May 14, 2025

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 – April

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 April 2025 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 held on April 17, 2025. The monitoring data summary through April 2025 from Landfill Fire Control, Inc. (LFCI) is attached.

Q1B Groundwater sampling was performed on April 1, 2025.

The RI Work Plan was submitted April 3, 2025 and deemed Complete by Ecology on April 10, 2025.

The Updated Hydrogeological Characterization Report was submitted was deemed complete by Ecology on April 24, 2025.

Gregory Drilling began new groundwater well drilling on April 23, 2025.

Deviations from Plans (if any):
None.

Deviations Description from the Scope of Work and Schedule:
None.

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.

Address
22745 29th Dr. SE, Ste 200,
Bothell, WA 98021

Contact
425 549 3000
dtgrecycle.com

Deliverables for the Upcoming Month:
Deliverables will include:

- Weekly ambient and gas probe data
- May Progress Report
- Q2A groundwater monitoring is scheduled for May 7, 2025
- Ecology to assess the LPL with a thermal drone on May 8, 2025
- Q1 Groundwater Report

Please contact me to discuss any of the above items.

Respectfully,

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

Enclosures: LFCI Data Update – April 2025

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

May 14th, 2025 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 – April 2025

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 temperature, carbon monoxide, and oxygen within the monitoring area and presents the data collected, highlighting trends and interpreting the results.

Following the continued slow signs of suppression observed in the past several months, the month of April has exhibited a levelling off of trends in temperature and gas composition. The past month has seen the rate of cooling level off, with stable temperatures prevailing.

The availability of increased O2 has likely initiated a slight uptick in thermal activity and CO concentration, but the downward trend has reestablished at the end of the month.

The collected data has indicated that the subsurface smolder is becoming less and less active since the soil cover was applied. Temperature and other parameters have all indicated a decrease in fire activity, but CO has increased in the past two months. Part of the increase can be attributed to higher H2 levels, but the main cause is believed to be a slight increase in smolder activity on account of large swings in atmospheric pressure which tend to push oxygen into the landfill waste mass.

Per LFCI's fire control plan, monitoring can be reduced to once every two weeks once CO levels drop below 500 ppm and the fire can be declared extinguished after CO concentration is below 200 ppm.

Plotting the temperature data in plan view clearly shows that the area affected by fire has markedly decreased over time. As stated in previous monthly updates, LFCI believes that the data shows a small smolder continues to be active near GP-3, and that the rate of combustion of the smolder is steadily decreasing, however slowly. Based on the extinguishment target of temperature dropping below 180°F, we currently project that the fire will be declared extinguished within six months to one year. However; if the temperature response continues to level off around 300 F, additional intervention may become necessary.

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 500ppm, once corrected for cross sensitivity effects. At that time, monitoring can be decreased for prevention purposes.

Given the recent response and the reduced time line now projected to extinguishment, LFCI is of the opinion that further intervention is not warranted at this time.

