinación sobre la Zona Reactiva de mayo y las dos determinaciones de las zonas reactivas mensuales previas (presentadas el 5 de abril y el 7 de mayo de 2024) se adjuntan como **Anexo A**. Estos informes descubrieron todos que no hay otras temperaturas en cabezales de pozos de LFG que excedan los 160 grados o pozos que exhiban mala calidad del gas fuera de la zona reactiva durante los meses en los que se elaboraron los informes. No hay observaciones de primera mano sobre las características de la reacción durante las operaciones normales ni durante la caracterización de los desechos durante la perforación de pozos de LFG.

Como se analizó en la reunión con la LEA y con CalRecycle, mientras que el área de asentamiento parece haberse expandido hacia el sur y hacia el este en el informe semanal sobre las cubiertas presentado el 14 de mayo de 2024, al compararlo con los informes de las semanas anteriores, SCS investigó esta supuesta área de asentamiento expandida y puede dar fe de que el cambio en la elevación de la superficie en esta área no se atribuye a la expansión de la reacción, sino a un asentamiento típico asociado a la consolidación de sólidos y lo que normalmente se esperaría de una zona en la que se están bombeando líquidos agresivamente con los trabajos de desagüe del Vertedero. Además, se observaron equipos de movimiento de tierra y excavadoras que se estaban utilizando para establecer un drenaje de aguas pluviales positivo en la zona, utilizando imágenes de dron Propeller, algo que también respalda la idea de que la zona se estaba reformando y reclasificando y que no estaba experimentando asentamientos asociados al asentamiento extremadamente acelerado de las condiciones de la reacción. SCS continuará monitoreando esto muy de cerca, para evaluar si las elevaciones de la superficie están presentando un asentamiento acelerado que pueda ser un indicativo de la expansión de las condiciones del evento de Vertedero de Temperatura Elevada en dirección sudeste.

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Se observaron las TMPs de la subsuperficie puestas en marcha durante abril de 2024 para ver si presentaban temperaturas elevadas y las temperaturas en el intervalo más profundo en TMP-09 y TMP-03 dentro de la zona reactiva están por encima de los 220 grados. TMP-08 y TMP-10 se encuentran aproximadamente 300 pies más cerca de la zona reactiva que el área notada por la LEA en su carta del 29 de mayo. Tanto TMP-08 como TMP-10 midieron temperaturas por debajo de los 145 grados en todos los intervalos de profundidad, que es lo típico para la descomposición de desechos normal, dando evidencia de que no había presente ninguna reacción en esta zona. Si la reacción hubiera crecido en el lugar de inquietud de la LEA, tanto TMP-08 como TMP-10 habrían indicado temperaturas más altas antes.

Se seguirán evaluando los límites de la zona reactiva todos los meses, para monitorear los límites de la reacción y para determinar si se está expandiendo. En base a la evidencia compilada y evaluada en los últimos nueve meses y a las determinaciones asociadas, no hay condiciones de reacción más allá del límite previamente establecido y no se necesitan otras TMPs u otras acciones en la zona indicadas por la LEA. Si tiene alguna pregunta no dude en comunicarse con el firmante llamando al (303) 221-1719.

Atentamente,

Bob Dick
Vicepresidente Sénior
SCS Engineers

William C. Haley, PE
Director del Proyecto
SCS Engineers

Cc:

Kelly Kincella, Chiquita Canyon, LLC
Nicole Ward, Chiquita Canyon, LLC
Amanda Froman, Chiquita Canyon, LLC
Michael Hearn, Chiquita Canyon, LLC
Pat Sullivan, SCS Engineers
Cornelius Fong, SCS Engineers
Ray Huff, SCS Engineers
Srividhya Viswanathan, PE, SCS Engineers
William Haley, PE, SCS Engineers
Robert Ragland, Departamento de Salud Pública del Condado de Los Ángeles
Liza Frías, Departamento de Salud Pública del Condado de Los Ángeles
Nichole Quick, M.D., Departamento de Salud Pública del Condado de Los Ángeles
Shikari Nakagawa-Ota, Departamento de Salud Pública del Condado de Los Ángeles
Ken Habaradas, LEA del Condado de Los Ángeles
Eric Morofuji, LEA del Condado de Los Ángeles
Renee Jensen, Asesor de LEA
Blaine McPhillips, Asesor Suplente Sénior del Condado

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Emiko Thompson, Departamento de Obras Públicas del Condado de Los Ángeles
Alex Garcia, Departamento de Planificación Regional del Condado de Los Ángeles
Ai-Viet Huynh, Departamento de Planificación Regional del Condado de Los Ángeles
Wes Mindermann, CalRecycle
Janelle Heinzler, CalRecycle
Jeff Lindberg Junta de Recursos de Aire de California
Vanessa Águila, Junta de Recursos de Aire de California
Jack Cheng, Consejo de Gestión de la Calidad del Aire de la Costa Sur
Larry Israel, Consejo de Gestión de la Calidad del Aire de la Costa Sur
Douglas Cross, Junta Regional de Control de Calidad del Agua de Los Ángeles
Thanne Berg, Agencia de Protección Ambiental de Estados Unidos

Sr. Steve Cassulo
12 de junio de 2024
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Adjunto A

April 5, 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 March 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 4/3/24. 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. As presented on the Drawing, 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 serving as the basis for considering adjustments and modifications to the Reaction Area boundary (or the determination to maintain the decreed boundary), include:
 - Landfill gas (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 (CH₄:CO₂) ratios less than 1.0.
 - The concentration of hydrogen (H₂) in the LFG measured greater than 2 percent by volume.
 - Accelerated settlement of the landfill surface, defined as approximately 6 inches or greater within a 60-day period, and cracks in landfill cover.

Mr. Baitong Chen

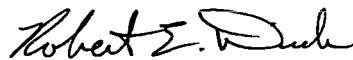
April 5, 2024

Page 2

- 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.
- Upon completion of probe and instrumentation installation activities, the subsurface temperatures recorded at the in-situ waste temperature probes will be considered.
- 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.

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



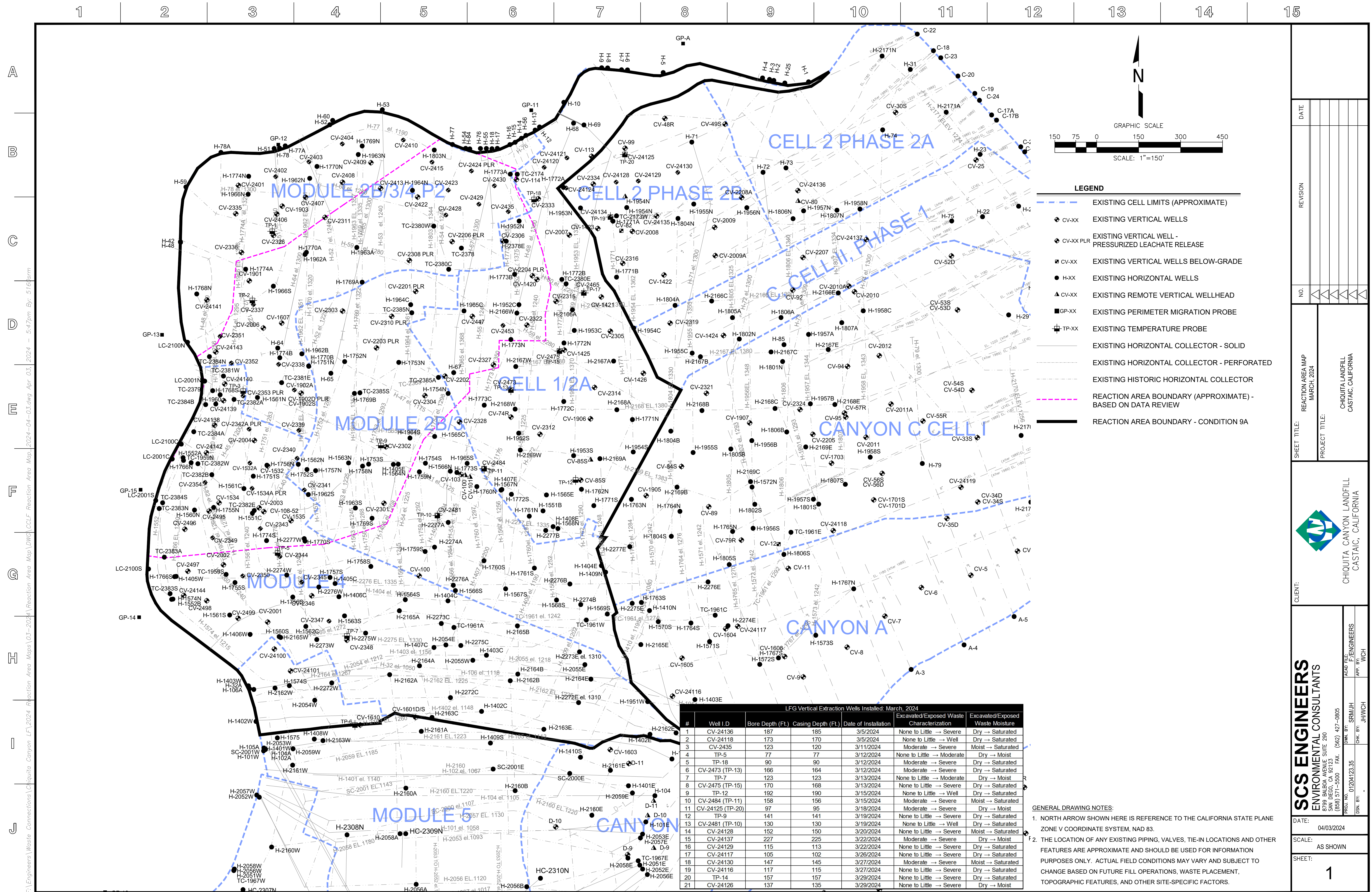
Patrick S. Sullivan, BCES, CCP
Senior Vice President
SCS Engineers

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, MS, Intertox, Inc,
Srividhya Viswanathan, PE, SCS Engineers

Enclosure:

Attachment A – Reaction Area Map



May 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 April 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 5/6/24. 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 scrutinized the data recorded during April 2024 and prior months to investigate whether the reactivation of dewatering pump operations throughout the wellfield, which mostly occurred in April 2024, had any definitive impact on the Reaction Area boundaries. There was no evidence that reactivation of dewatering pump operations impacted the reaction area boundaries.

The Reaction Committee also reviewed the limited initial temperature measurements recorded by the newly installed temperature monitoring probes. Five (5) of the twenty (20) probes (TP-2, 3, 4, 9, and 16) are located within the estimated extent of ETLF conditions (dashed magenta line), and ten (10) probes are positioned adjacent to (within 200 feet) of this boundary. The initial temperatures recorded by the probes are relatively cooler compared to values recorded at other ETLF sites, 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.

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:
 - Landfill gas (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 (CH₄:CO₂) ratios less than 1.0.
 - The concentration of hydrogen (H₂) in the LFG measured greater than 2 percent by volume.
 - Accelerated settlement of the landfill surface, defined as approximately 6 inches or greater within a 60-day period, and cracks in landfill cover.
 - 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.
 - Initial subsurface temperatures recorded at the in-situ waste temperature probes that were commissioned in April 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 temperature measurements recorded at the 20 in-situ waste temperature monitoring probes during April are presented in **Attachment B** in graphical format. Efforts to download these initial measurements from the electronic database and recordkeeping platform into a tabular spreadsheet format for submittal to the South Coast Air Quality Management District under separate cover have been initiated and are ongoing.

Mr. Baitong Chen
May 6, 2024
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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

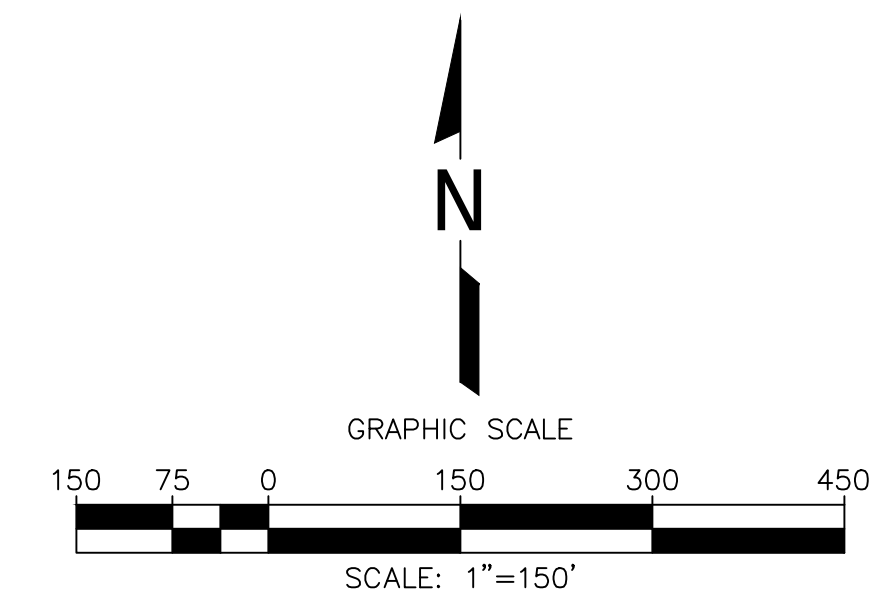
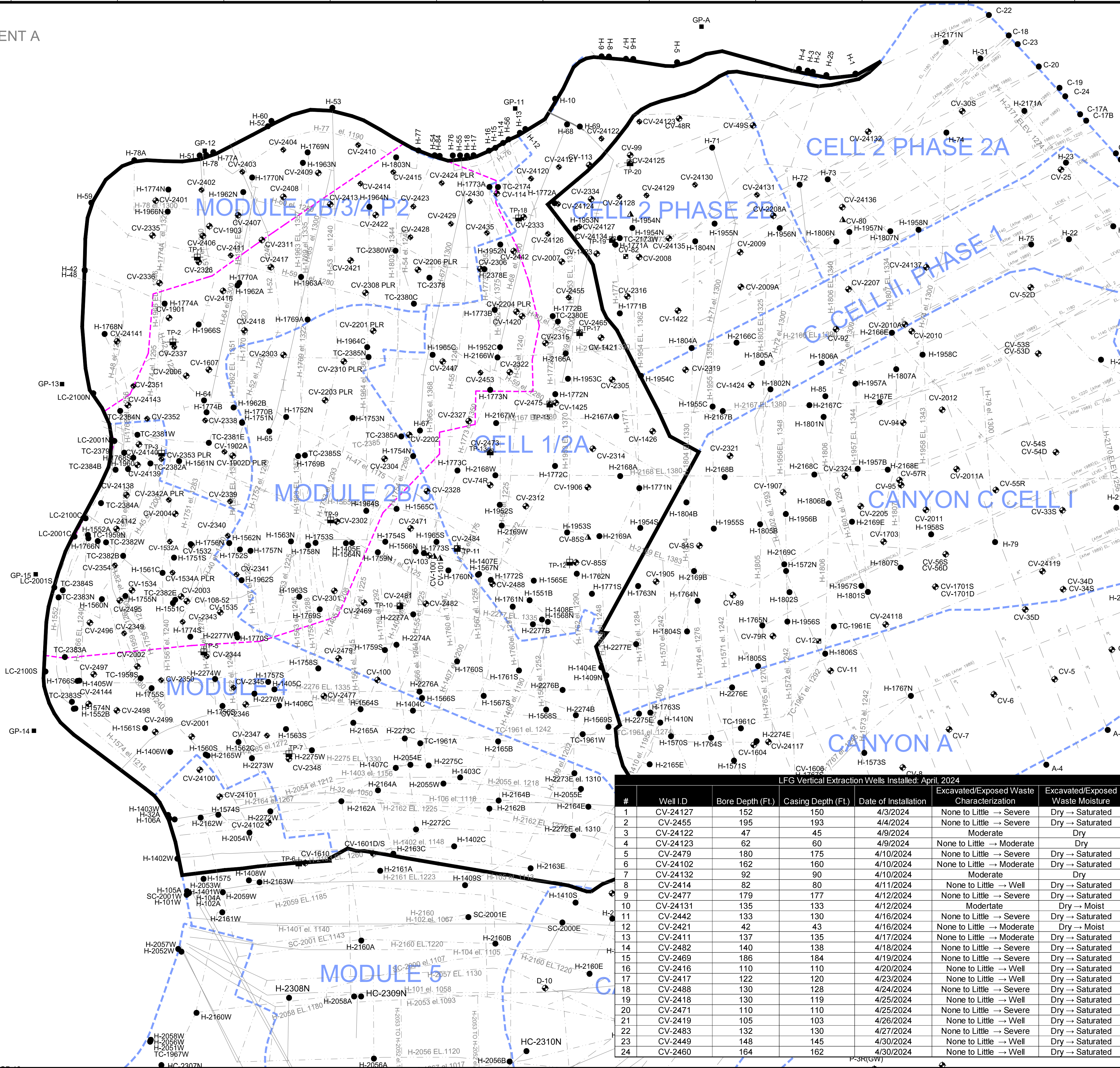
RED/PSS

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

[illegible]

SHEET TITLE:	REACTION AREA MAP APRIL, 2024
PROJECT TITLE:	CHIQUITA CANYON LANDFILL CASTAIC, CALIFORNIA



**CHIQUITA CANYON LANDFILL
CASTAIC, CALIFORNIA**

CLIENT:

SCS ENGINEERS
ENVIRONMENTAL CONSULTANTS

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

REQ. NO.	01204123.35	DWN. BY:	SRM/JL
SN BY:		CHK BY:	

DATE: 05/06/2024

SCALE: AS SHOWN

SHEET:

1

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.

