



Customer Focused. Planet Obsessed.

July 5, 2024

Luke LeMond
Site Manager
Solid Waste Program
State of Washington Dept. of Ecology
Central Regional Office
1250 West Alder St.
Union Gap, WA 98903-0009

Re: DTG Yakima – Agreed Order No. DE 21624 – Monthly Progress Letter – June

Dear Mr. LeMond:

In accordance with Section 7.3 of Agreed Order (AO) No. DE 21624, the following is a description of the actions taken during June 2024 to implement the requirements of this AO.

Activities:

On-site activities included weekly gas probe and every other week ambient monitoring. The once per month regulatory review meeting was also held on June 20, 2024 to assess conditions and the data. The data summary through June 2024 from Landfill Fire Control, Inc. (LFCI) is attached.

The Fire Soil Cover completion letter from Aspect Consulting was provided to Ecology on June 20, 2024.

Second Quarter groundwater monitoring was performed by Parametrix, including new wells MW-5S and MW-6S. A meeting to discuss statistical evaluation approaches to the groundwater monitoring data was held with Parametrix on June 13, 2024. Parametrix is revising the 2023 annual report and Q1 2024 report to reflect changes.

Second Quarter landfill gas monitoring was performed by Freestone on June 14, 2024 with no actionable detections. The report was submitted to Ecology on June 20, 2024.

Deviations from Plans (if any):

None.

Deviations Description from the Scope of Work and Schedule:

None.



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All Data Received or Collected:

Ambient and gas probe data for gases and temperature were emailed, separately, to Ecology weekly after measurements were taken. Gas probe data was entered into the tracking spreadsheets and assessed by LFCI. The summary of the data has been included as an attachment.

The Q2 LFG Report was submitted to Ecology.

Deliverables for the Upcoming Month:

Deliverables will include:

- Responses to Ecology comments to the Draft Limited RI Work Plan
- Final Emission Assessment Report
- Weekly ambient and gas probe data
- Revised 2023 Annual Groundwater Report
- Revised Q1 Groundwater Report
- Q2 Groundwater Report
- Groundwater well pump assemblies will be ordered for MW-5S and MWW-6S
- July Progress Report

Please contact me to discuss any of the above items.

Respectfully,

A handwritten signature in blue ink, appearing to read "Ian Sutton".

Ian Sutton
Director of Engineering
DTG Recycle
isutton@dtgrecycle.com

Enclosures: Focused Review of Trigger Levels – May 2024

cc: mbrady@parametrix.com
steven.newchurch@co.yakima.wa.us



Providing a full range of landfill fire control and prevention services.

- Fire Safety Training
- Fire Safety Audits
- Fire Prevention and Response Plans
- Fire Extinguishment Strategies
- Fire Extinguishment Services
- Fire Monitoring
- Environmental Monitoring
- Forensic Investigations

July 3, 2024

LFCIPRJ-2023-001

Mr. Ian Sutton, Director of Engineering
DTG Recycle
P.O. Box 14302 Mill Creek, WA 98082

By email: isutton@dtgrecycle.com

Re: Monthly Data Assessment Report DTG Yakima Landfill Fire Incident – June 2024

Dear Mr. Sutton,

LFCI has prepared a monthly review and update of gas and temperature monitoring data that is being collected at the DTG Recycle Landfill Fire in Yakima, Washington. The update includes maps showing the spatial distribution of heat and CO within the monitoring area and presents the data collected, highlighting trends and interpreting the results.

Considering the available data, the oxygen suppression appears to be working, but the fire suppression response is slow on account of low biological activity within the landfill. Nevertheless, the highest observed temperatures at GP-3 continue to decline at a steady rate. Temperatures continue to decline, however CO has recently been increasing in several locations and remained high in T-3.

Plotting of the temperature and CO data in plan view clearly shows that the area affected by fire has markedly decreased over time. Based on the available data, LFCI believes that a small smolder continues to be active in close proximity to GP-3, and that the rate of combustion of the smolder is steadily decreasing.

Based on this, LFCI recommends that monitoring continue on a weekly basis until it can be shown that CO levels in all locations have decreased to below 200ppm. At that time, monitoring can be decreased for prevention purposes.

We trust that this report provides the information you require, and should you need anything else please don't hesitate to contact the undersigned.

Sincerely,

LANDFILL FIRE CONTROL INC.

Dr. Tony Sperling, P.Eng.
President



July 3, 2024

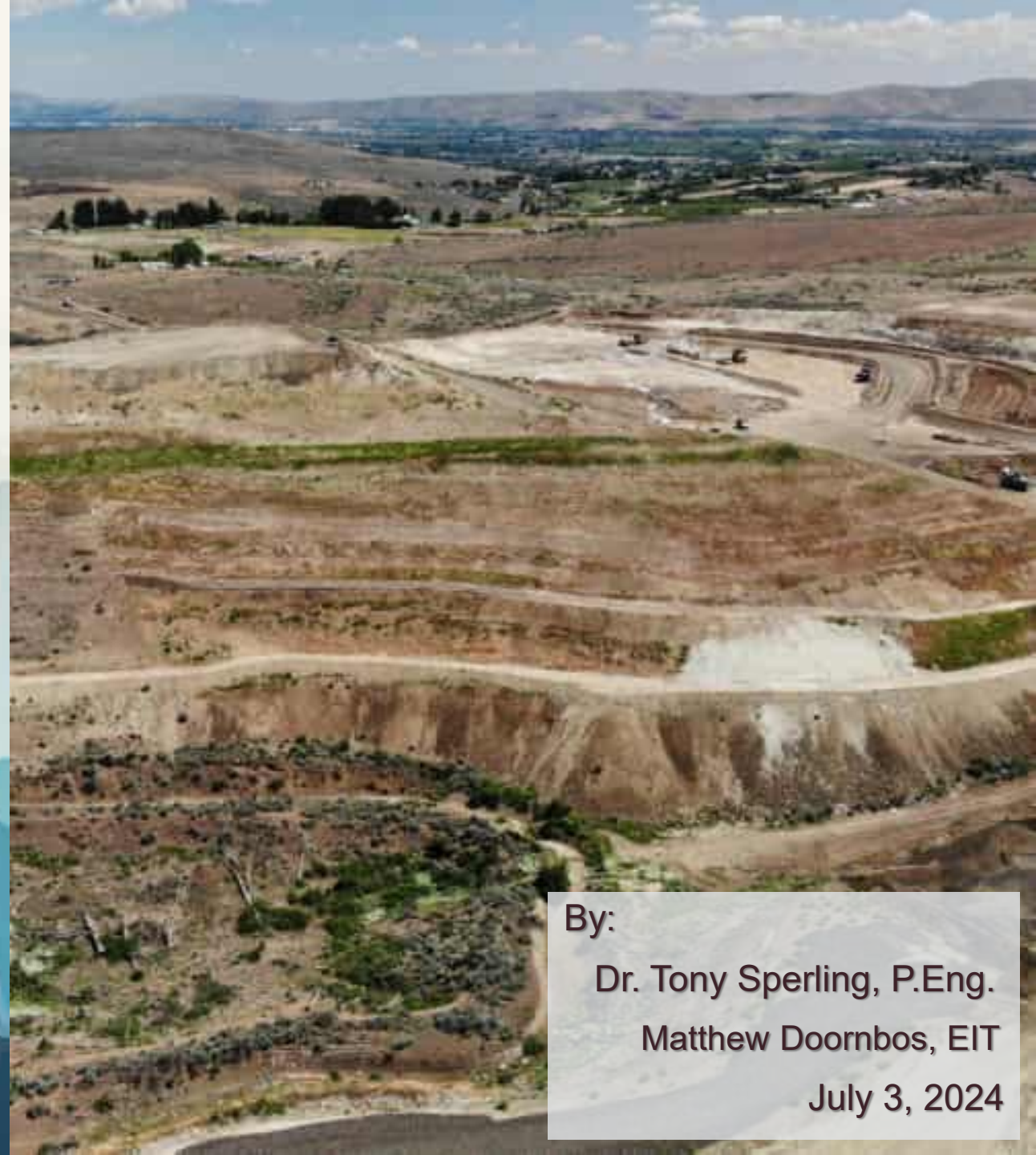
LANDFILL FIRE CONTROL INC.

#8-1225 East Keith Rd., North Vancouver, BC – V7J 1J3
P: (604)-986-7723 E: sperling@sperlinghansen.com
www.landfillfire.com



DTG LPL LANDFILL FIRE INVESTIGATIONS AND MITIGATION

Monthly Monitoring Data Review



By:

Dr. Tony Sperling, P.Eng.