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

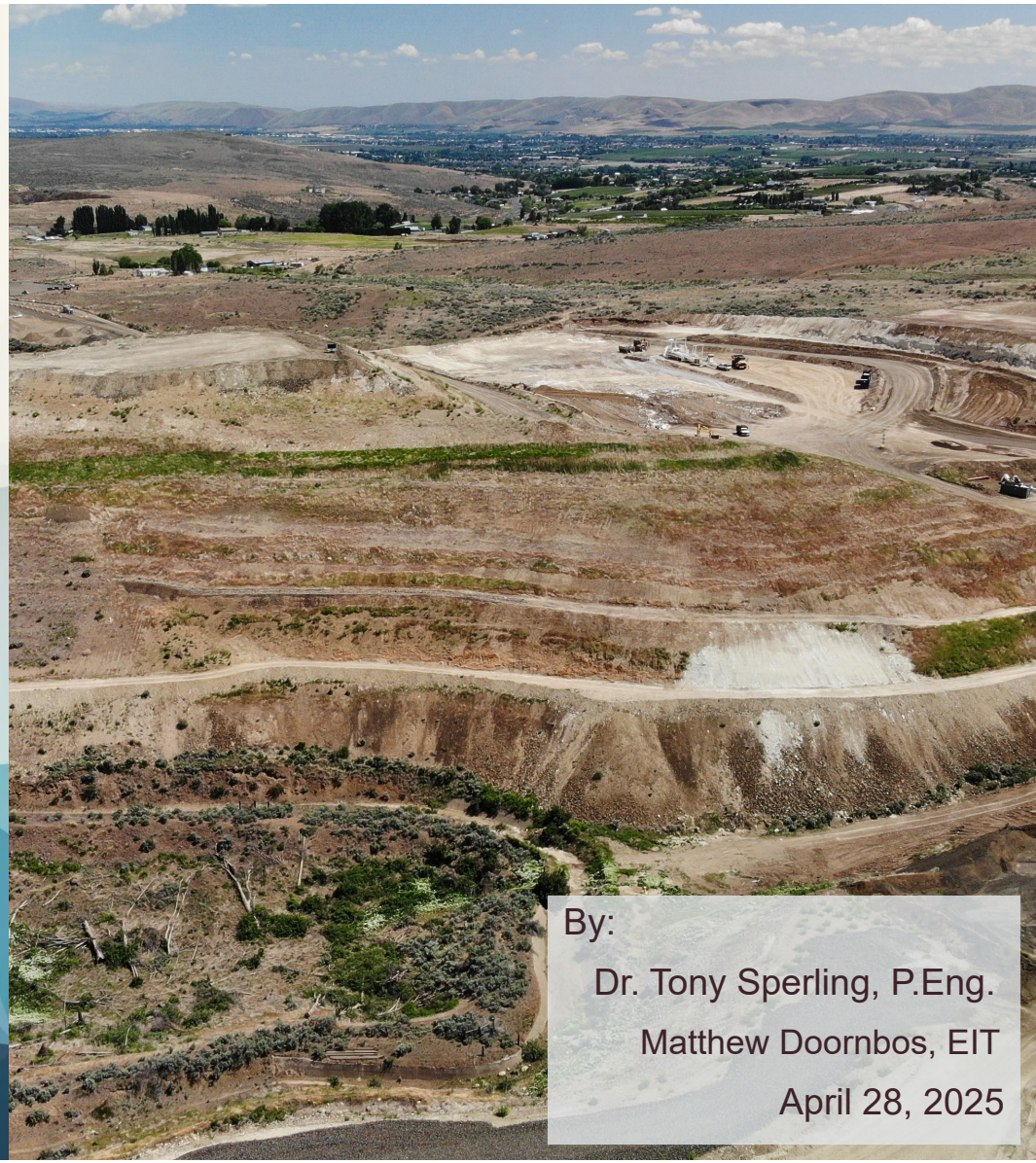
May 14th, 2025

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

April 2025



By:

Dr. Tony Sperling, P.Eng.