LFG Vertical Extraction Wells Installed: April, 2024						
#	Well I.D	Bore Depth (Ft.)	Casing Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Characterization	Excavated/Exposed Waste Moisture
1	CV-24127	152	150	4/3/2024	None to Little → Severe	Dry → Saturated
2	CV-2455	195	193	4/4/2024	None to Little → Severe	Dry → Saturated
3	CV-24122	47	45	4/9/2024	Moderate	Dry
4	CV-24123	62	60	4/9/2024	None to Little → Moderate	Dry
5	CV-2479	180	175	4/10/2024	None to Little → Severe	Dry → Saturated
6	CV-24102	162	160	4/10/2024	None to Little → Moderate	Dry → Saturated
7	CV-24132	92	90	4/10/2024	Moderate	Dry
8	CV-2414	82	80	4/11/2024	None to Little → Well	Dry → Saturated
9	CV-2477	179	177	4/12/2024	None to Little → Severe	Dry → Saturated
10	CV-24131	135	133	4/12/2024	Moderate	Dry → Moist
11	CV-2442	133	130	4/16/2024	None to Little → Severe	Dry → Saturated
12	CV-2421	42	43	4/16/2024	None to Little → Moderate	Dry → Moist
13	CV-2411	137	135	4/17/2024	None to Little → Moderate	Dry → Saturated
14	CV-2482	140	138	4/18/2024	None to Little → Severe	Dry → Saturated
15	CV-2469	186	184	4/19/2024	None to Little → Severe	Dry → Saturated
16	CV-2416	110	110	4/20/2024	None to Little → Well	Dry → Saturated
17	CV-2417	122	120	4/23/2024	None to Little → Well	Dry → Saturated
18	CV-2488	130	128	4/24/2024	None to Little → Severe	Dry → Saturated
19	CV-2418	130	119	4/25/2024	None to Little → Well	Dry → Saturated
20	CV-2471	110	110	4/25/2024	None to Little → Severe	Dry → Saturated
21	CV-2419	105	103	4/26/2024	None to Little → Well	Dry → Saturated
22	CV-2483	132	130	4/27/2024	None to Little → Severe	Dry → Saturated
23	CV-2449	148	145	4/30/2024	None to Little → Well	Dry → Saturated
24	CV-2460	164	162	4/30/2024	None to Little → Well	Dry → Saturated

Solid Waste Borehole Temperature Profiles Over 6 Weeks for April 15, 2024 to May 1, 2024

SCS ENGINEERS

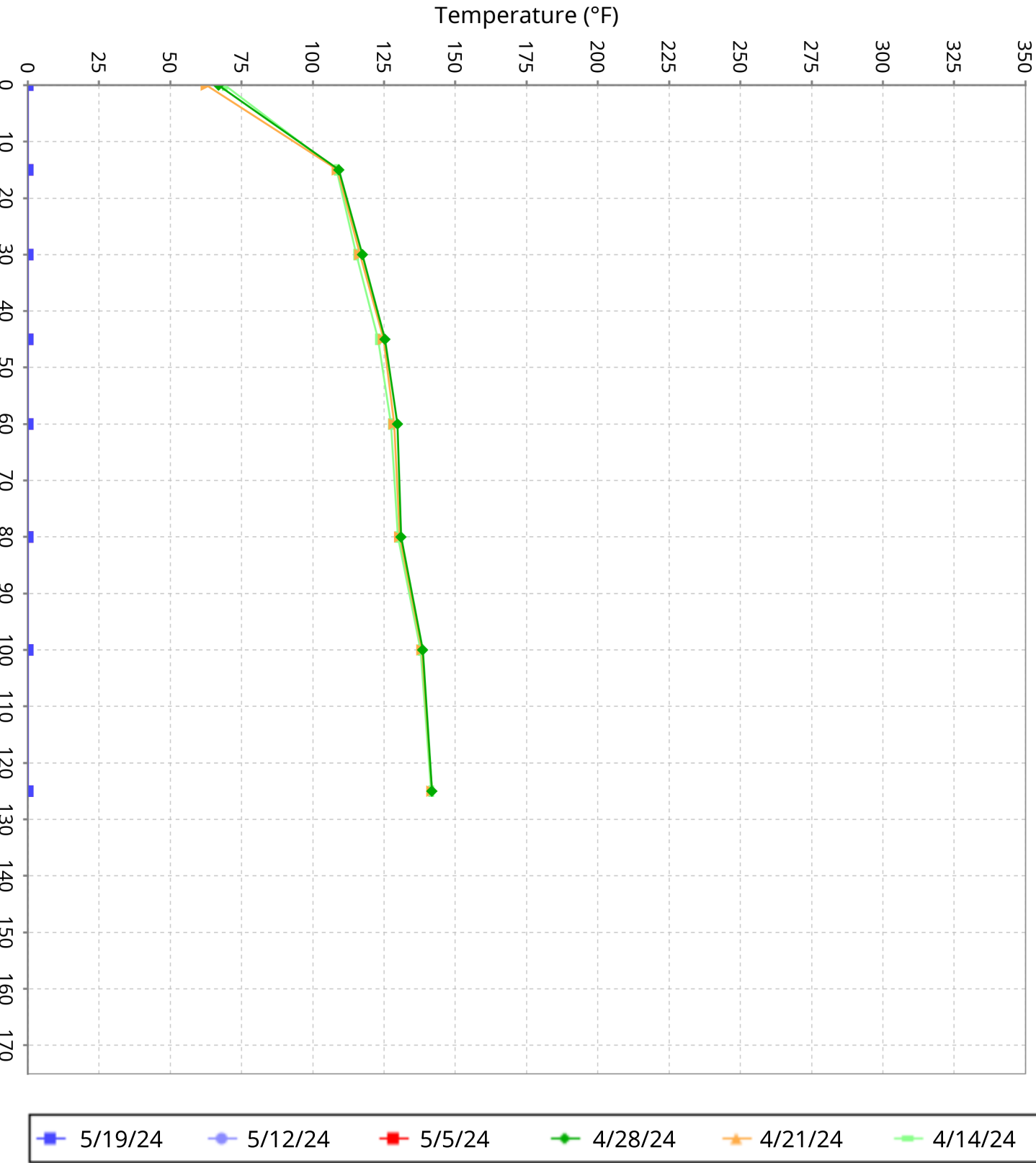
07224053.00 | May 1, 2024

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

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-1

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-2

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-3

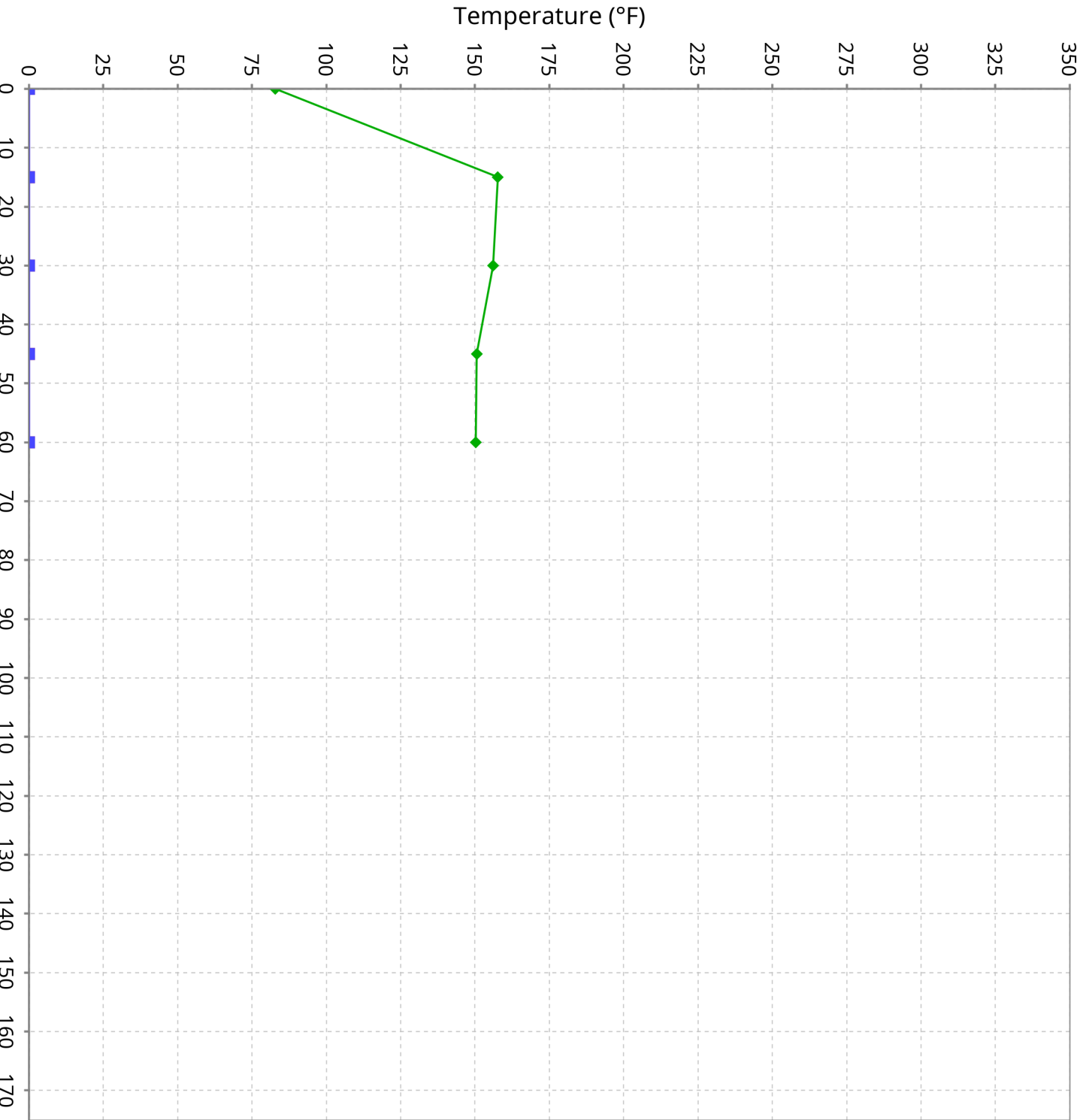
Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-4

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-5

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-6

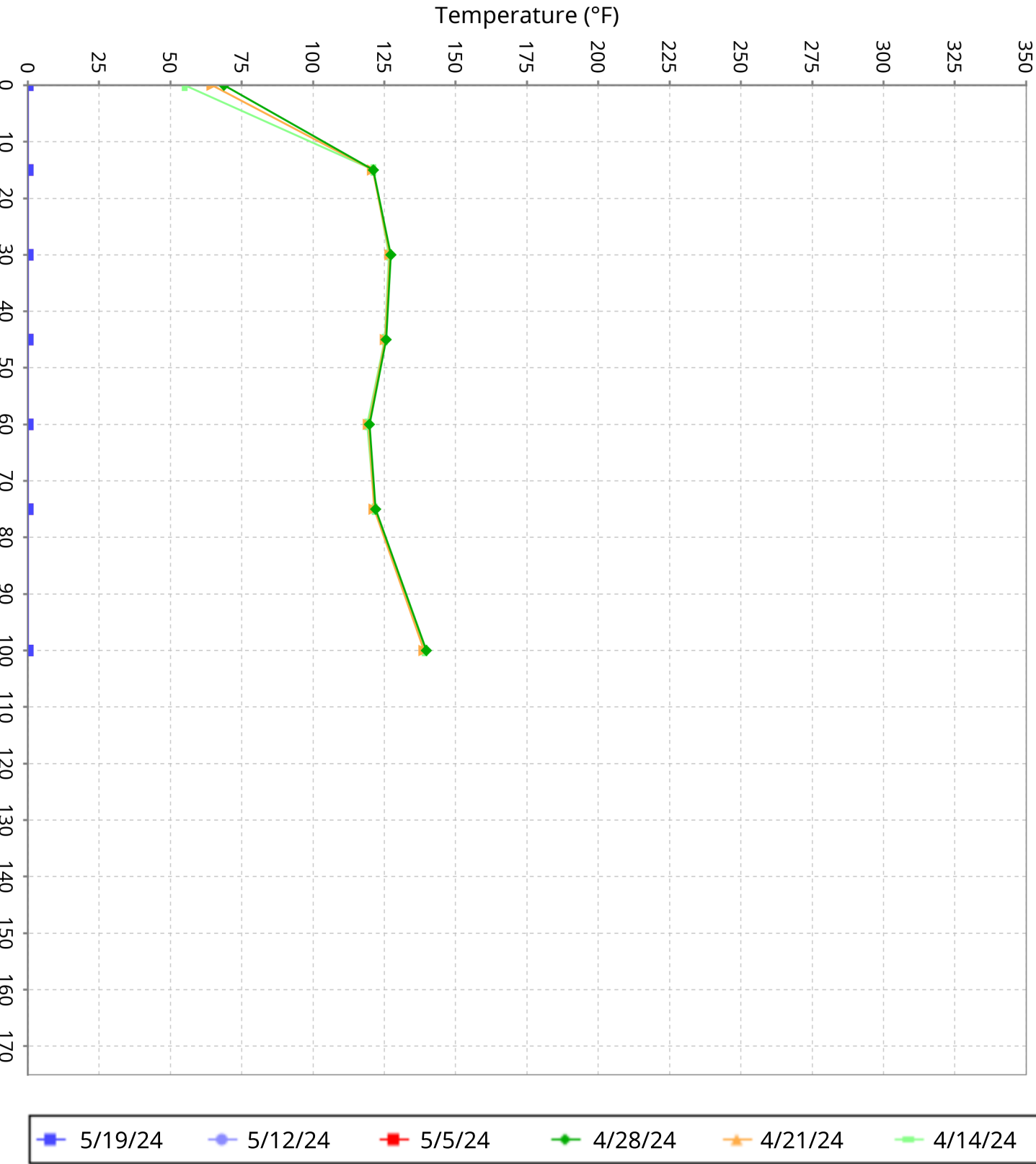
Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-7