Matthew Doornbos, EIT

July 3, 2024

Agenda

Monitoring Data Review

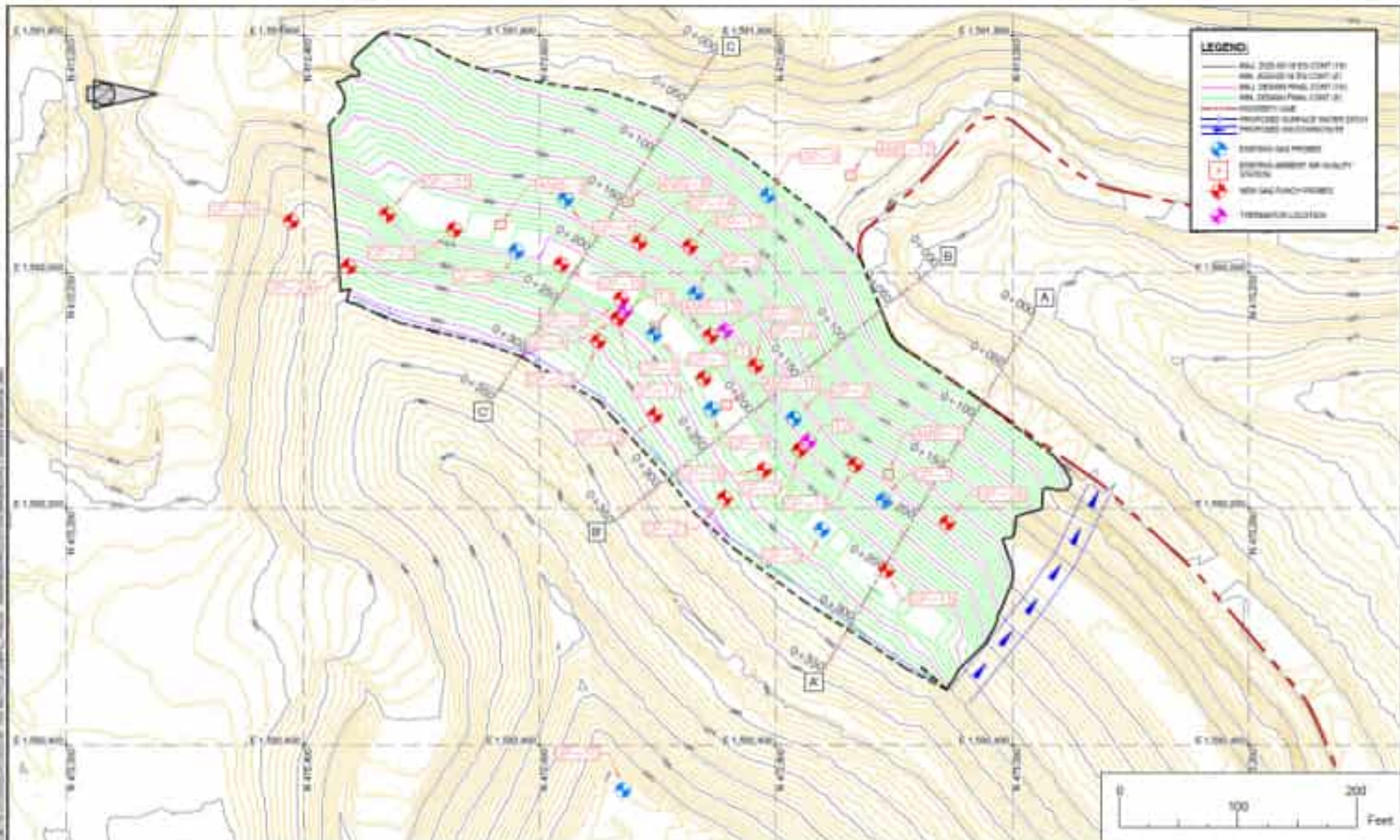
CO, Temp, O₂, VOC, H₂S, LEL, CH₄

Thermistor Temperature Data

Overall Interpretation







10/15/2013 10:30 AM - Project: Design Subgrade - 10/15/2013 10:30 AM - User: jh...


Sensitiv Human Associates
 10000 Lakeshore Blvd.
 Suite 1000
 Chicago, Illinois 60643
 Phone: (773) 441-7700

NO.	REV.	DESCRIPTION	DATE

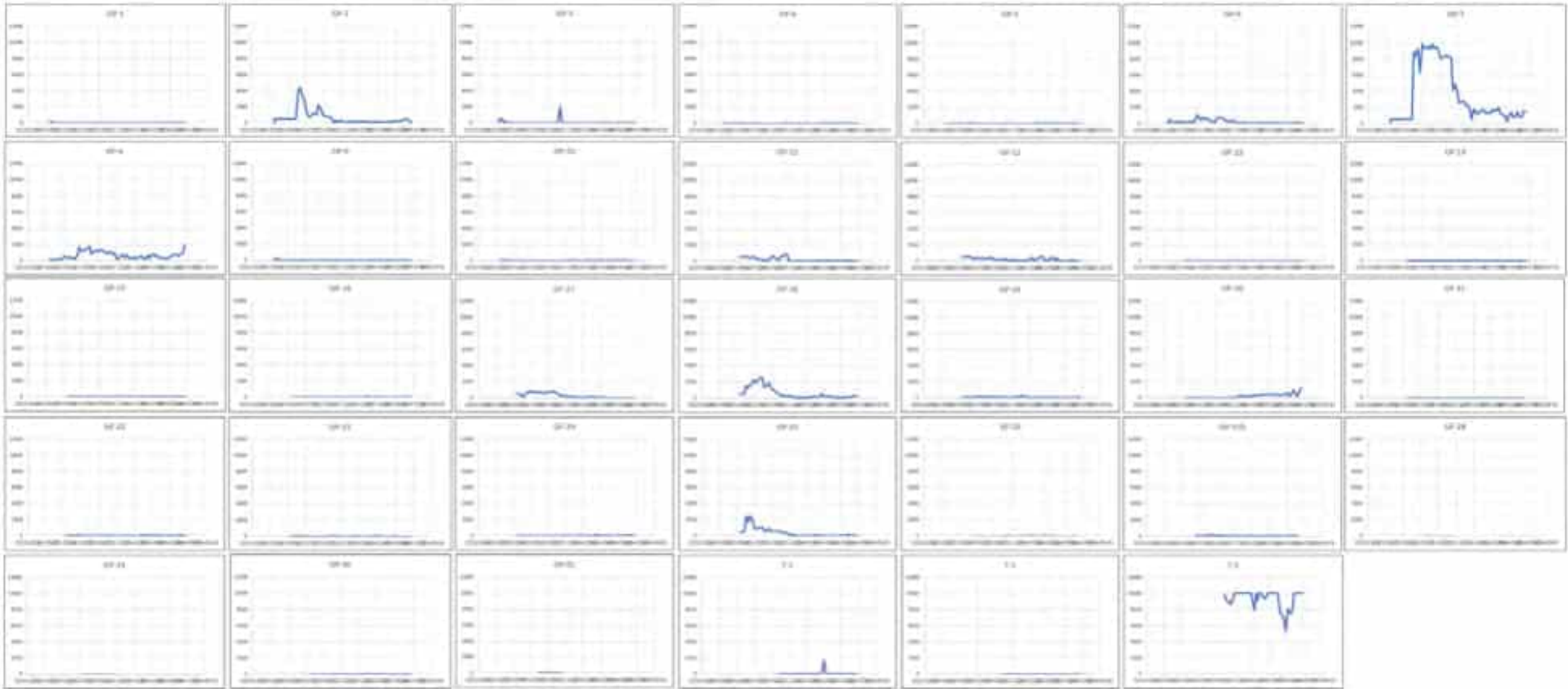
NOTE OF DISCLAIMER
 The design of this subgrade plan and plan notes are prepared in accordance with the professional engineering laws and regulations of the State of Illinois. The design of this subgrade plan and plan notes is based on the information provided to the engineer by the client. The engineer is not responsible for the accuracy of the information provided to the engineer by the client.

CLIENT
 [Blank space for client name]

DESIGNED BY: T. TORRES	DATE: 10/15/13
DRAWN BY: T. TORRES	DATE: 10/15/13
CHECKED BY: T. TORRES	DATE: 10/15/13
APPROVED BY: [Signature]	DATE: 10/15/13