Matthew Doornbos, EIT

April 28, 2025

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LANDFILLFIRE.com
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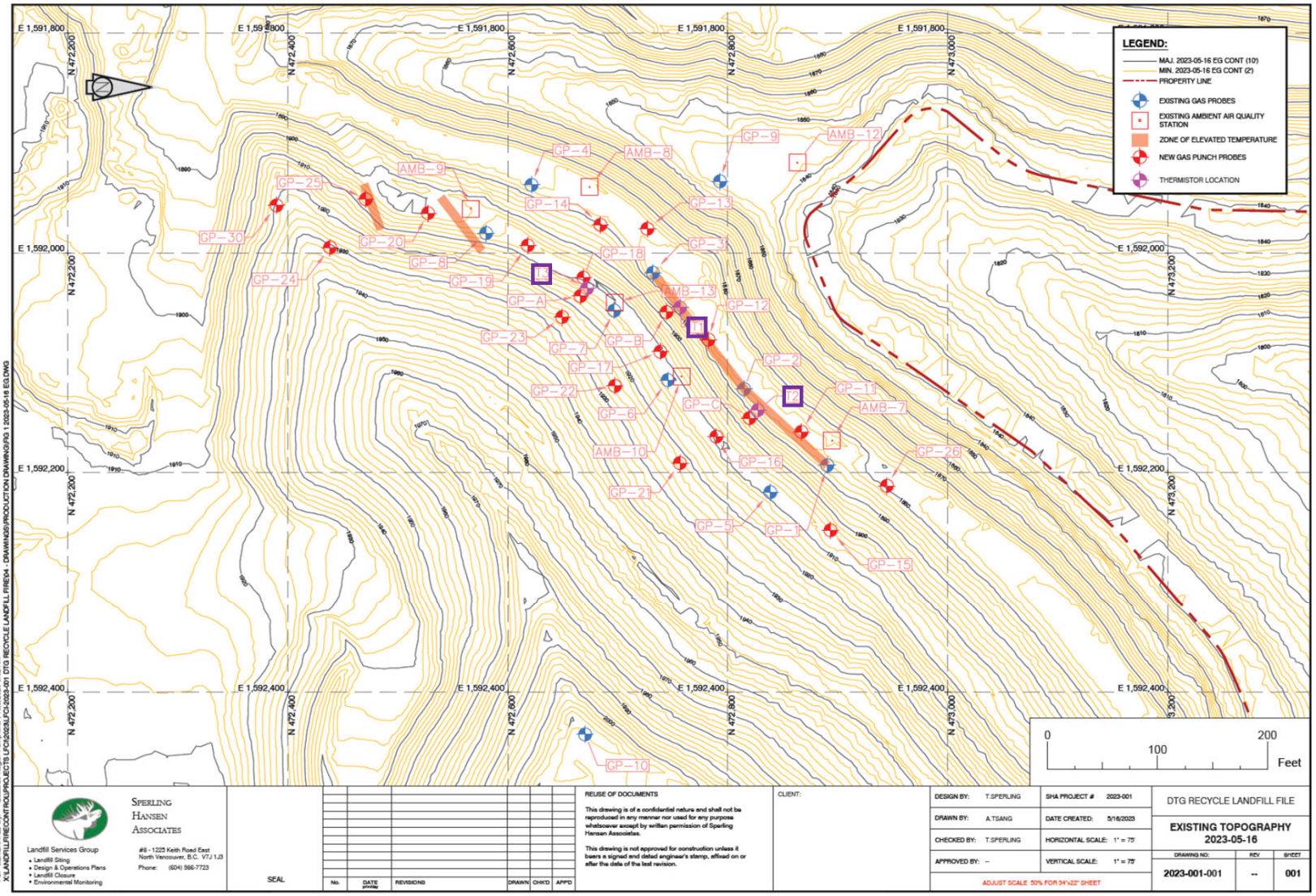

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- Landfill Siting
- Design & Operations Plans
- Landfill Closure
- Environmental Monitoring

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Phone: (604) 986-7723

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DESIGN BY:	T.SPERLING	SHA PROJECT #	2023-001
DRAWN BY:	A.TSANG	DATE CREATED:	5/16/2023
CHECKED BY:	T.SPERLING	HORIZONTAL SCALE:	1" = 75'
APPROVED BY:	--	VERTICAL SCALE:	1" = 75'