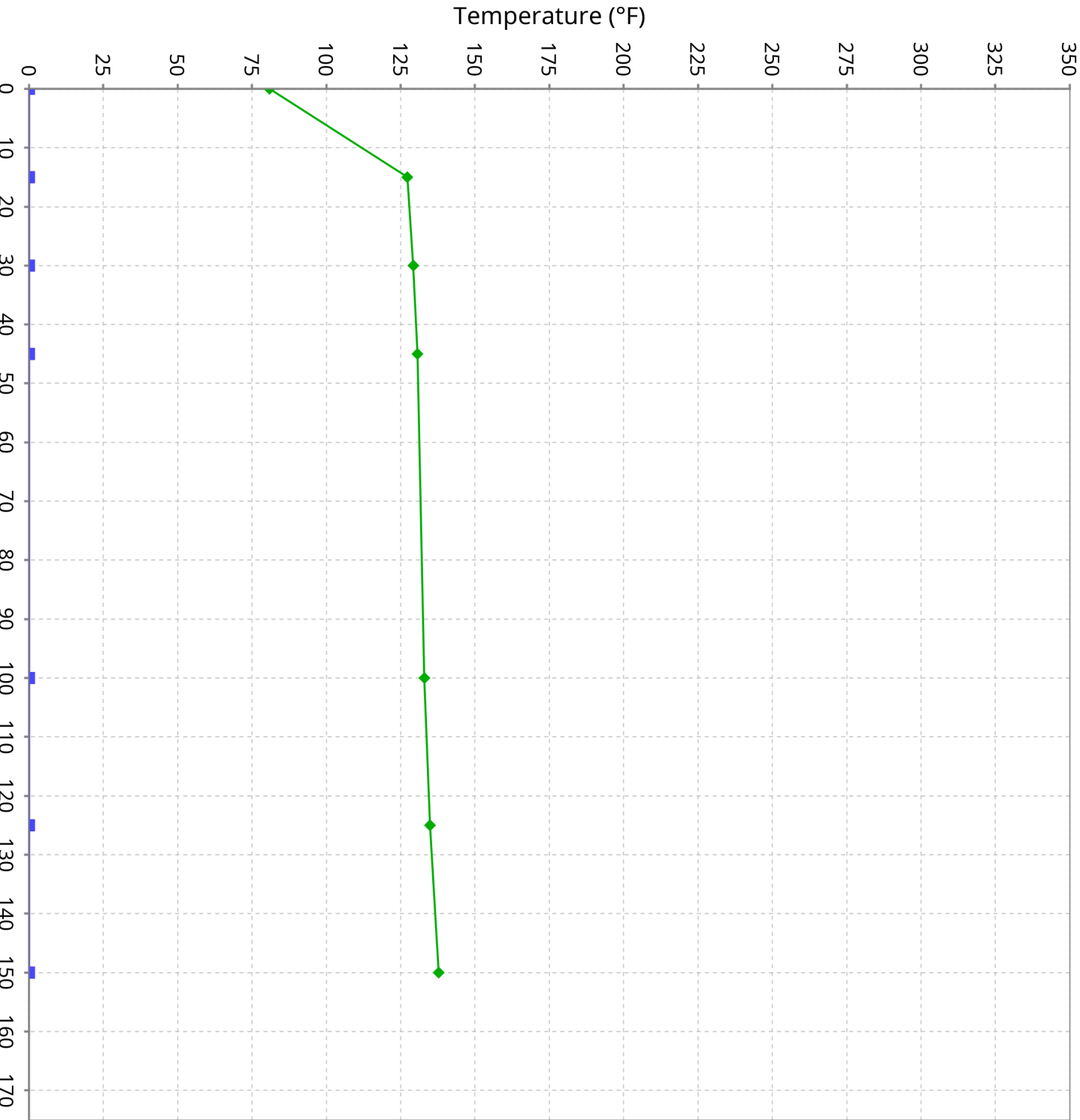
Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-8

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-9

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-10

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-11

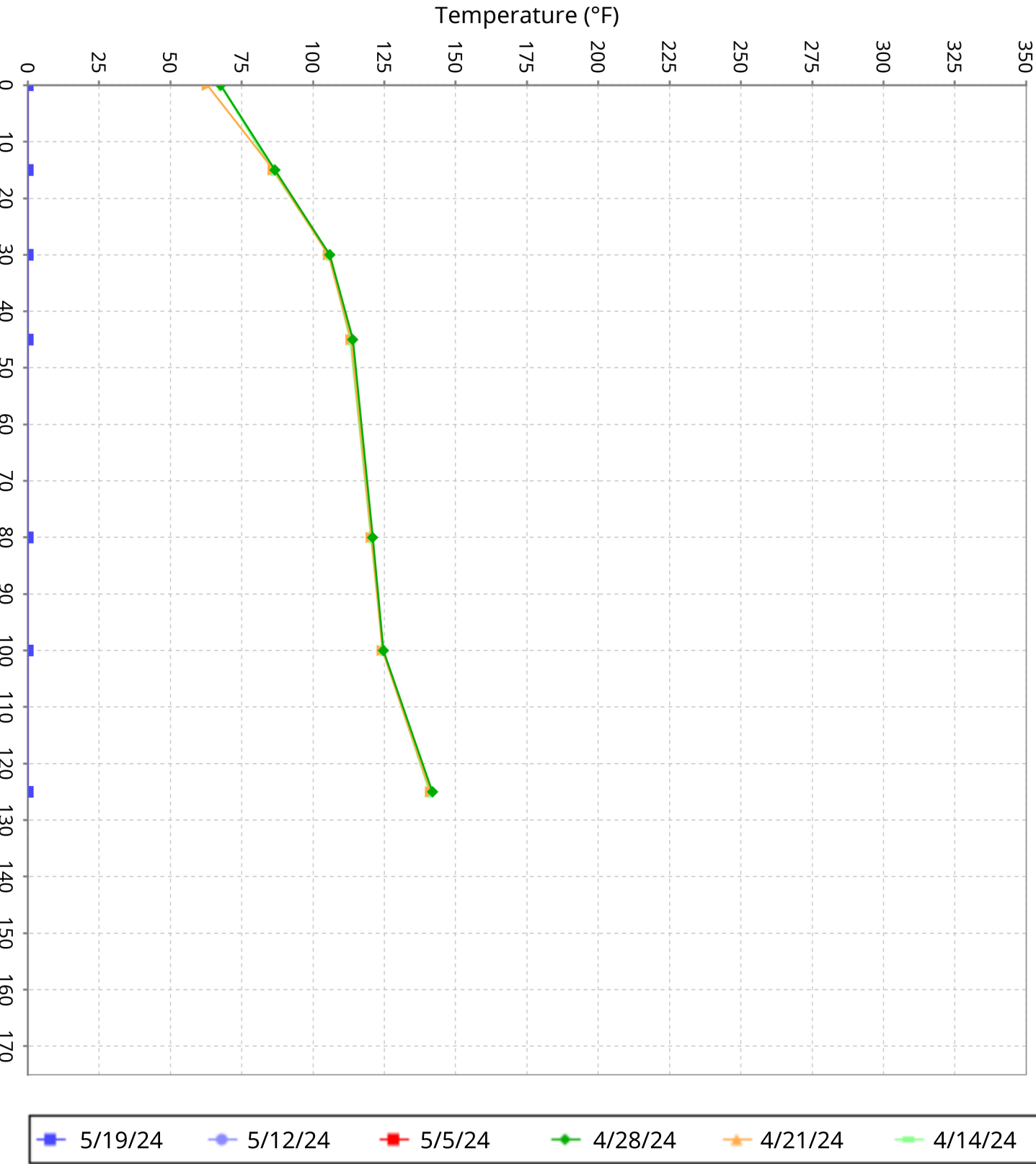
Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-12

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

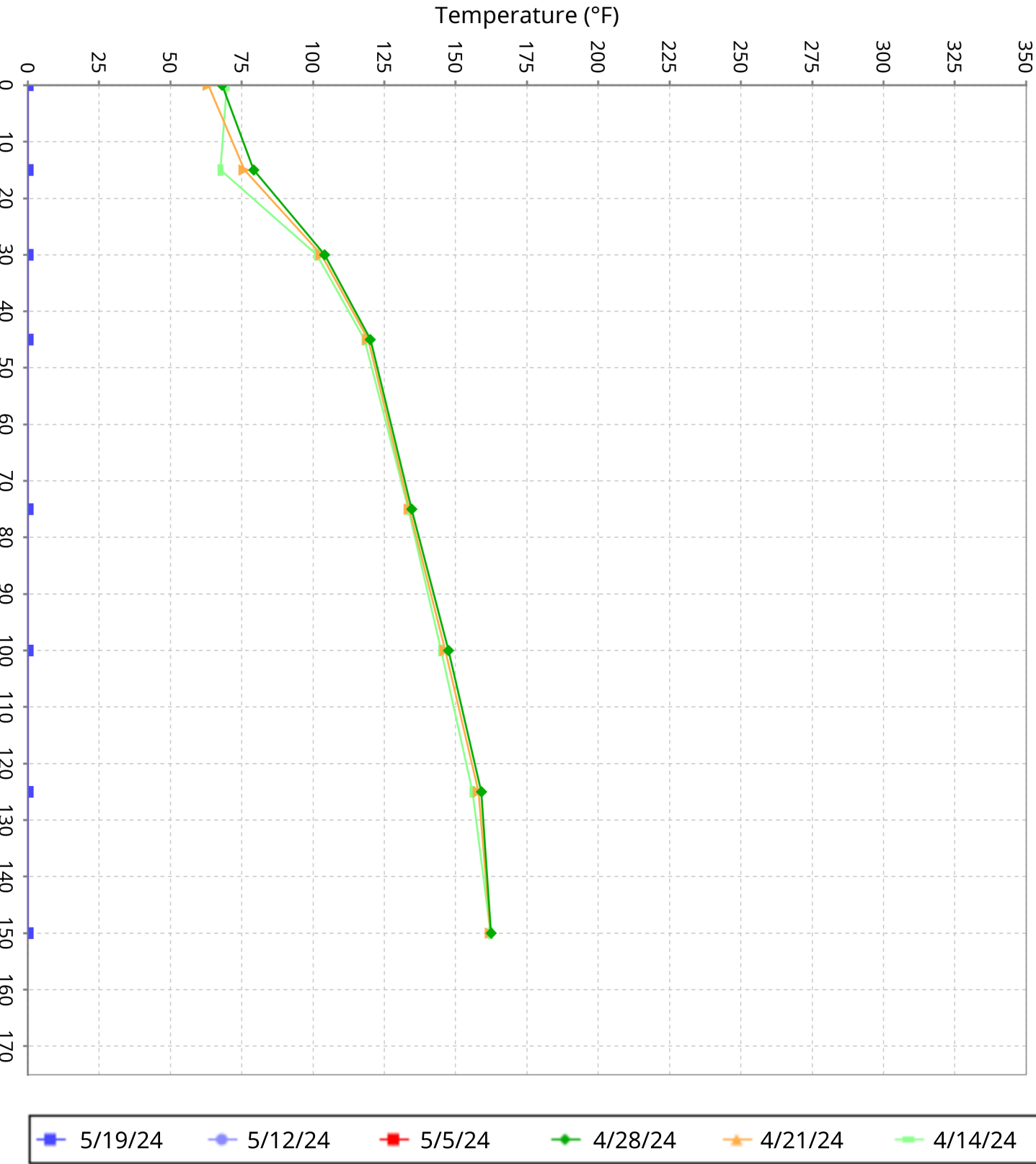
for TP-13

Average data for April 15, 2024 to May 1, 2024



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

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-15

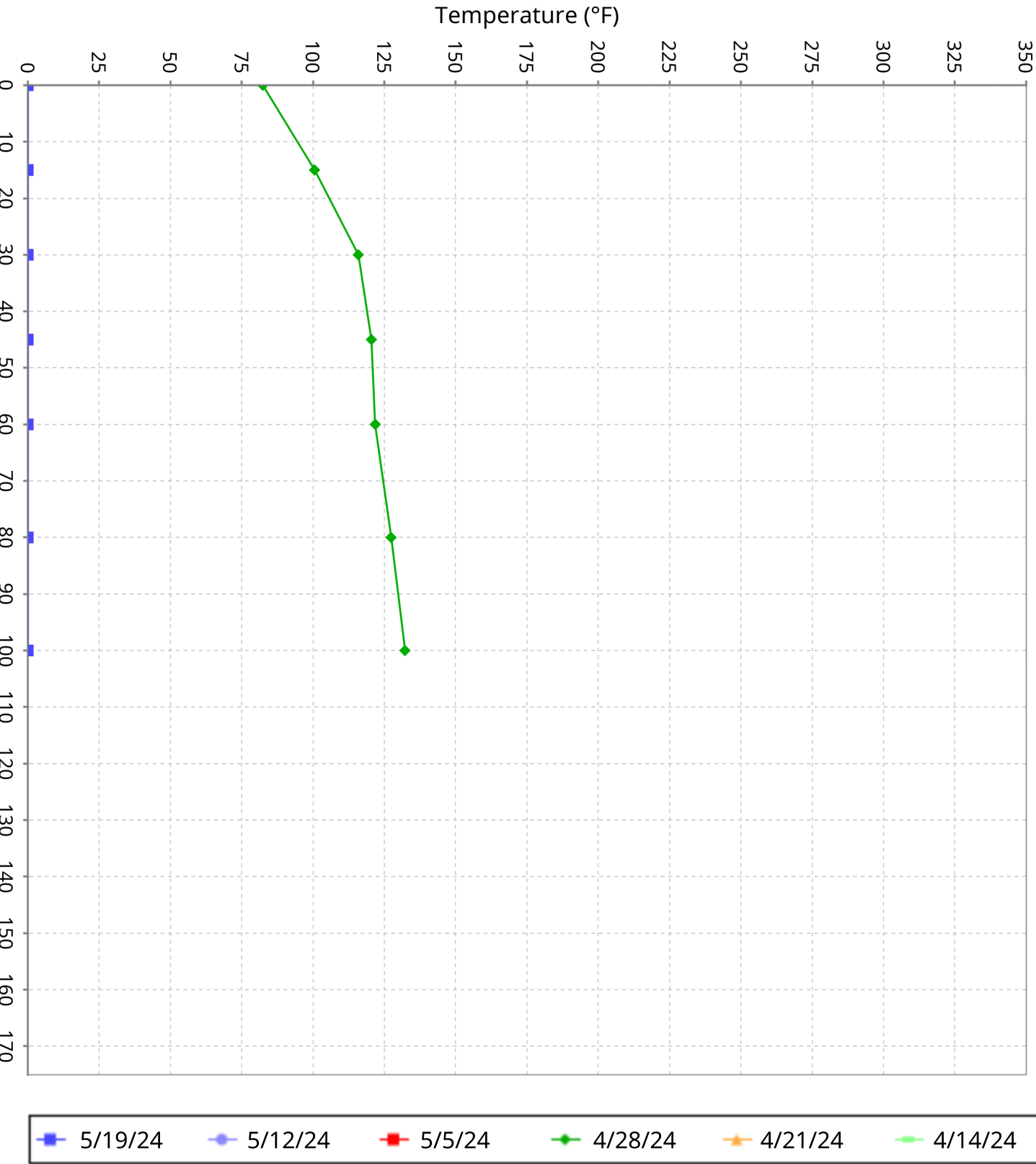
Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-16

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-17

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-18

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-19

Average data for April 15, 2024 to May 1, 2024



Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-20

Average data for April 15, 2024 to May 1, 2024



June 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 May 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 6/7/24. 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 scrutinized the data recorded during May 2024 and prior months to investigate whether the reactivation of dewatering pump operations throughout the wellfield, which primarily commenced in April and continued throughout May, had any definitive impact on the Reaction Area boundaries. Certain wells positioned to the east of the reaction area boundary where pumping was reactivated demonstrated some increased hydrogen content in the LFG being extracted based on laboratory analyses performed during May. However, these wells did not exhibit elevated temperatures, so there was no evidence of increased heat that is typical with ETLF conditions present at these wells. Accordingly, there does not appear to be definitive evidence that reactivation of dewatering pump operations impacted the reaction area boundaries.

The Reaction Committee also reviewed the temperature measurements recorded by the newly installed 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 temperatures recorded by the probes are relatively cooler compared to values recorded at other ETLF sites, 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.

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:
 - Landfill gas (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 (CH₄:CO₂) ratios less than 1.0.
 - The concentration of hydrogen (H₂) in the LFG measured greater than 2 percent by volume.
 - Accelerated settlement of the landfill surface, defined as approximately 6 inches or greater within a 60-day period, and cracks in landfill cover.
 - 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 May 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 temperature measurements recorded at the 20 in-situ waste temperature monitoring probes during May are presented in **Attachment B** in graphical format. Efforts to download these initial measurements from the electronic database and recordkeeping platform into a tabular spreadsheet format for submittal to the South Coast Air Quality Management District under separate cover have been initiated and are ongoing.