DESIGN SUBGRADE		
PROJECT NO.	NO.	SHEET
2013-01-001	-	001

CO Levels by Individual Wells

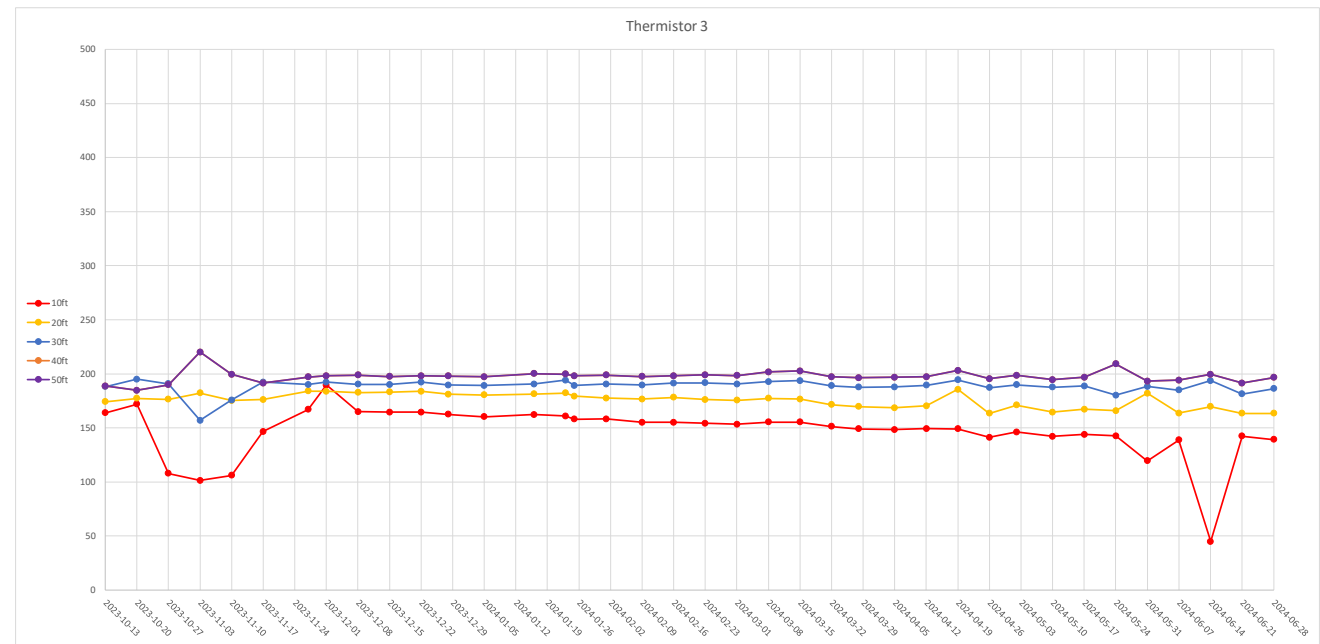
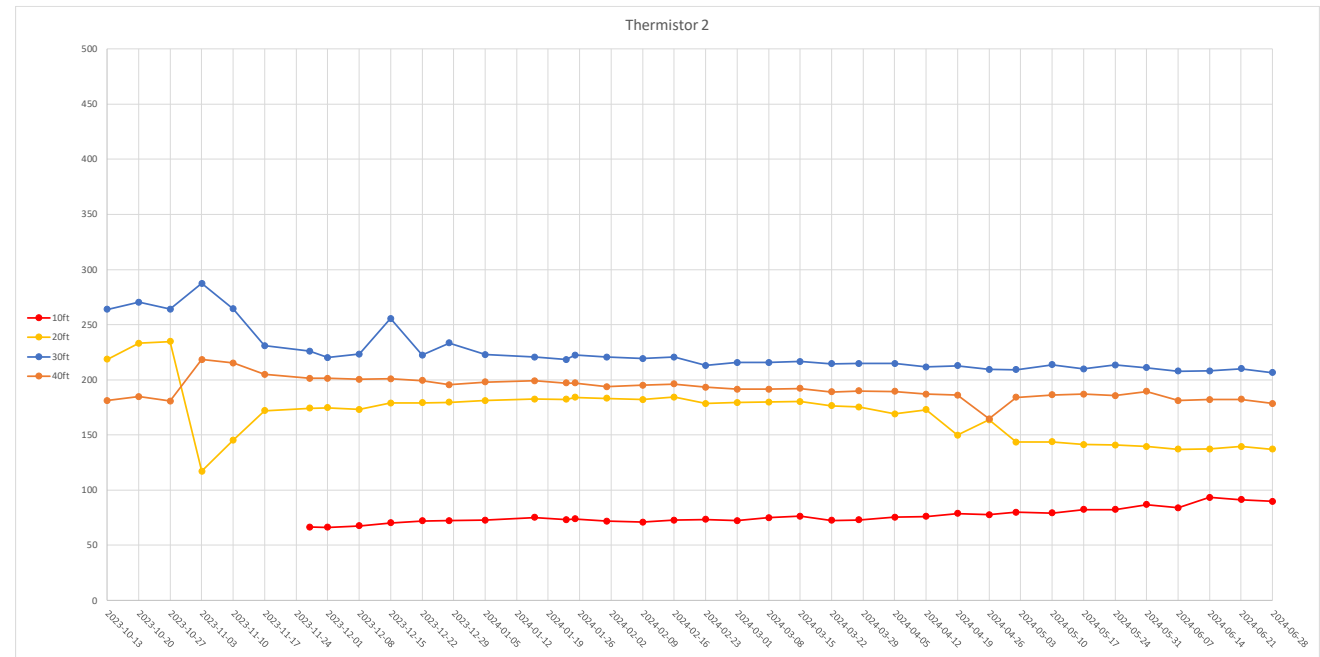
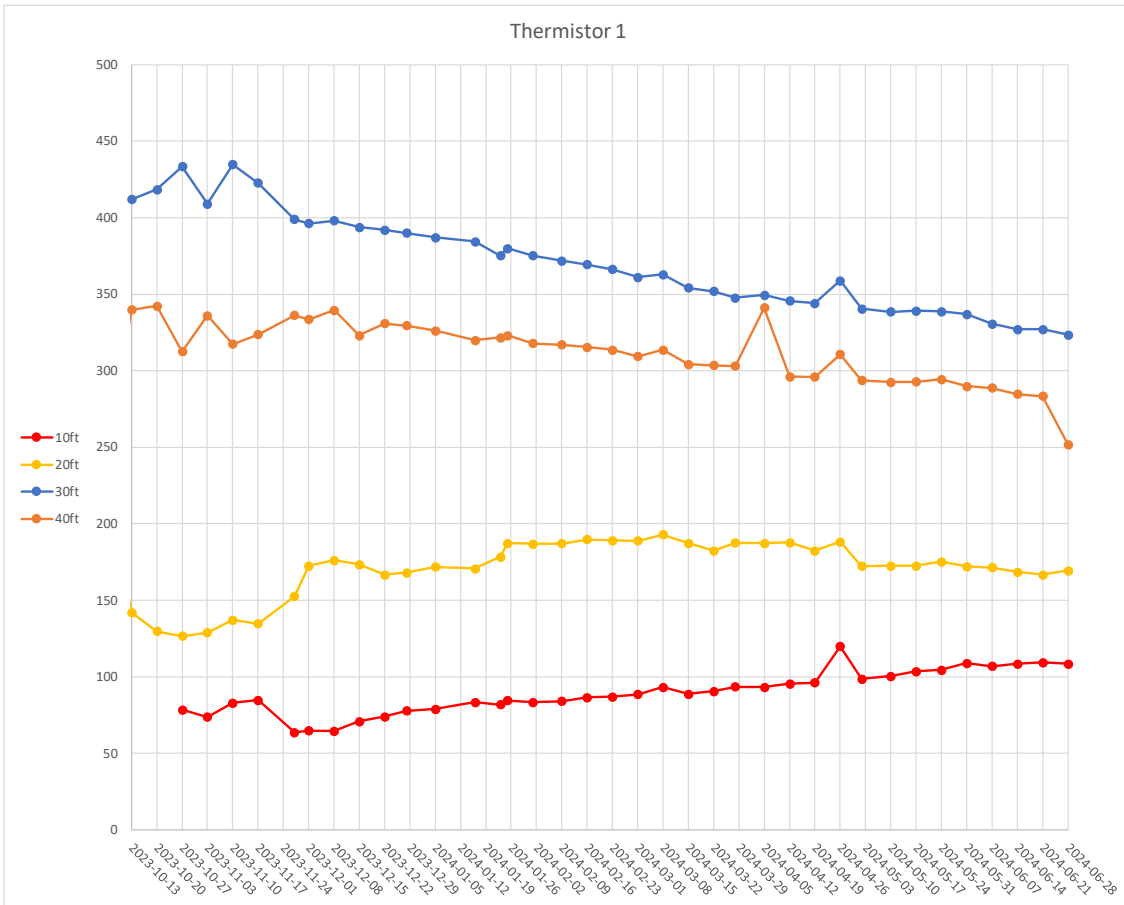


Thermistor Temperatures

Thermistor temperatures mostly stable. Decreasing trend continues in highest temp locations

Increases due to radiant heat effects, normal behavior does not indicate fire getting worse.

Will keep a close eye on T-1 to ensure no major changes.