ADJUST SCALE 30% FOR 34"x22" SHEET

DTG RECYCLE LANDFILL FILE

EXISTING TOPOGRAPHY 2023-05-16

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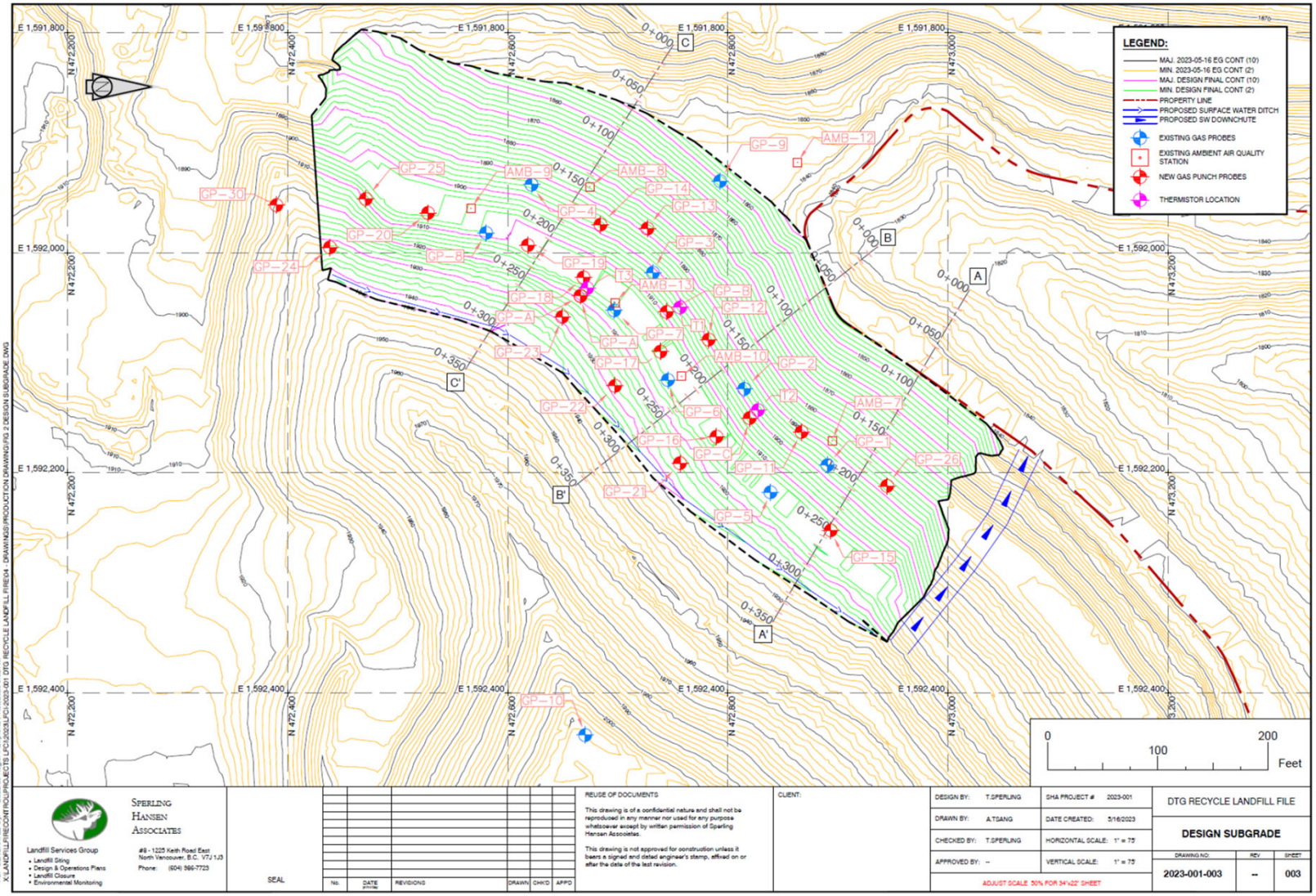
2023-001-001	--	001



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ADJUST SCALE 50% FOR 34"x22" SHEET