Mr. Baitong Chen
June 7, 2024
Page 3

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

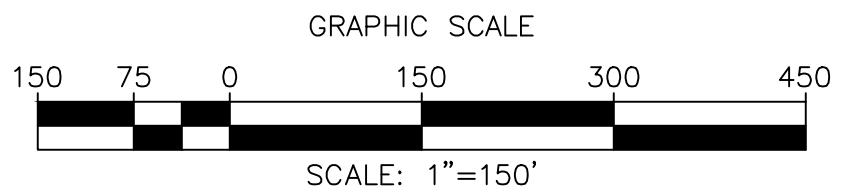
RED/PSS

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)
- EXISTING VERTICAL WELLS
- EXISTING VERTICAL WELL - PRESSURIZED LEACHATE RELEASE
- EXISTING VERTICAL WELLS BELOW-GRADE
- EXISTING HORIZONTAL WELLS
- EXISTING REMOTE VERTICAL WELLHEAD
- EXISTING PERIMETER MIGRATION PROBE
- 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: May, 2024						
#	Well I.D.	Bore Depth (Ft.)	Casing Depth (Ft.)	Date of Installation	Excavated/Exposed Waste Characterization	Excavated/Exposed Waste Moisture
1	CV-2461	137	133	5/1/2024	None to Little → Severe	Dry → Saturated
2	CV-2462	103	100	5/2/2024	None to Little → Severe	Dry → Saturated
3	CV-2464	170	165	5/2/2024	None to Little → Severe	Dry → Saturated
4	CV-2463	150	125	5/3/2024	None to Little → Severe	Dry → Saturated
5	CV-2474	147	143	5/3/2024	None to Little → Severe	Dry → Saturated
6	CV-2472	120	115	5/6/2024	Moderate → Severe	Dry → Saturated
7	CV-2441	55	50	5/7/2024	Severe	Dry → Moist
8	CV-2476	165	163	5/7/2024	None to Little → Severe	Dry → Saturated
9	CV-24111	165	163	5/8/2024	None to Little → Severe	Dry → Saturated
10	CV-2494	140	138	5/10/2024	None to Little → Severe	Dry → Saturated
11	CV-24114	129	127	5/11/2024	None to Little → Severe	Dry → Saturated
12	CV-2493	135	130	5/11/2024	None to Little → Moderate	Dry → Moist
13	CV-24113	97	96	5/13/2024	None to Little → Moderate	Dry
14	CV-24112	110	98	5/13/2024	None to Little → Severe	Dry → Saturated
15	CV-2491	170	168	5/14/2024	None to Little → Severe	Dry → Saturated
16	CV-24110	136	134	5/14/2024	None to Little → Severe	Dry → Saturated
17	CV-24115	170	168	5/15/2024	None to Little → Severe	Dry → Saturated
18	CV-24133	112	110	5/15/2024	None to Little → Severe	Dry
19	CV-2470	148	146	5/16/2024	None to Little → Severe	Dry → Moist
20	CV-2486	135	133	5/16/2024	None to Little → Severe	Dry → Saturated
21	CV-2492	176	171	5/16/2024	None to Little → Severe	Dry → Saturated
22	CV-2459	120	118	5/17/2024	None to Little → Severe	Dry → Saturated
23	CV-2487	128	126	5/17/2024	None to Little → Severe	Dry → Saturated
24	CV-2480	173	171	5/18/2024	None to Little → Severe	Dry → Saturated
25	CV-2434	55	50	5/20/2024	None to Little → Severe	Dry → Saturated
26	CV-2412	71	70	5/21/2024	None to Little → Severe	Moist → Saturated
27	CV-2427	42	40	5/21/2024	None to Little → Severe	Moist → Saturated
28	CV-24109	162	160	5/21/2024	None to Little → Severe	Dry → Saturated
29	CV-2466	124	120	5/22/2024	None to Little → Severe	Moist → Saturated
30	CV-24108	126	124	5/22/2024	None to Little → Moderate	Dry → Moist
31	CV-2478	134	132	5/23/2024	None to Little → Severe	Dry → Moist
32	CV-2456	114	110	5/24/2024	None to Little → Severe	Moist → Saturated
33	CV-2485	132	130	5/24/2024	None to Little → Severe	Dry → Moist
34	CV-24107	171	169	5/24/2024	None to Little → Severe	Dry → Saturated
35	CV-2443	90	88	5/28/2024	Severe	Moist → Saturated
36	CV-2450	97	95	5/29/2024	None to Little	Dry
37	CV-2457	135	133	5/29/2024	None to Little	Dry
38	CV-2458	90	88	5/29/2024	Moderate → Severe	Moist → Saturated
39	CV-2489	147	145	5/29/2024	None to Little → Severe	Dry → Saturated
40	CV-24106	117	115	5/29/2024	None to Little → Moderate	Dry → Moist
41	CV-2437	114	112	5/30/2024	None to Little → Severe	Dry → Saturated
42	CV-2445	70	68	5/30/2024	Severe	Moist → Saturated
43	CV-2438	50	50	5/31/2024	Moderate → Severe	Moist → Saturated
44	CV-2439	50	50	5/31/2024	Moderate → Severe	Moist → Saturated
45	CV-2490	177	175	5/31/2024	None to Little → Severe	Dry → Saturated
46	CV-24105	144	142	5/31/2024	None to Little → Severe	Dry → Saturated

GENERAL DRAWING NOTES:

- NORTH ARROW SHOWN HERE IS REFERENCE TO THE CALIFORNIA STATE PLANE ZONE V COORDINATE SYSTEM, NAD 83.
- 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.

SCS ENGINEERS
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2500 CALIFORNIA AVE., SUITE 250
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PROJ. NO. 01204123.35
DRAWN BY: SRM/JH
CHECKED BY: JHW/CH

CLIENT:

CHICUITA CANYON LANDFILL
CASTAIC, CALIFORNIA

SHEET TITLE:
REACTION AREA MAP
MAY, 2024

PROJECT TITLE:
CHICUITA CANYON LANDFILL
CASTAIC, CALIFORNIA

DATE	
REVISION	
NO.	

Solid Waste Borehole Average Temperature Profiles Over 6 Weeks for April 25, 2024 to June 5, 2024

SCS ENGINEERS

07224053.00 | June 6, 2024

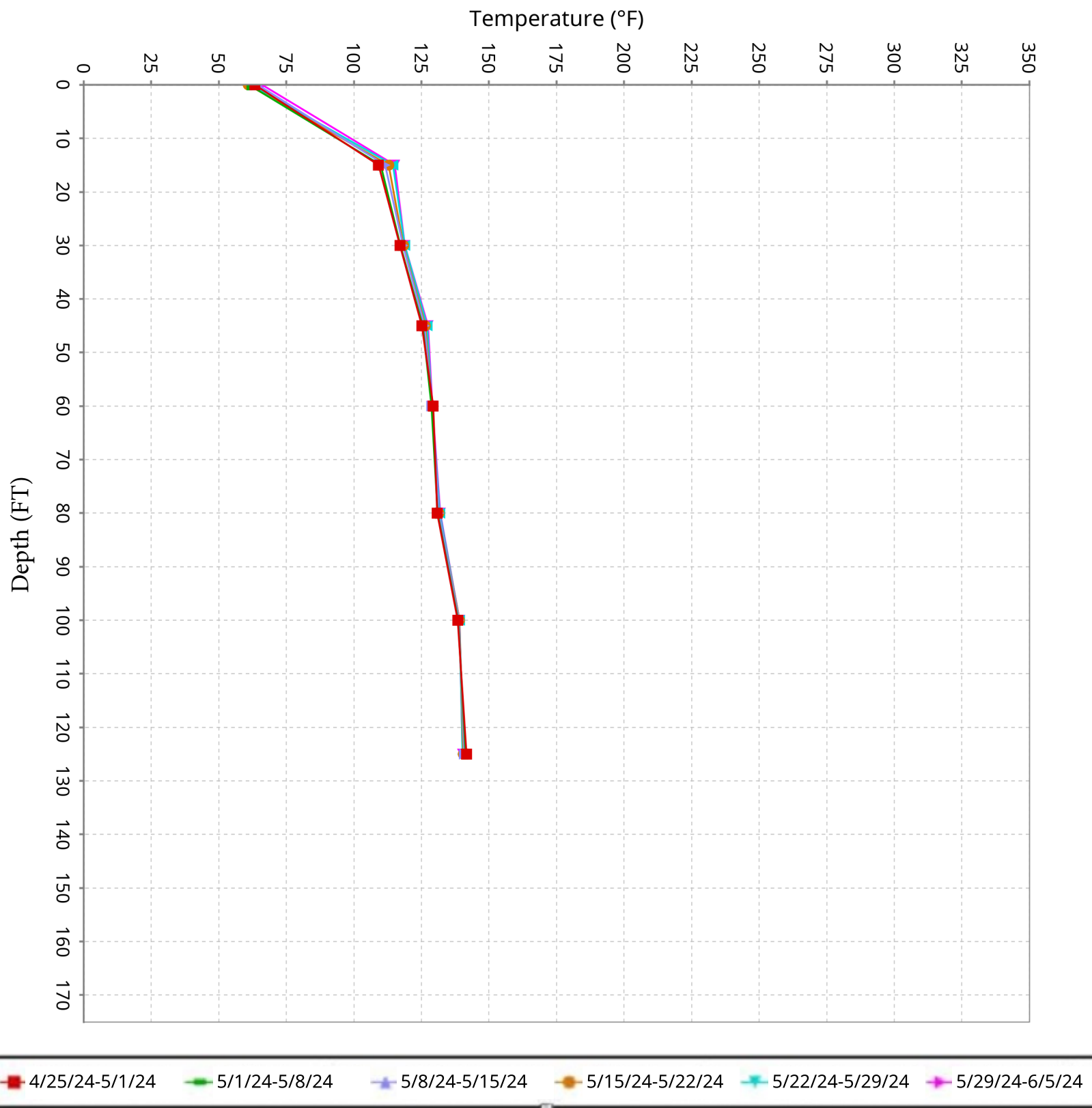
274 Granite Run Drive
Lancaster, PA 17601
717-550-6330

Note: Data represents the arithmetic mean of the available temperature readings for the specified date.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-1

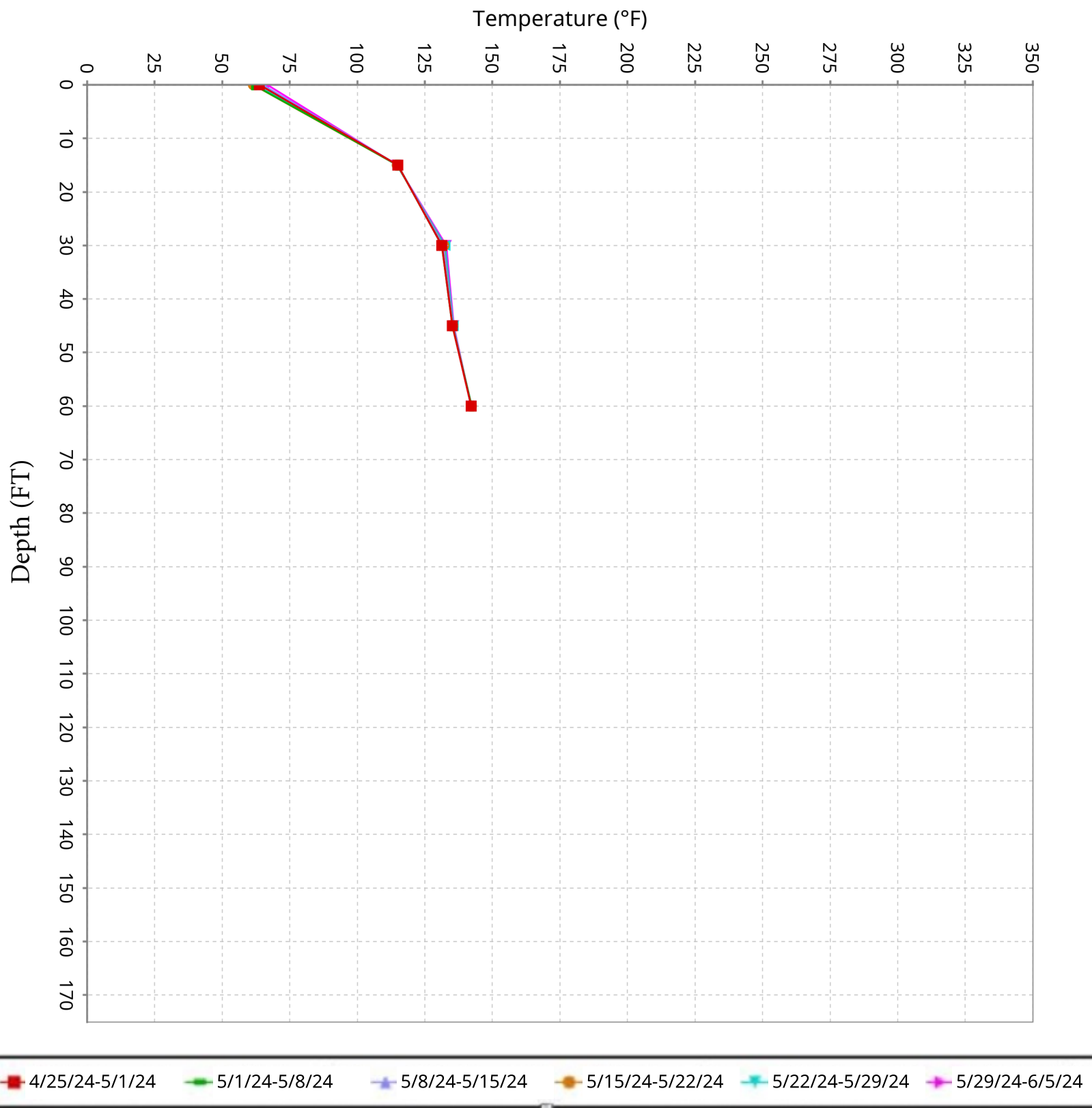
Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