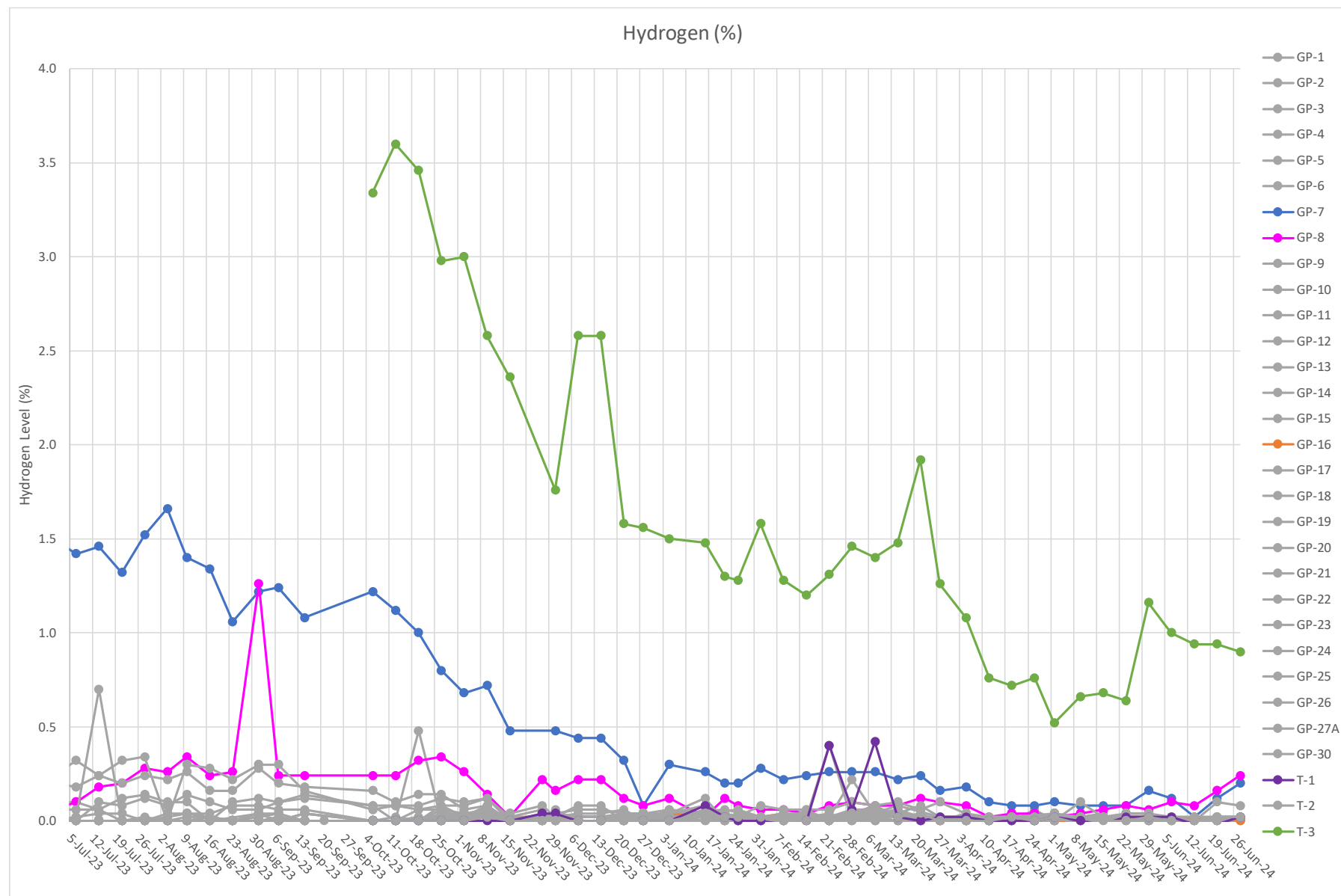


H₂

Hydrogen seems to be similar to the CO levels.

T-3 is trending downward, and has decreased significantly after cover was applied.

Even if H2 data is scrubbed from the CO data, GP-7 and T-3 remain high in CO.

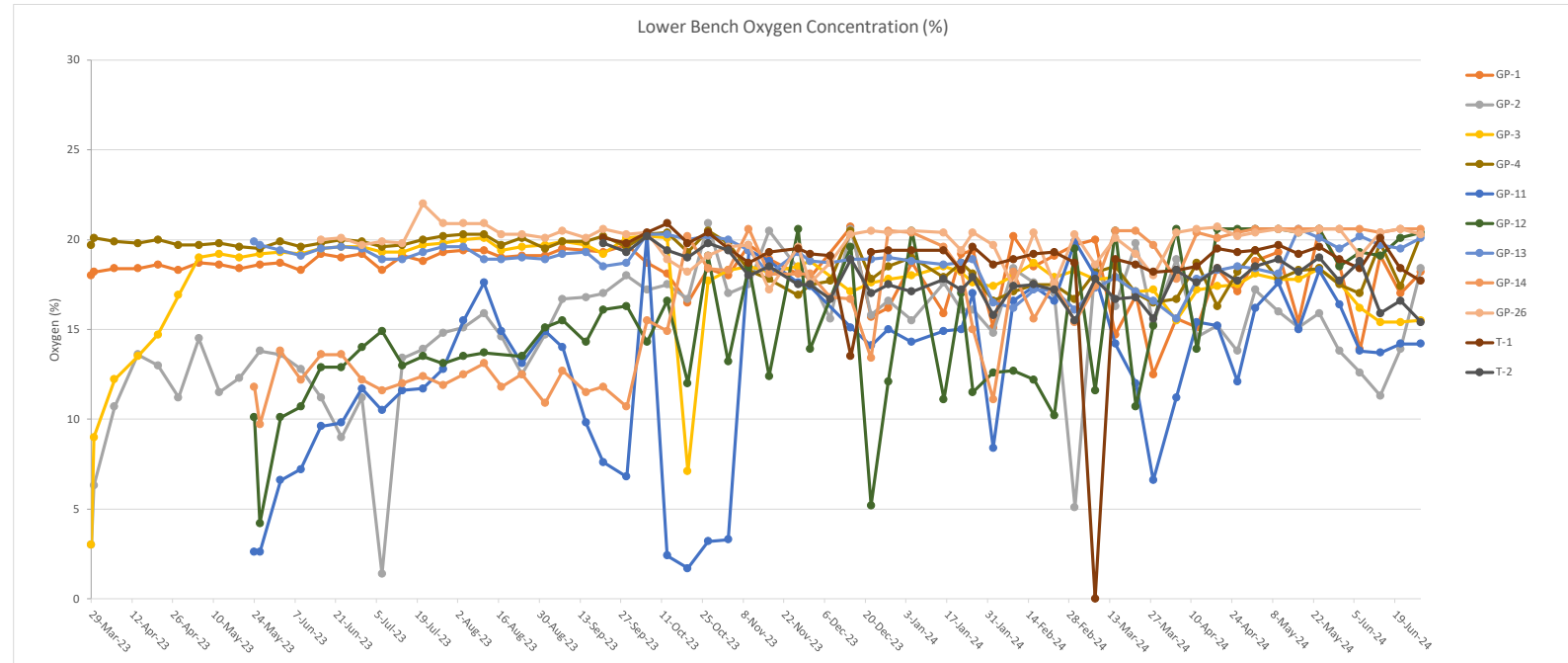
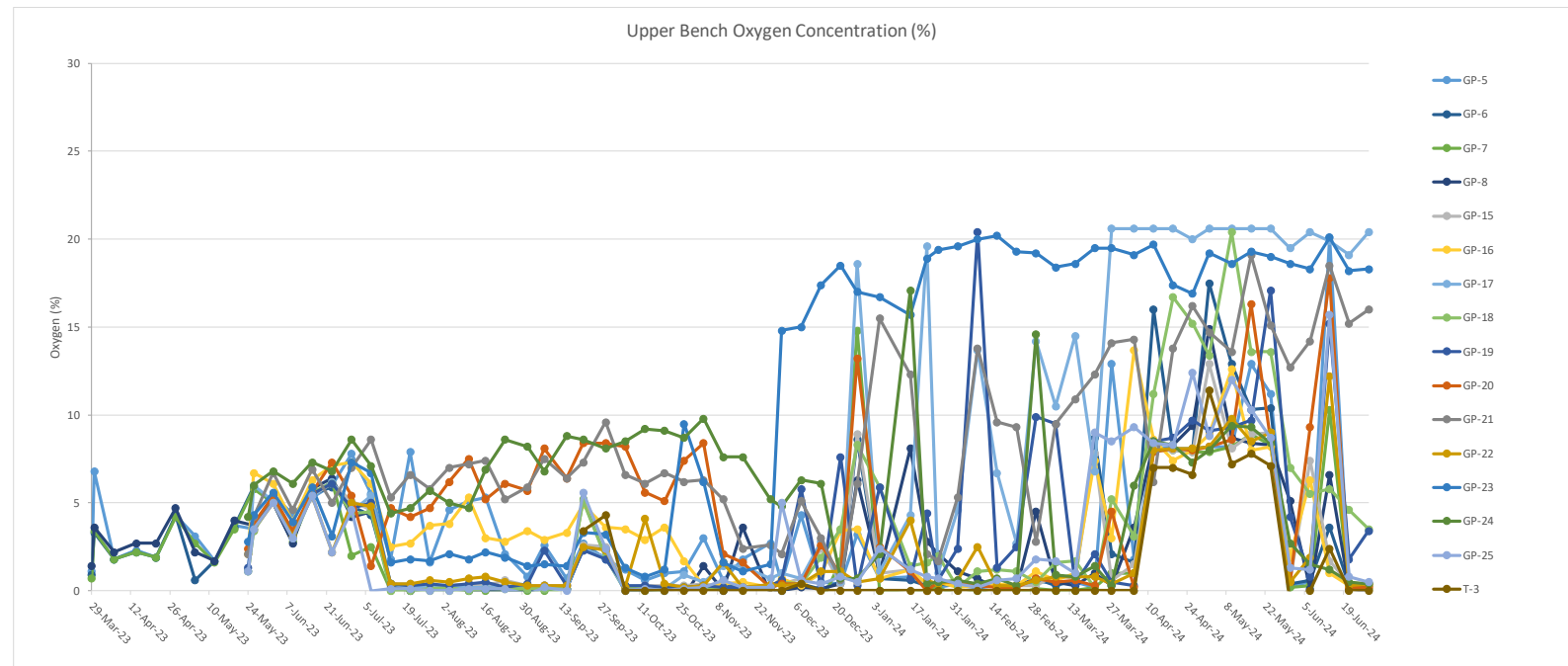




Upper bench has returned to lower concentrations

Oldest portion of Landfill is probably relatively inert and biologically inactive, producing very little methane. As a result, pore space is full of atmospheric air.