DTG RECYCLE LANDFILL FILE

DESIGN SUBGRADE

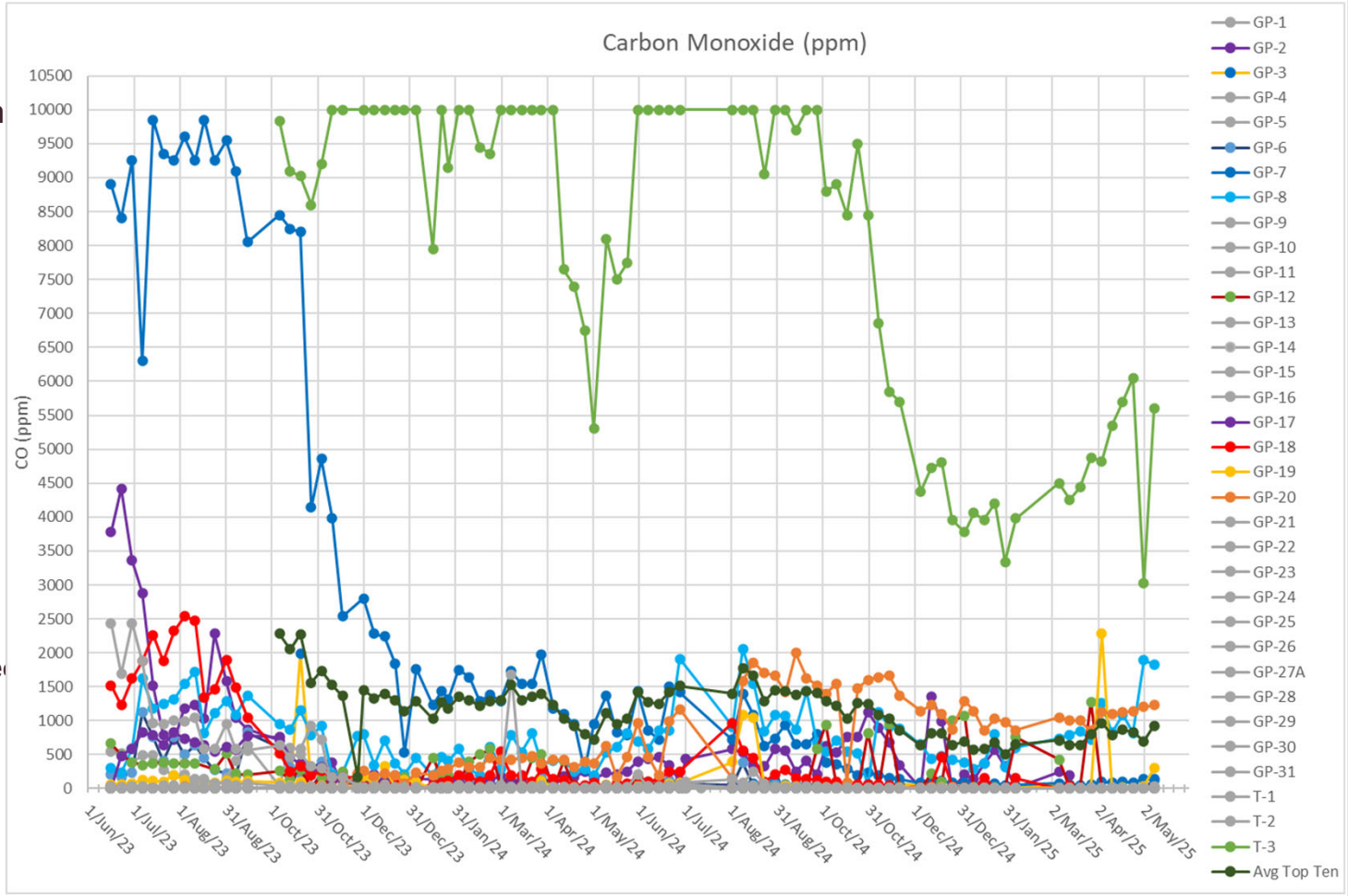
DRAWING NO:	REV	SHEET
2023-001-003	--	003

Carbon Monoxide

The month of April saw a continued, steady increase of CO concentration for most of the month, with T-3 increasing from around 4500ppm up to 6000ppm.