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

Average data for April 25, 2024 to June 5, 2024

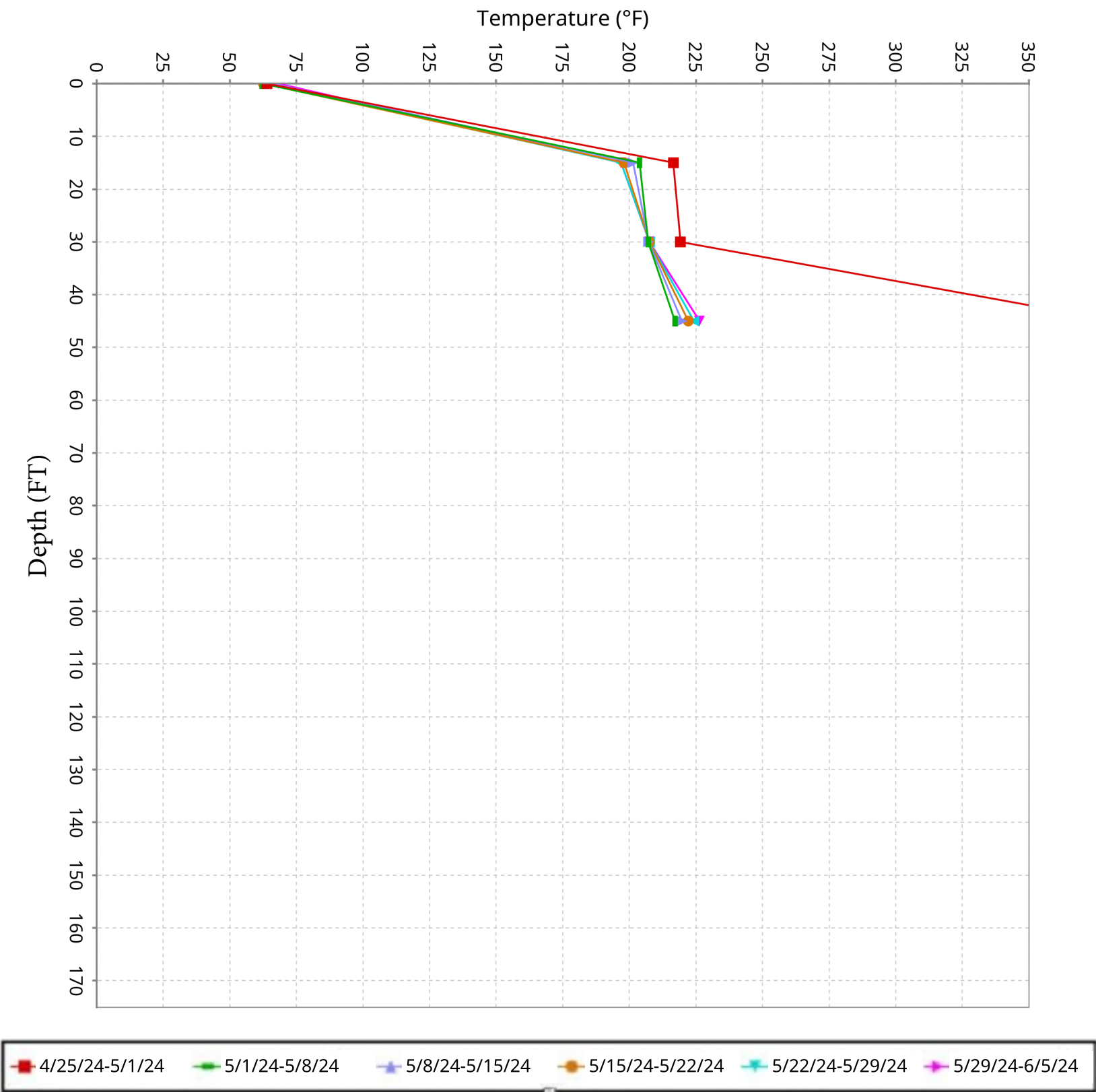


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-3

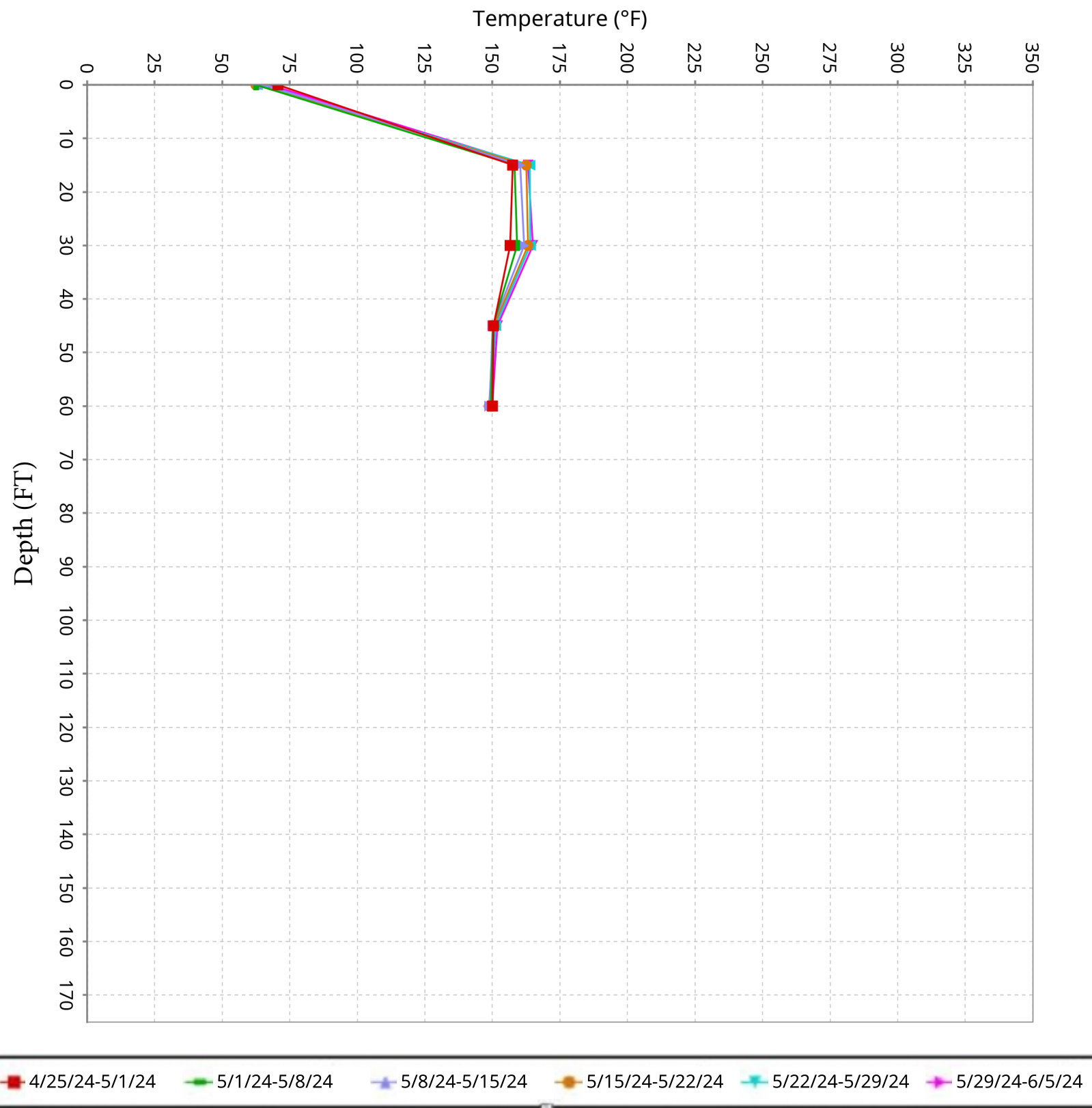
Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

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

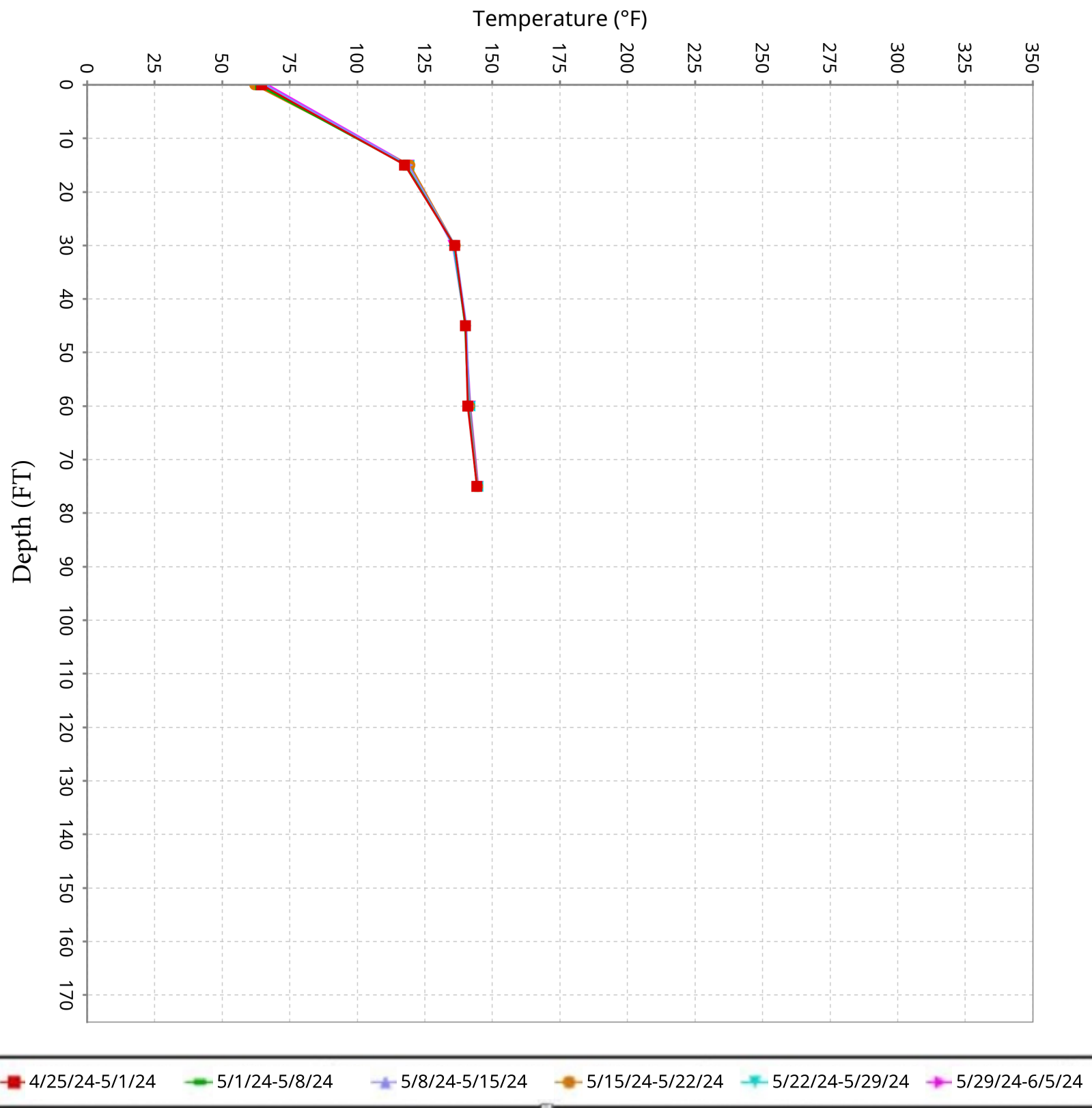
Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

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

Average data for April 25, 2024 to June 5, 2024

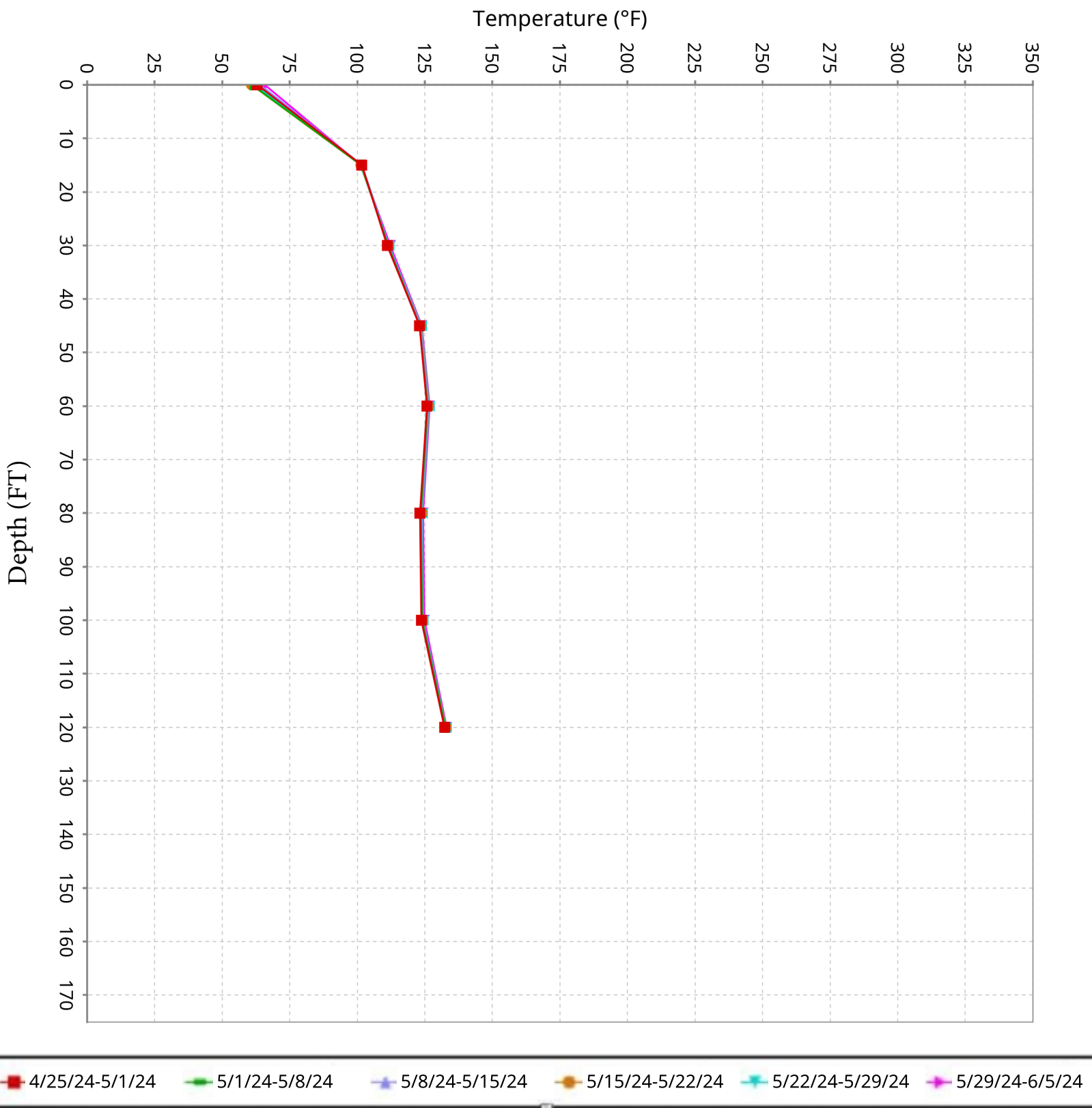


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-6

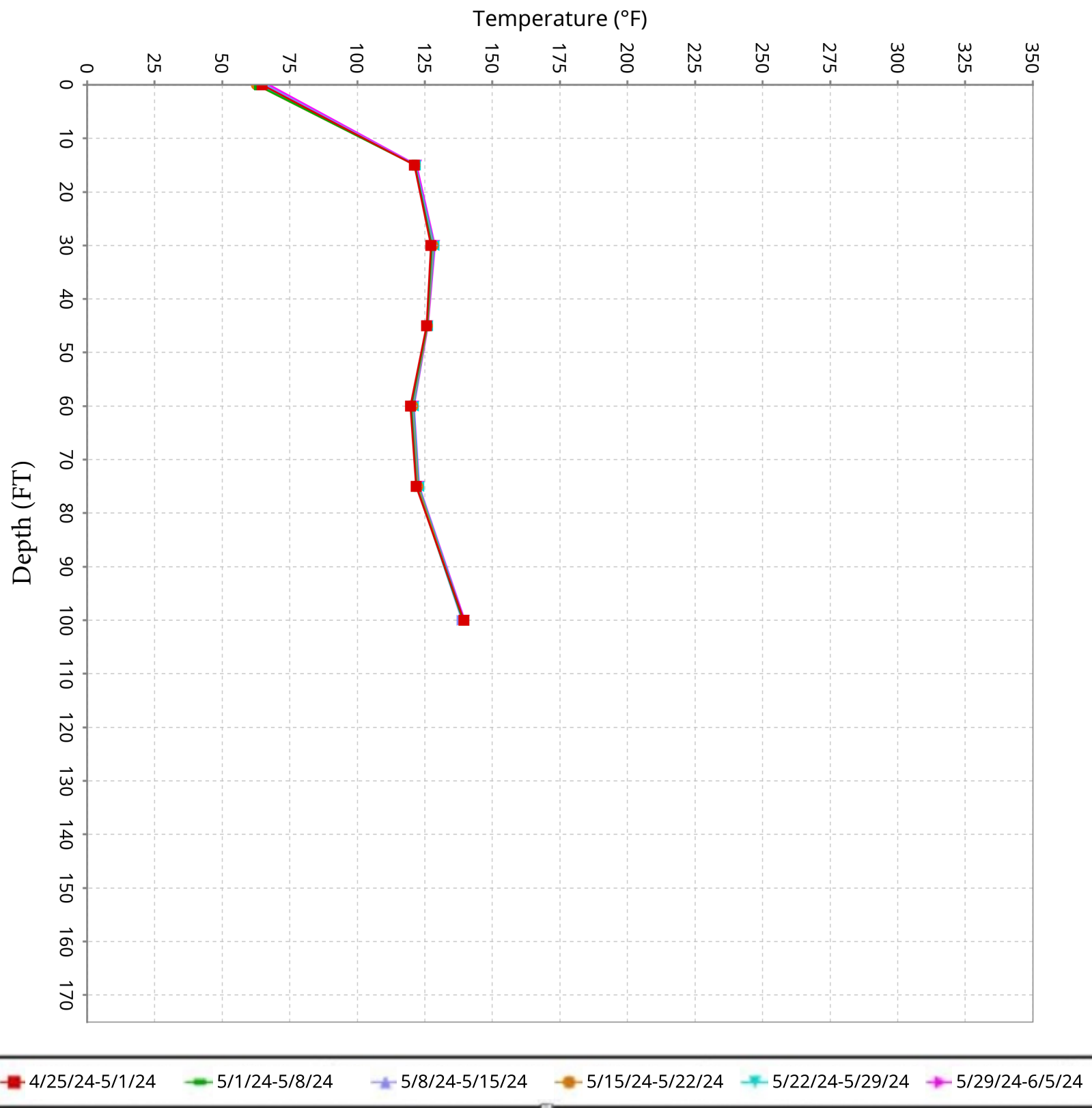
Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