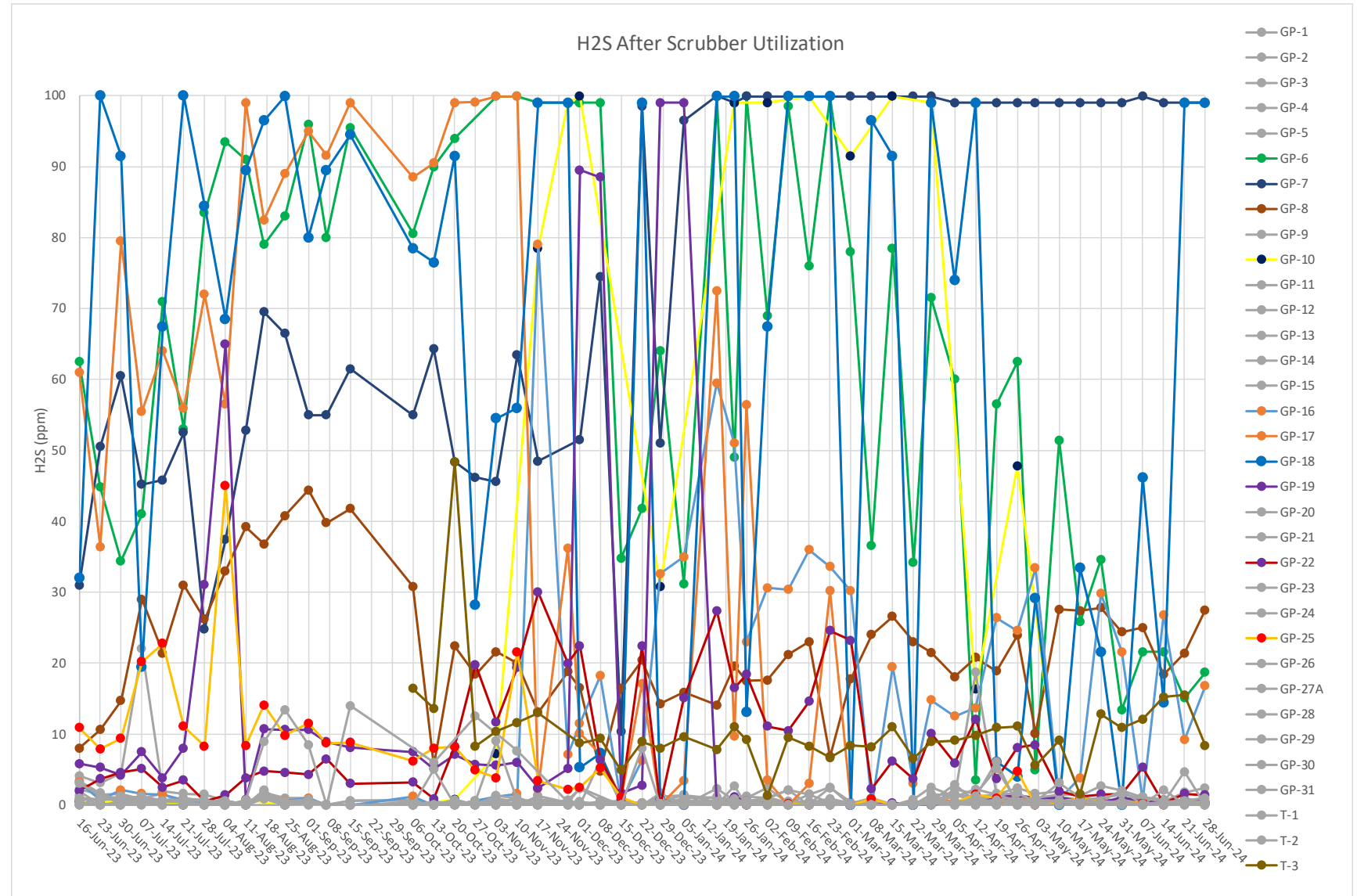
Some GPs likely susceptible to swings in pressure – LFCI believes this is causing the spikes.



H₂S

H₂S data continues to be noisy, likely affected by atmospheric pressure fluctuation. Decreasing trend visible in past months.

GP-7 and GP-18 are high, all other monitoring locations have now decreased to below 30 ppm.

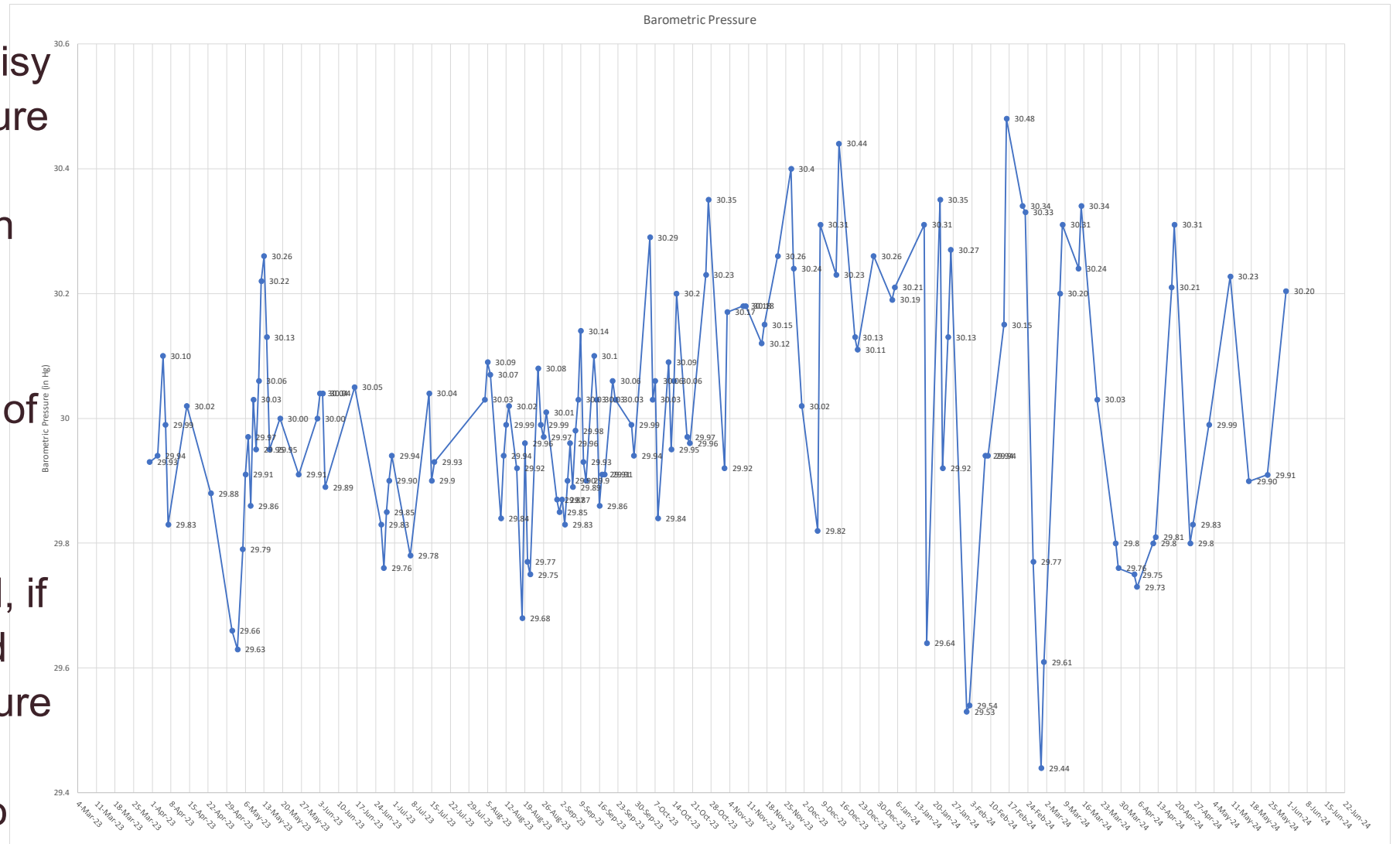


Barometric Pressure

Barometric data is less noisy than through winter, pressure swings are not as intense and overall trend has been average decreasing pressure.

This means less intrusion of atmospheric oxygen into landfill since March, 2024.