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

Average data for April 25, 2024 to June 5, 2024

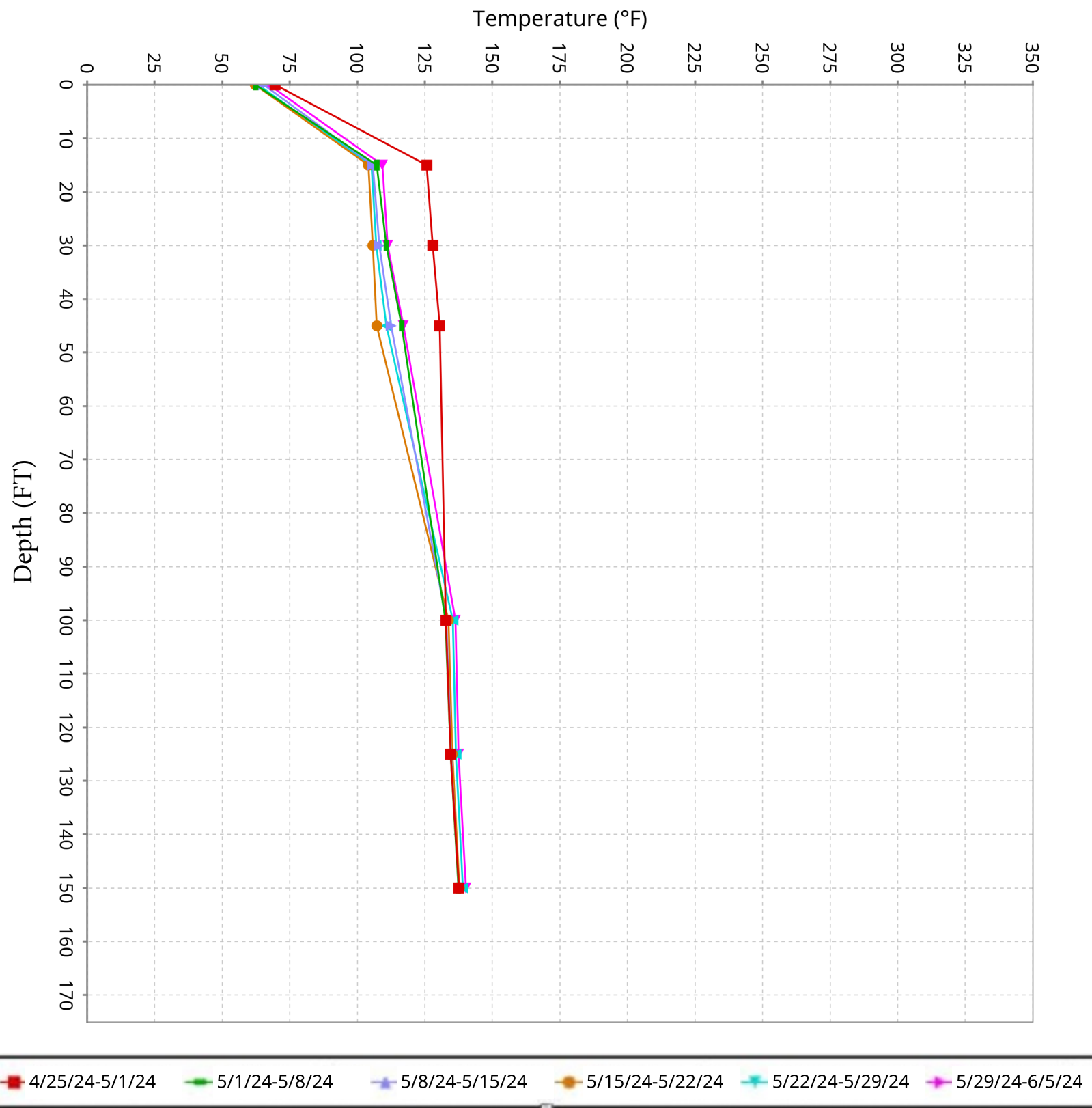


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-8

Average data for April 25, 2024 to June 5, 2024

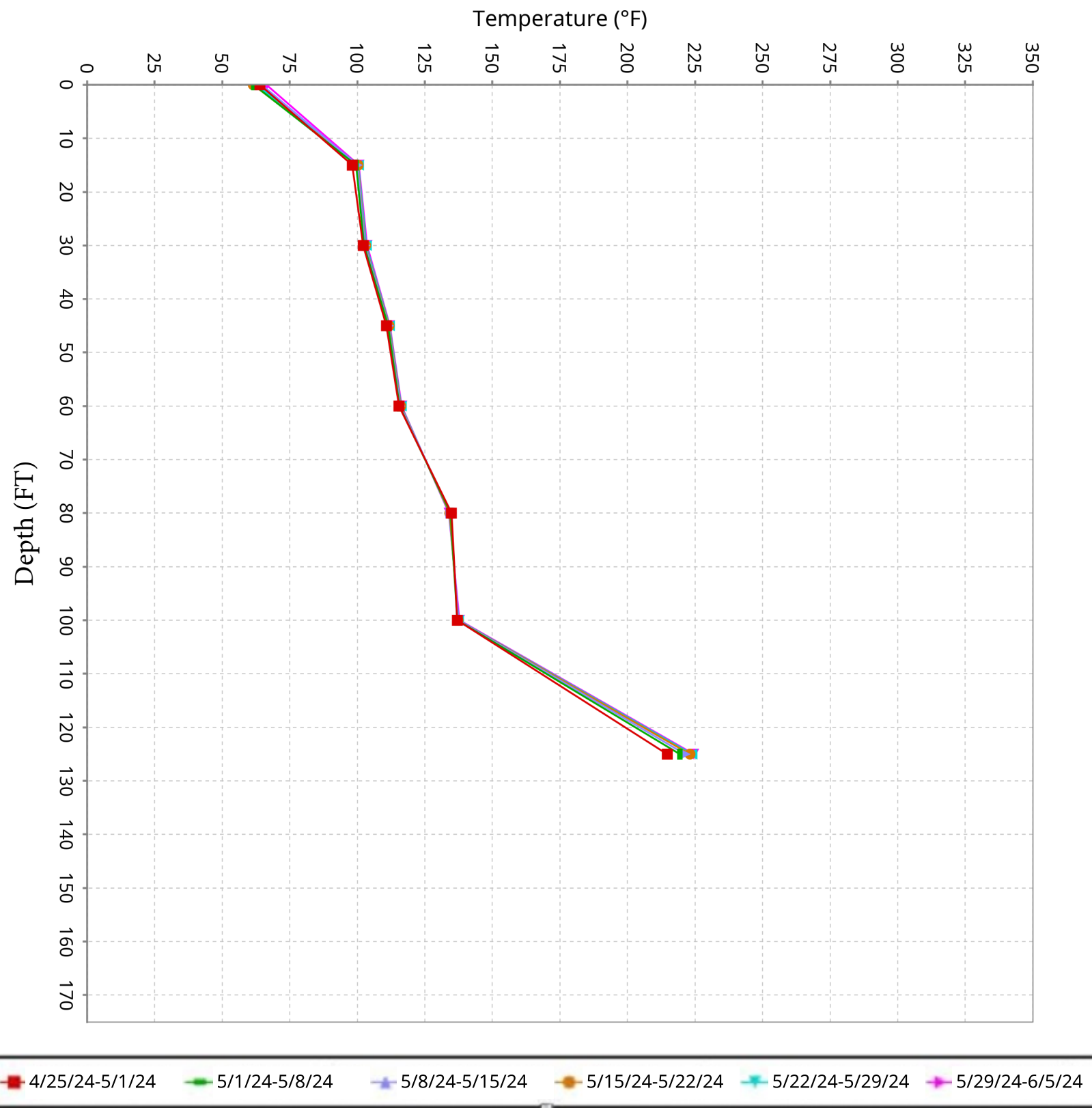


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-9

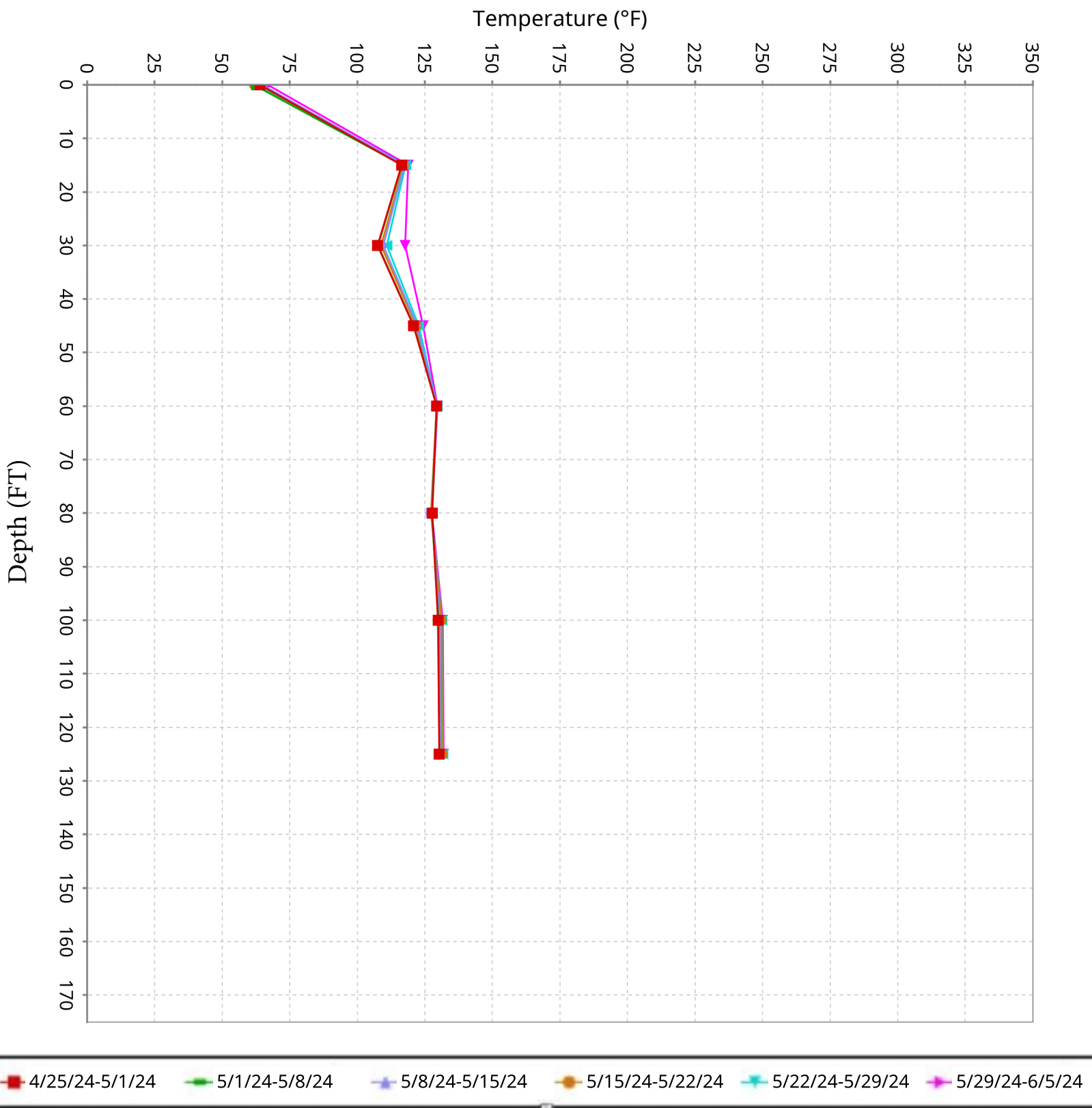
Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

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

Average data for April 25, 2024 to June 5, 2024

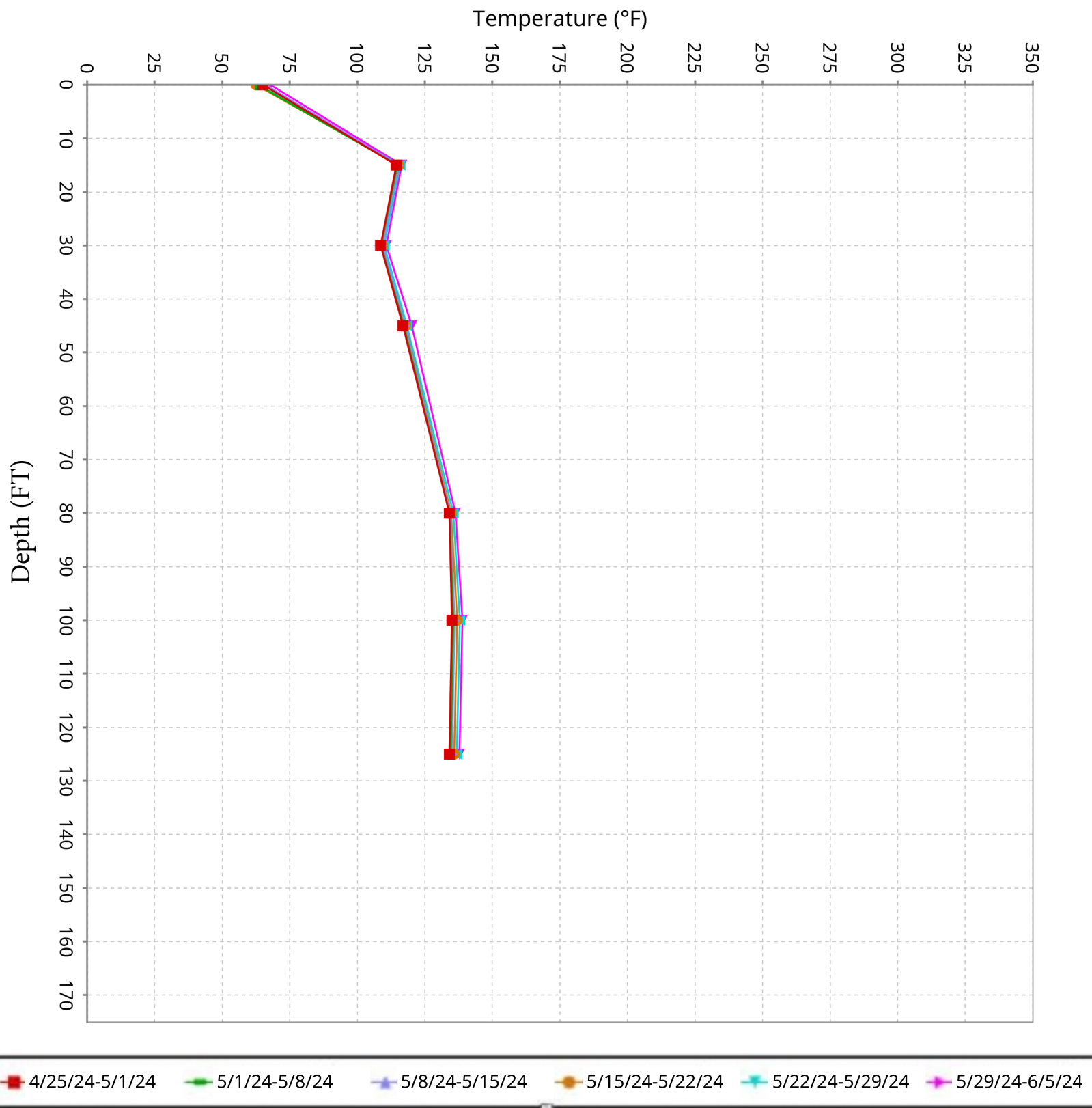


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-11

Average data for April 25, 2024 to June 5, 2024

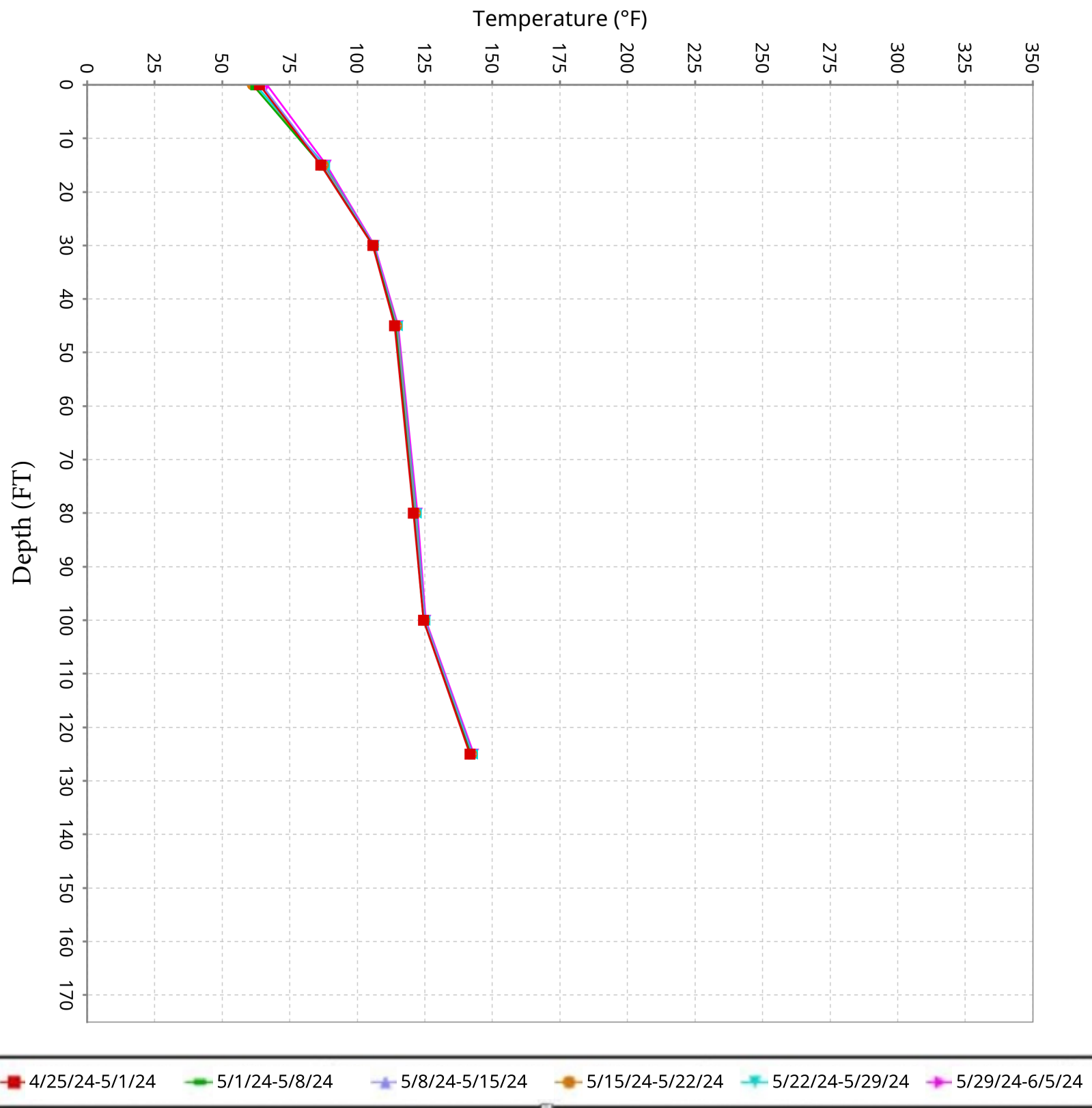


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-12

Average data for April 25, 2024 to June 5, 2024

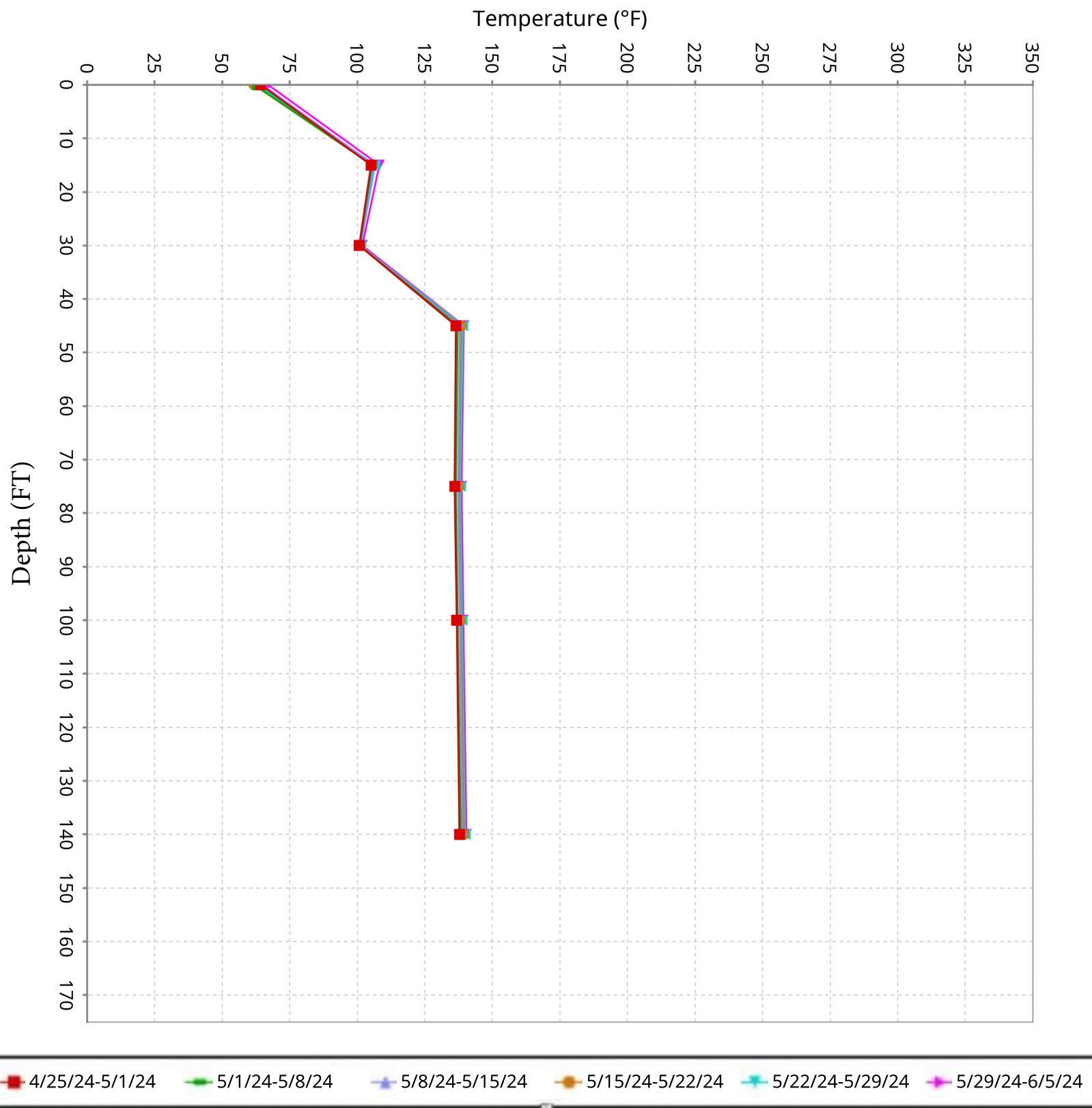


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-13

Average data for April 25, 2024 to June 5, 2024

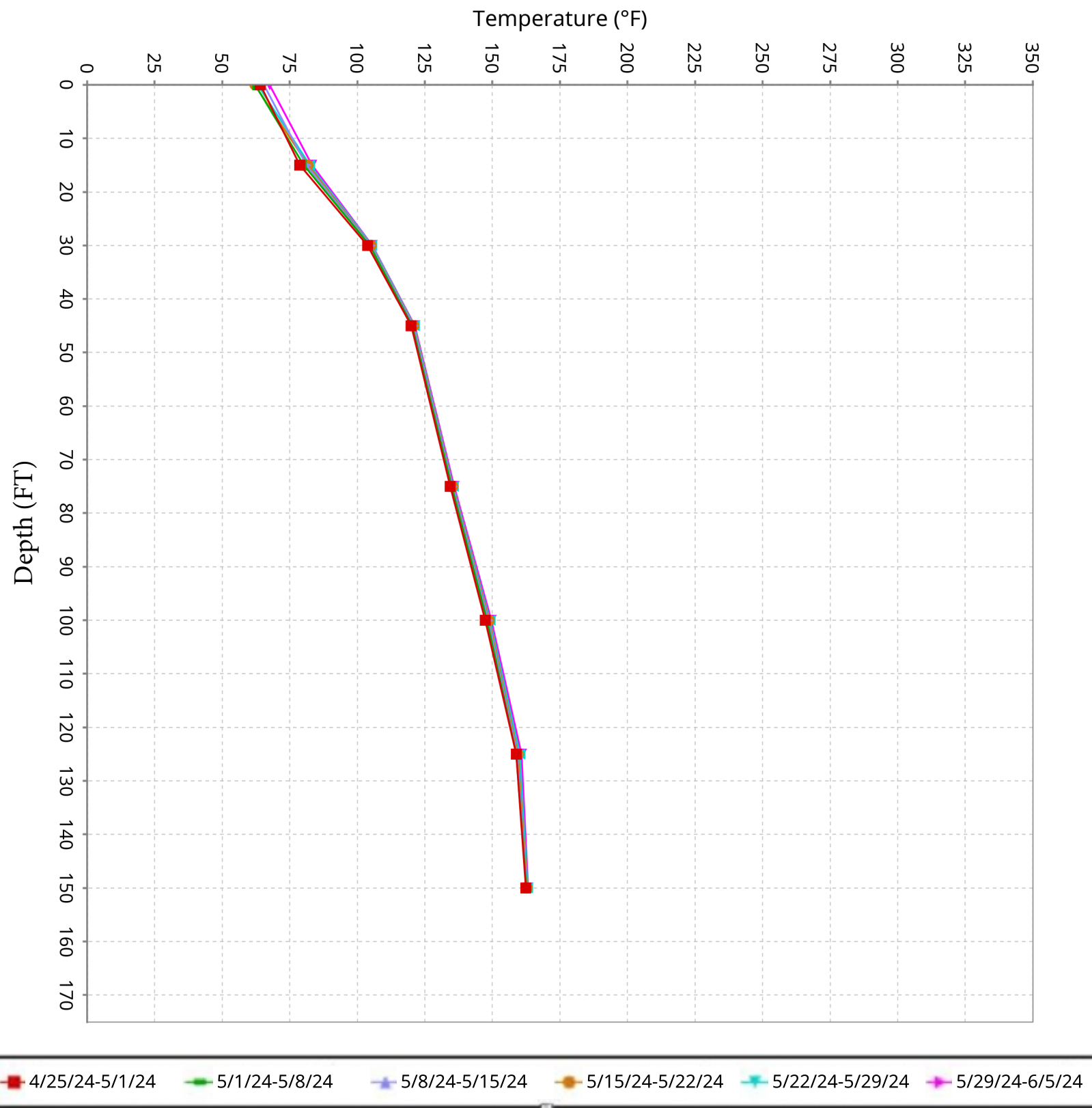


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-14

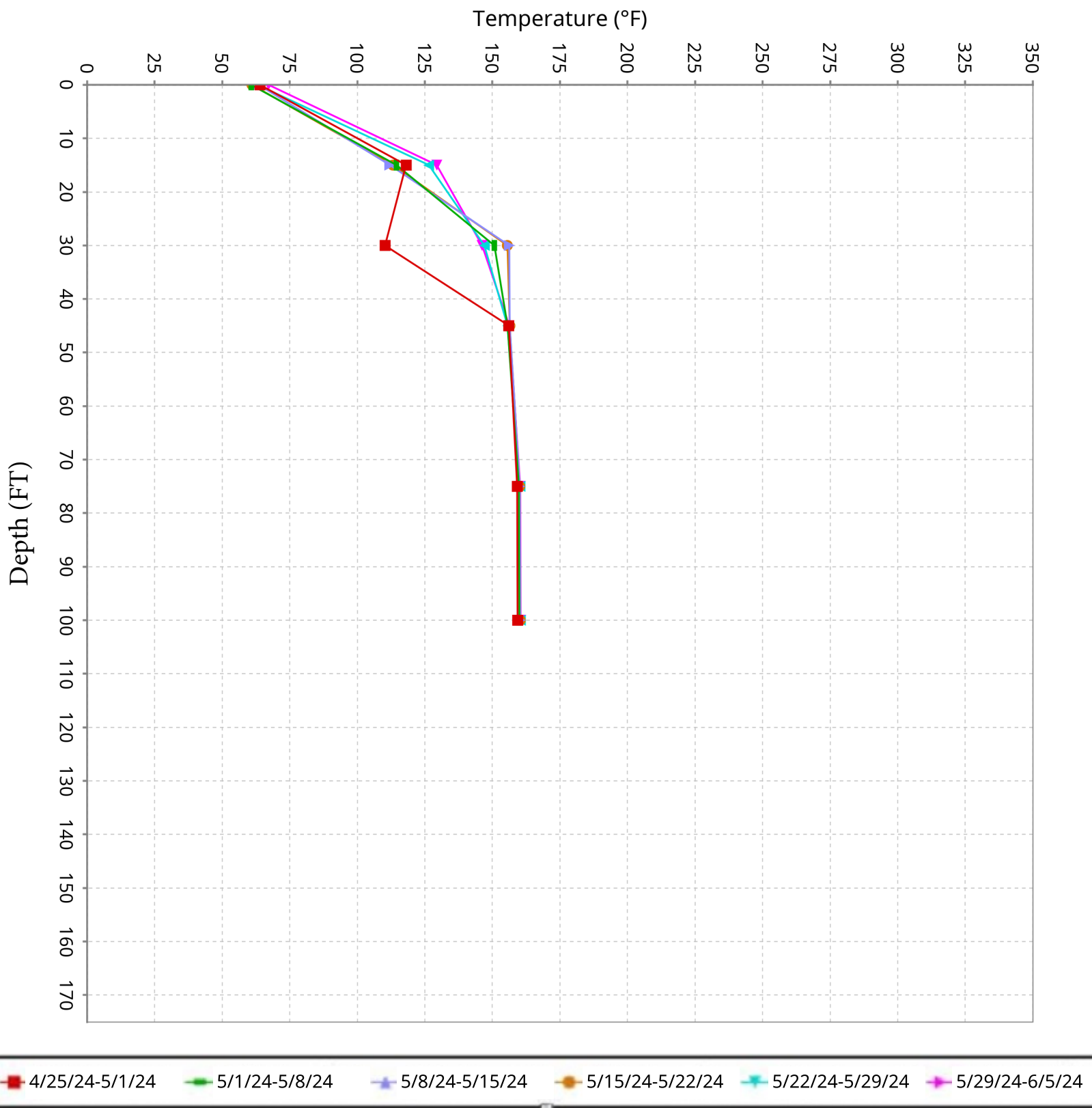
Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

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

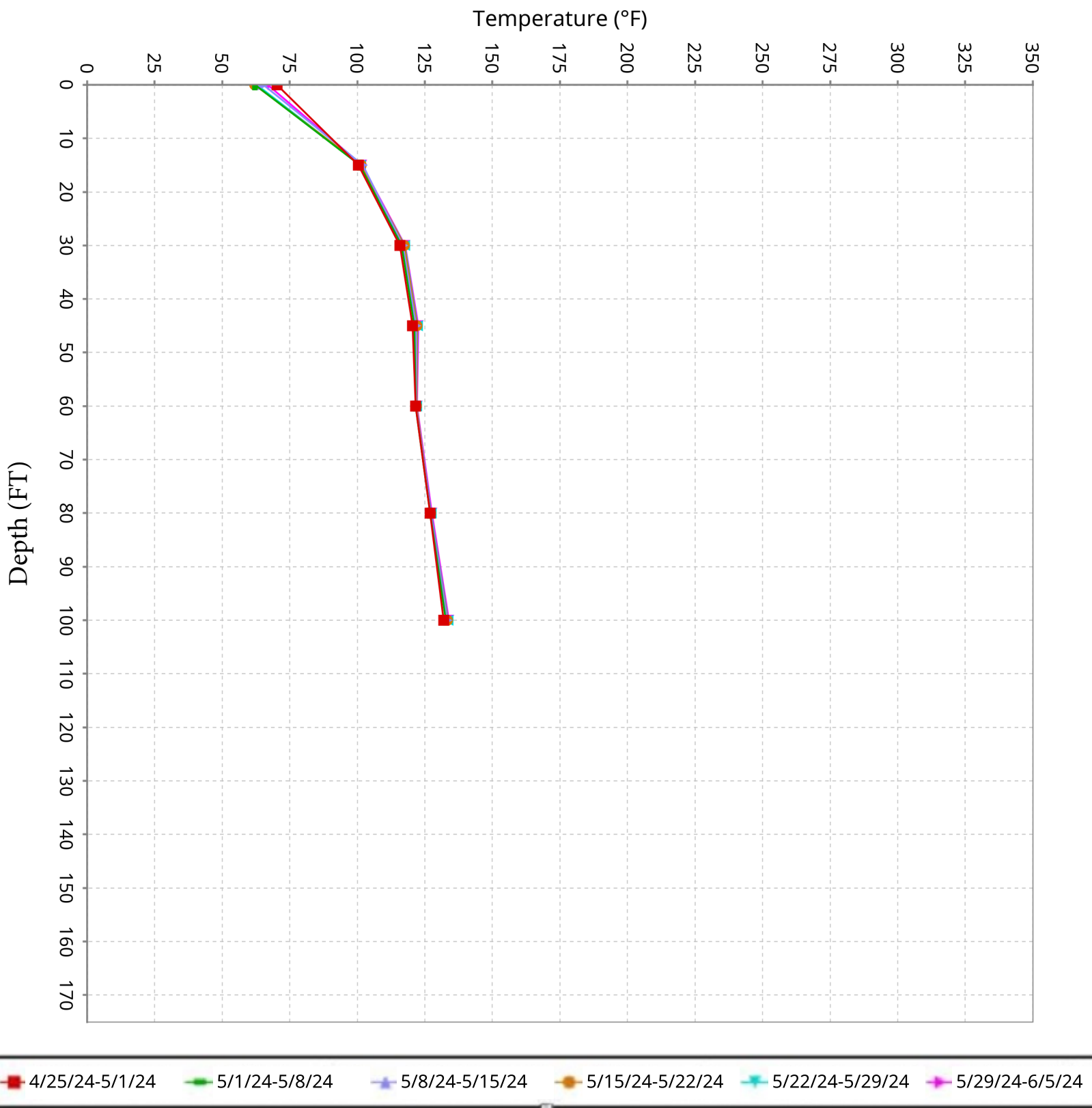
Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