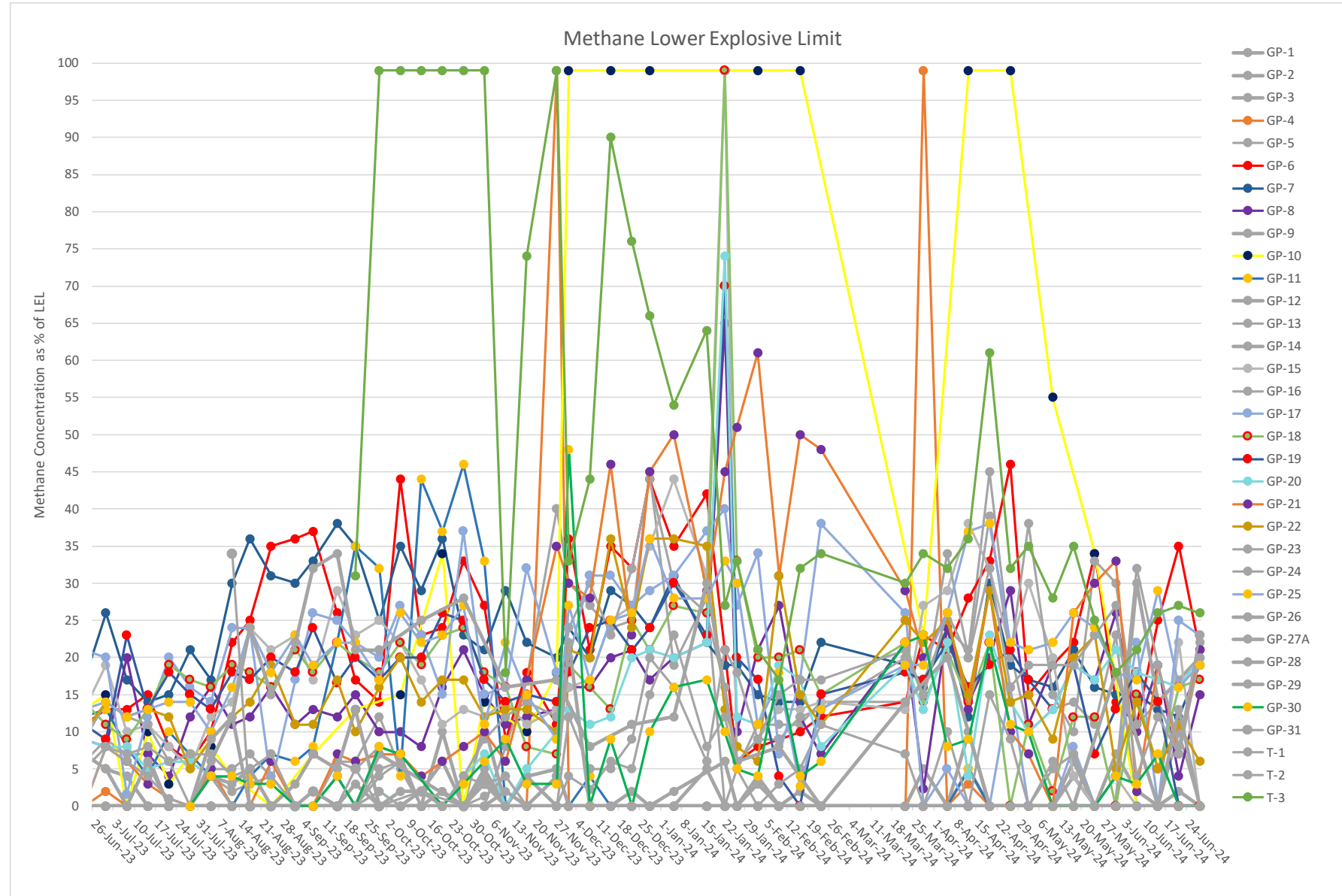
Based on last year's trend, if same pattern holds, would expect stable lower pressure through summer. This should reduce oxygen into landfill.



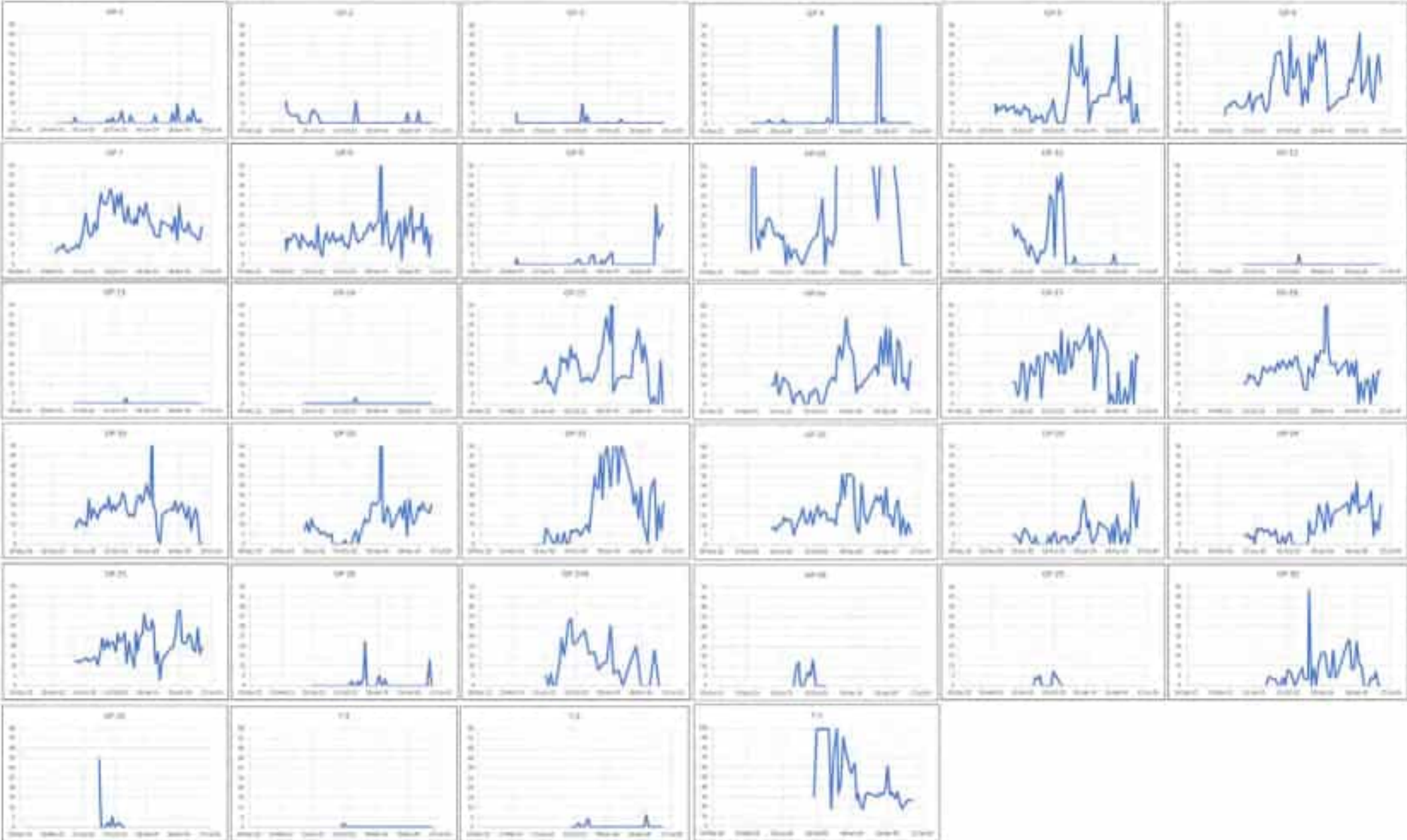
Lower Explosive Limit

Many data points fluctuating wildly – methane composition is a better indicator of levels within the landfill.

LEL has remained mostly consistent over the last month, under 35%



LEL for individual GP





● High Temp

□ High CO

▲ High H₂S

▼ High VOC

● Existing GPs
● New GPs



Fire Path



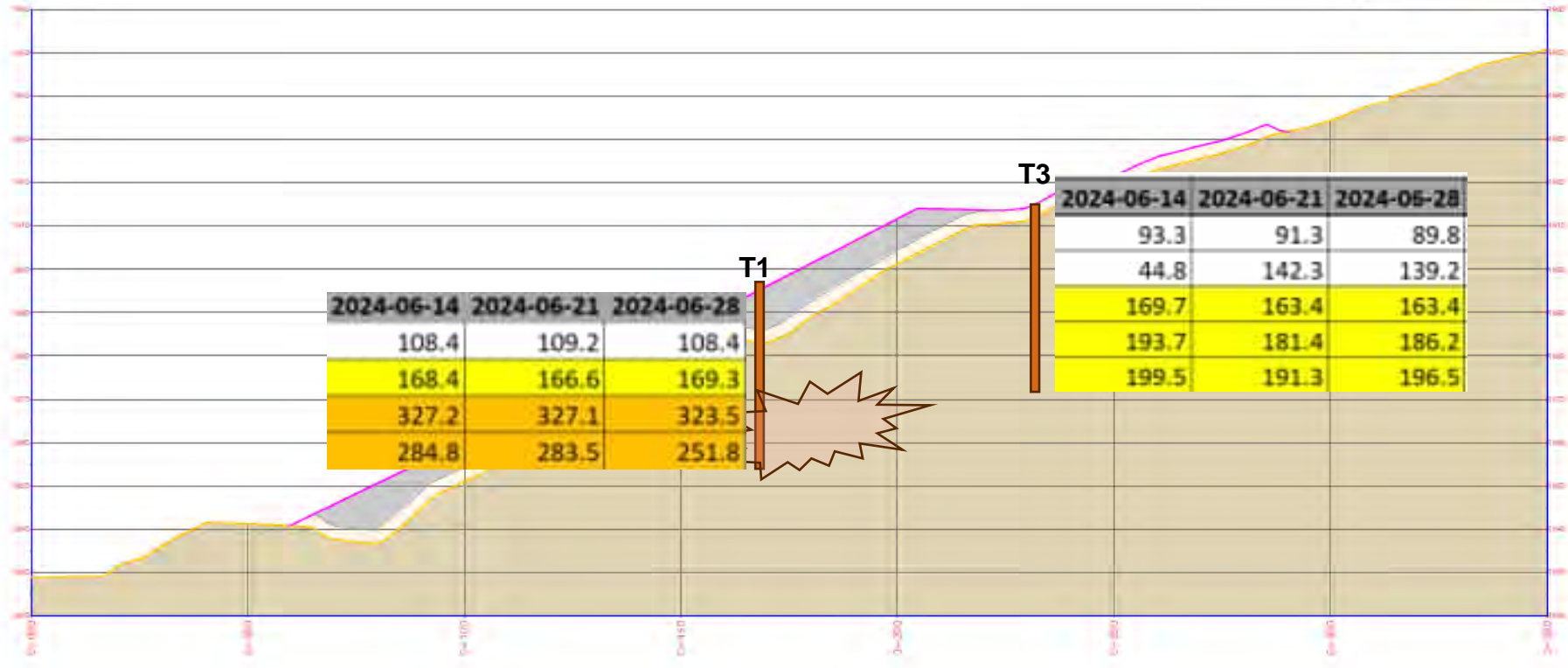
Gases are venting through GP-7 and T-3

Fire appears to be smoldering in this area

PDF GENERATED BY: Arup Tools (6/14/2024 4:15 PM) X:\LANDFILL\RECONSTRUCTION\PROJECTS\DTG\2023-001 - DTG RECYCLE LANDFILL PROJ 4 - DRAWINGS\PRODUCTION DRAWING\FIG 4-B SECTION.DWG

LEGEND:

- 2023-05-16 EG PROFILE
- DESIGN SUBGRADE PROFILE
- MINUS 10" SHOT ROCK
- 3' COMPACTED LOW PERMEABILITY SOIL
- EXISTING GROUND



	2024-06-14	2024-06-21	2024-06-28
Top Elevation	108.4	109.2	108.4
Subgrade Elevation	168.4	166.6	169.3
Shot Rock Top Elevation	327.2	327.1	323.5
Shot Rock Bottom Elevation	284.8	283.5	251.8

	2024-06-14	2024-06-21	2024-06-28
Top Elevation	93.3	91.3	89.8
Subgrade Elevation	44.8	142.3	139.2
Shot Rock Top Elevation	169.7	163.4	163.4
Shot Rock Bottom Elevation	193.7	181.4	186.2
Shot Rock Bottom Elevation	199.5	191.3	196.5

SECTION B - B'
 H - 1" = 25'
 V - 1" = 25'



**SPEARLING
HANSEN
ASSOCIATES**

Landfill Services Group
 • Landfill Site
 • Design & Operations Plans
 • Landfill Closure
 • Environmental Monitoring

#8 - 1225 Keith Road East
 North Vancouver, B.C. V7J 1J5
 Phone: (604) 960-7725

REV	DATE	REVISIONS	DRAWN	CHKD	APPD

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This drawing is not approved for construction unless it bears a signed and dated engineers' stamp, effixed on or after the date of the last revision.

CLIENT:

DESIGN BY: T.SPEARLING	SHA PROJECT # 2023-001
DRAWN BY: A.TSIANG	DATE CREATED: 5/14/2023
CHECKED BY: T.SPEARLING	HORIZONTAL SCALE: 1" = 25'
APPROVED BY: -	VERTICAL SCALE: 1" = 25'

DTG RECYCLE LANDFILL FILE		
SECTION B-B'		
DRAWING NO.	REV	ISSUE
2023-001-005	-	005

ADJUST SCALE 50% FOR 34"X22" SHEET

Data Interpretation

Suppression efforts are working. CO levels and temperatures have decreased dramatically since cover fill was placed.

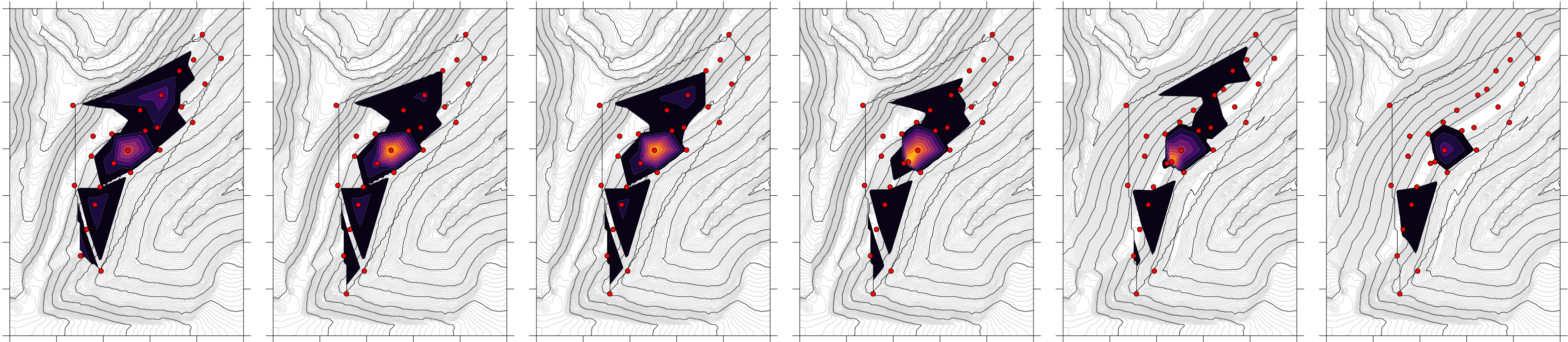
In LFCI experience, CO has been best indicator of suppression at other landfill sites. CO levels in T-3 have remained high, GP-7, GP-8, and GP-20 have increased since last month

High O₂ continues to fluctuate - this is likely due to large atmospheric pressure swings and pervious waste mass allowing entry of ambient air.

O₂ levels have dropped off significantly in most probes in the upper bench since last monitoring event.

Temperature has dropped significantly all around, GP-3 has continued to fall, but at a slower rate than before.

Overall, it appears that the waste is smoldering underneath GP-3 and T-1 (elevated temperature) and a 'chimney' effect is occurring, causing higher CO and VOC's in T-3 and GP-7.



July 2023

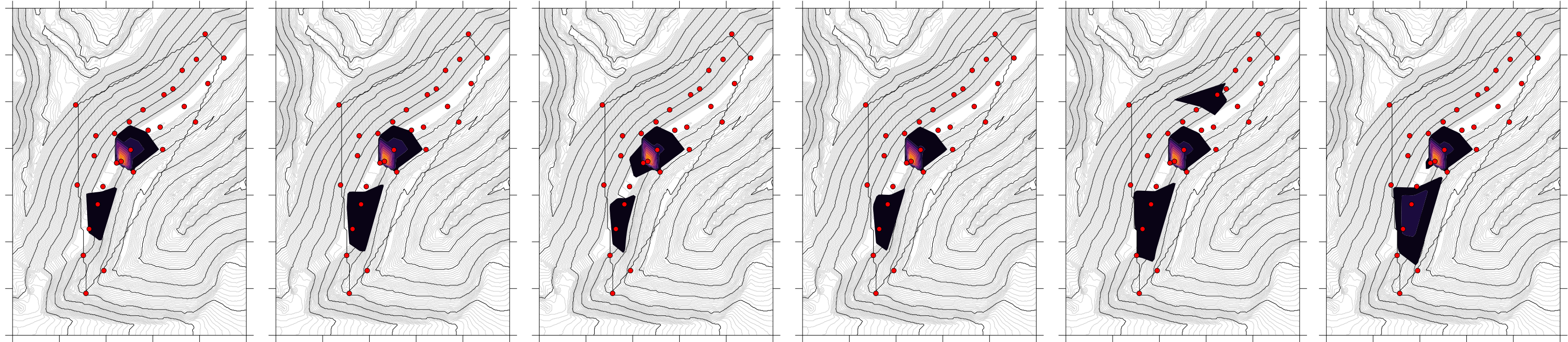
August 2023

September 2023

October 2023

November 2023

December 2023



January 2024

February 2024

March 2024

April 2024

May 2024

June 28, 2024



- Data taken from first monitoring event of each month unless noted otherwise
- Data was linearly interpolated between data points
- Datapoints (probe locations) represented in red
- CO levels are measured in ppm
- Ground contours are of existing ground at beginning of project, with design contours added for after addition of fill