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

Average data for April 25, 2024 to June 5, 2024

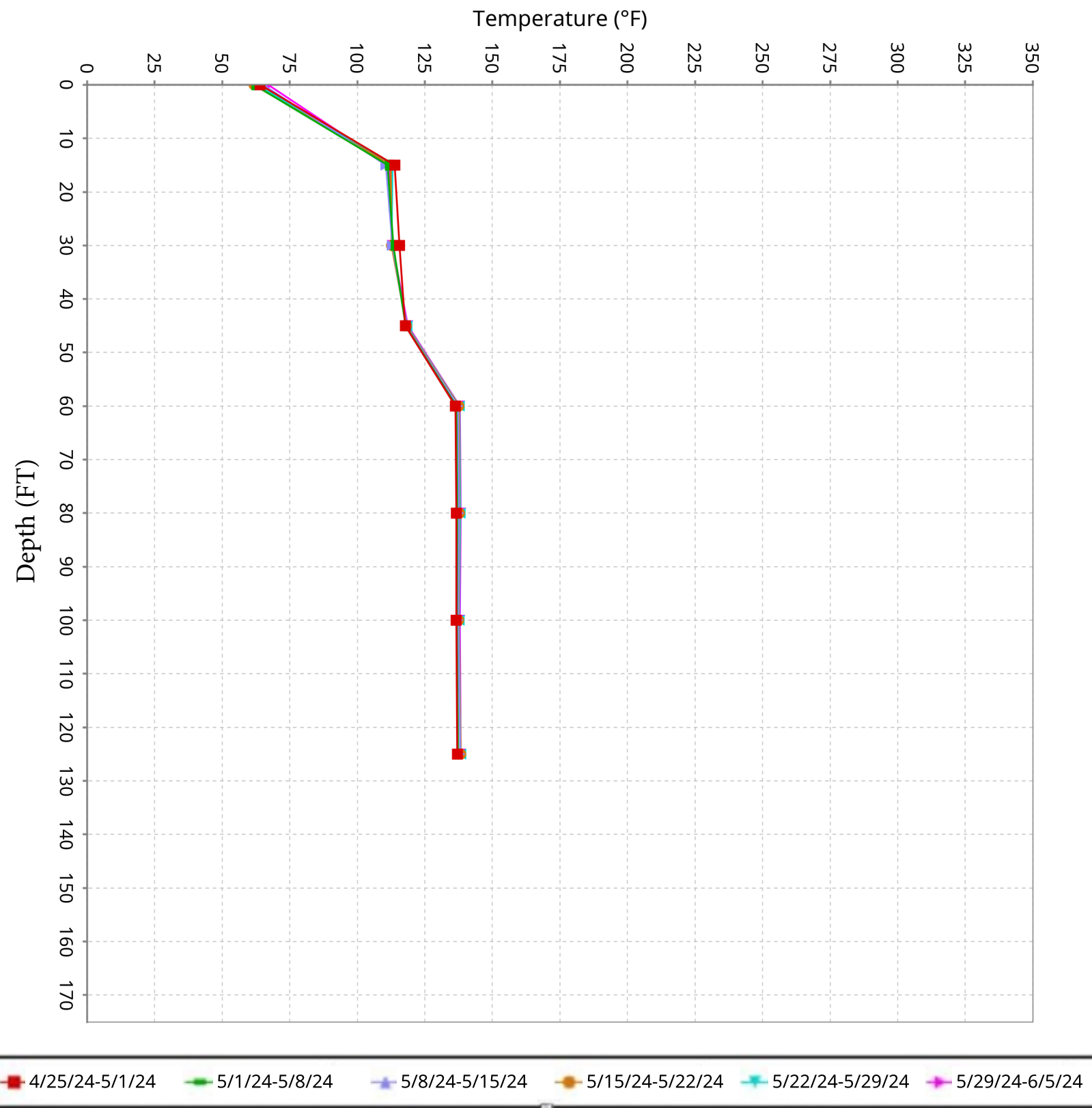


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-17

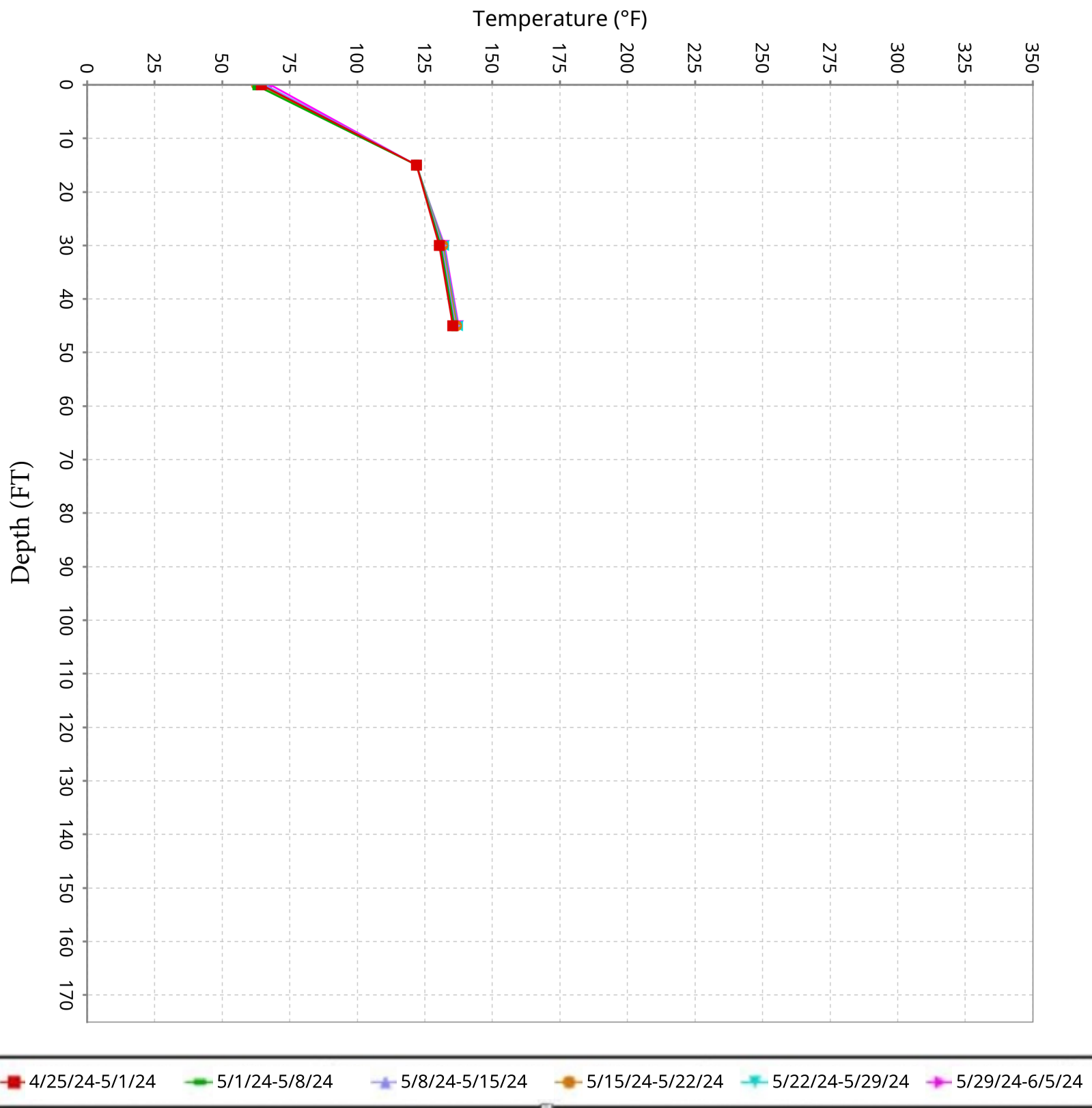
Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

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

Average data for April 25, 2024 to June 5, 2024

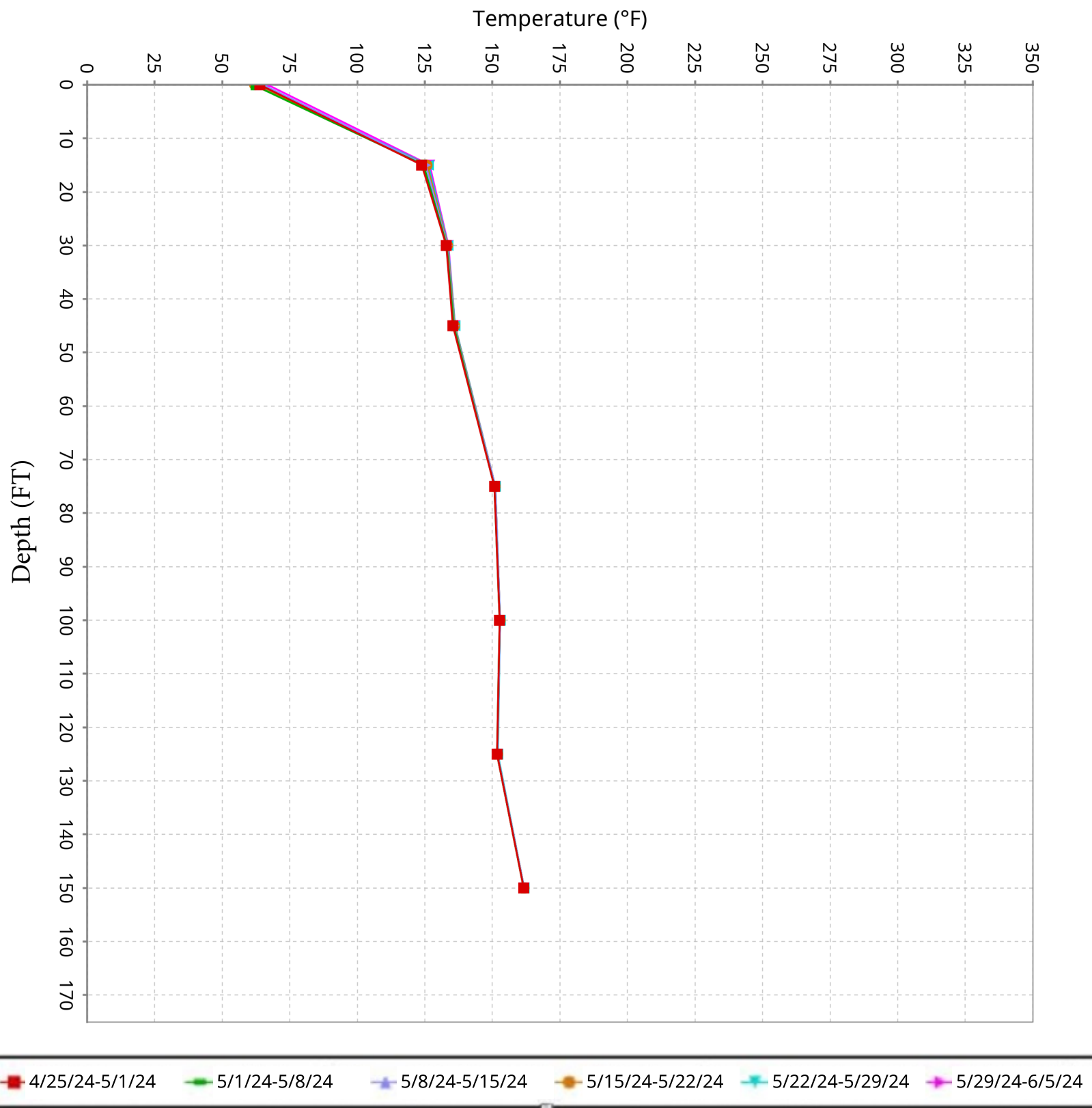


Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

Vertical Temperature Profiles from Temperature Probes at Chiquita Landfill

for TP-19

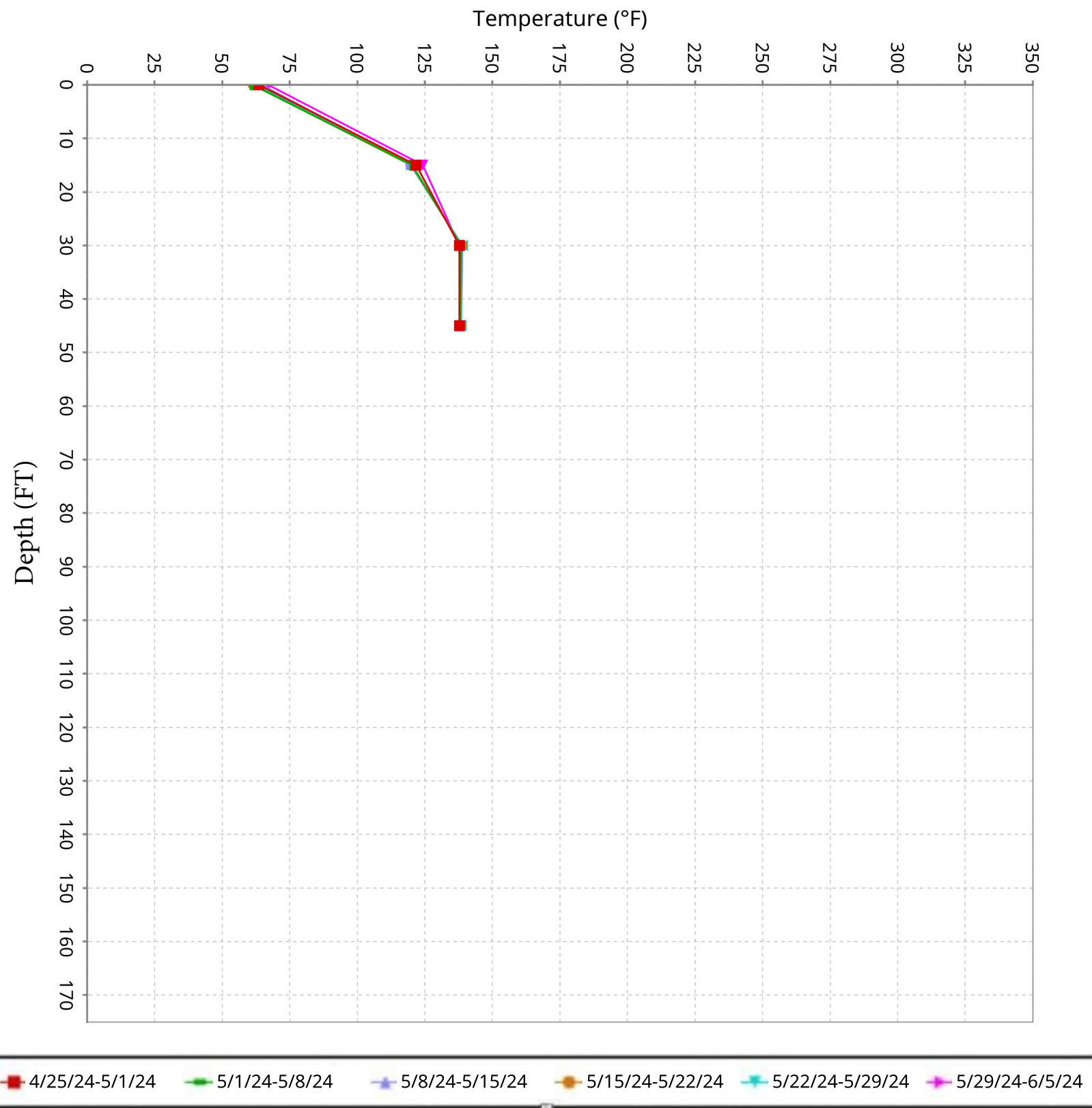
Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.

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

Average data for April 25, 2024 to June 5, 2024



Note: Data represents the arithmetic mean of the available temperature readings for the specified date range.