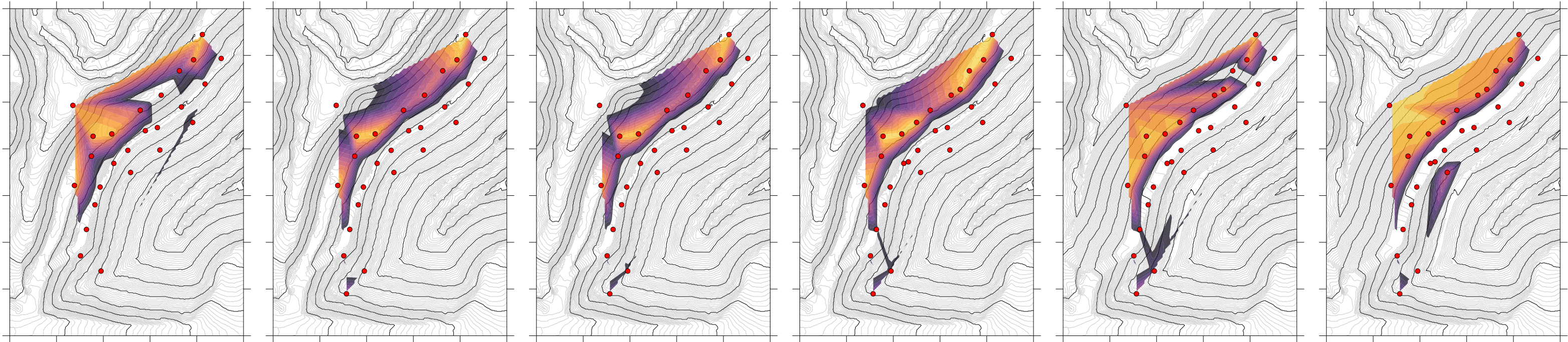
No.	DATE yr/m/day	REVISIONS	DRAWN	CHK'D	APP'D
1	2024/07/02	ISSUED FOR REVIEW	MD	TS	TS

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DESIGN BY:	T. SPERLING
DRAWN BY:	M. DOORBOS
DATE CREATED:	2024/07/02
SHA PROJECT #	LFCI-2023-001

DTG RECYCLE LANDFILL FIRE		
MONTHLY MONITORING SUMMARY		
SPATIAL MAPS - CO		
DRAWING NO.	REV	SHEET
LFCI-2023-001-06-CO	1	1



July 2023

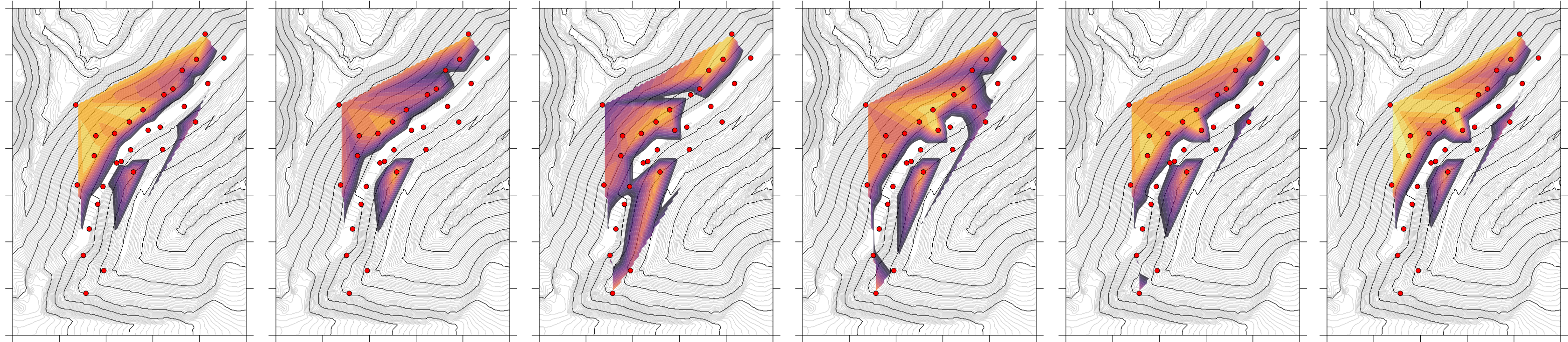
August 2023

September 2023

October 2023

November 2023

December 2023



January 2024

February 2024

March 2024

April 2024

May 2024

June 2024



- Data taken from first monitoring event of each month
- Data was linearly interpolated between data points
- Datapoints (probe locations) represented in red
- O2 levels are measured in % composition
- Ground contours are of existing ground at beginning of project, with design contours added for after addition of fill



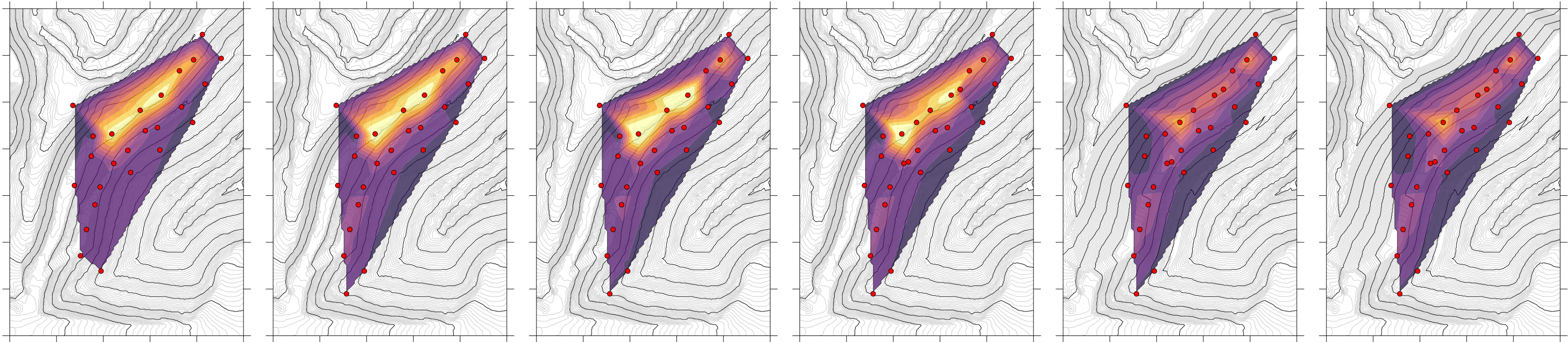
No.	DATE yr/m/day	REVISIONS	DRAWN	CHK'D	APP'D
1	2024/07/02	ISSUED FOR REVIEW	MD	TS	TS

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DRAWN BY:	M. DOORBOS
DATE CREATED:	2024/07/02
SHA PROJECT #	LFCI-2023-001

DTG RECYCLE LANDFILL FIRE		
MONTHLY MONITORING SUMMARY		
SPATIAL MAPS - O2		
DRAWING NO.	REV	SHEET
LFCI-2023-001-06-02	1	1



July 2023

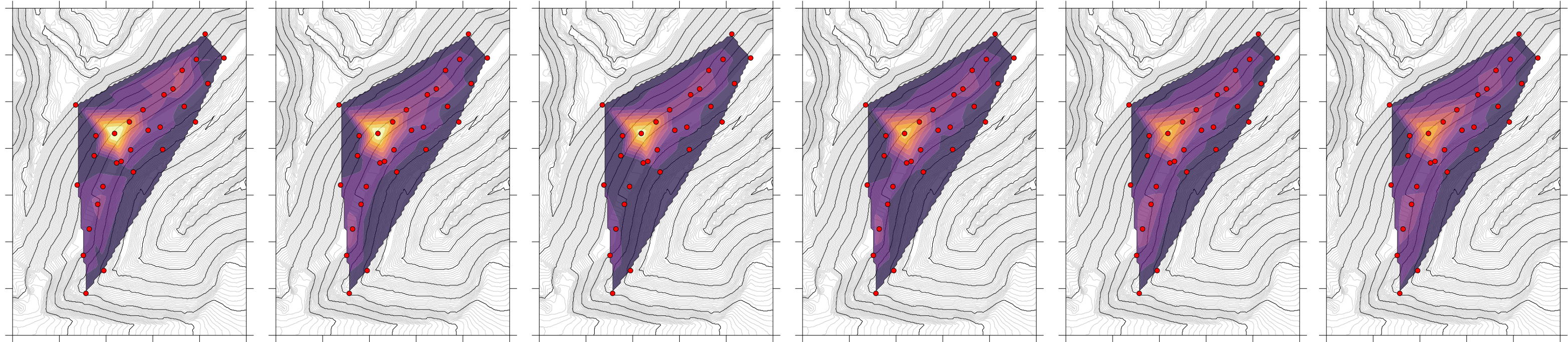
August 2023

September 2023

October 2023

November 2023

December 2023



January 2024

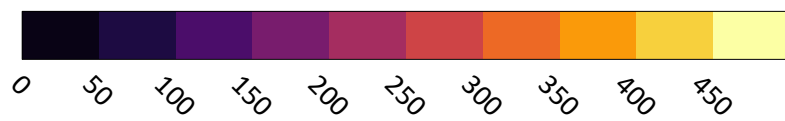
February 2024

March 2024

April 2024

May 2024

June 28, 2024



- Data taken from first monitoring event of each month
- Data was linearly interpolated between data points
- Datapoints (probe locations) represented in red
- Temperatures measured in Degrees Farenheit
- Contours are of existing ground at beginning of project, with design contours added for after addition of fill



No.	DATE yr/m/day	REVISIONS	DRAWN	CHK'D	APP'D
1	2024/07/02	ISSUED FOR REVIEW	MD	TS	TS

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DRAWN BY:	M. DOORNBOS
DATE CREATED:	2024/07/02
SHA PROJECT #	LFCI-2023-001

DTG RECYCLE LANDFILL FIRE		
MONTHLY MONITORING SUMMARY		
SPATIAL MAPS - TEMP		
DRAWING NO.	REV	SHEET
LFCI-2023-001-06-TEMP	1	1