Part of rise is attributable to increased hydrogen and H2S readings which result in cross contamination of sensors.

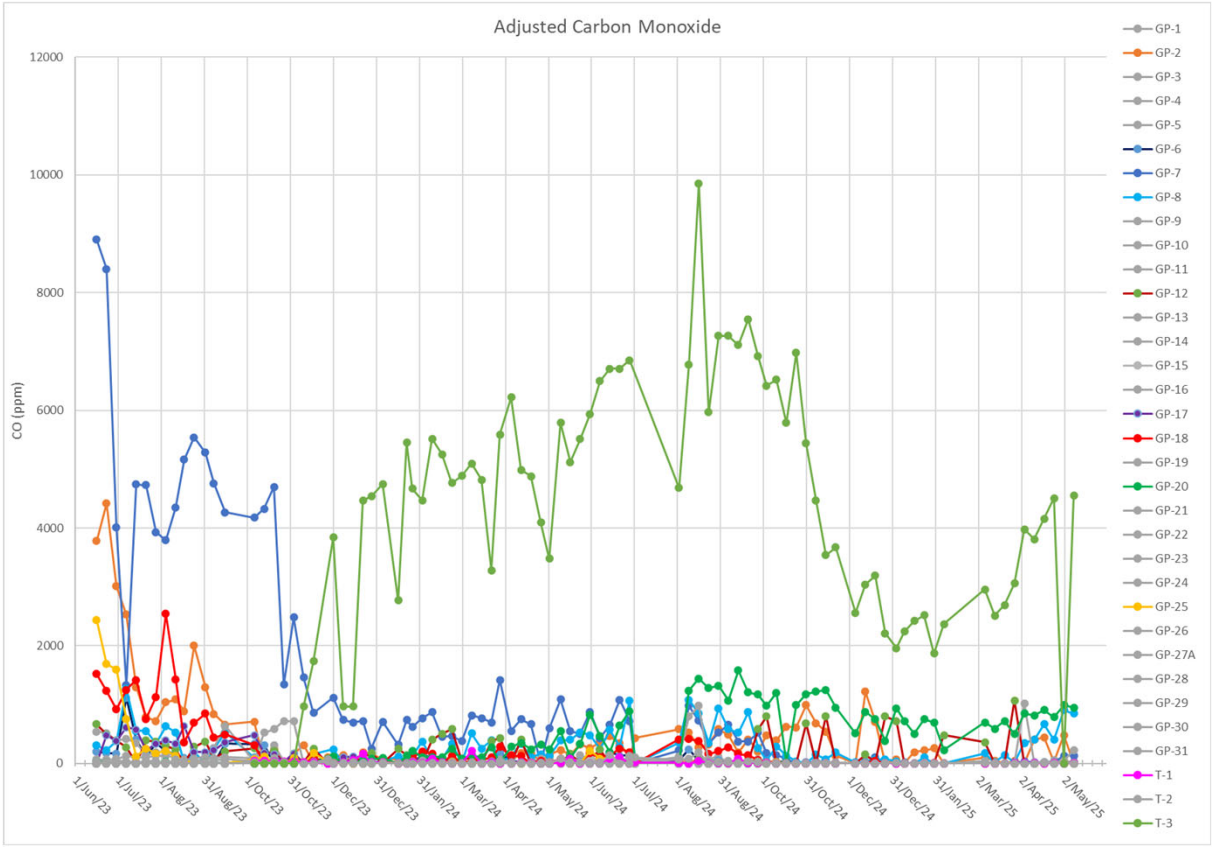
The average CO across the top 10 wells has been decreasing steadily since soil application commenced, with a slight increase since January, 2025, which correlates with increase pressure oscillations that push more atmospheric air into the landfill.



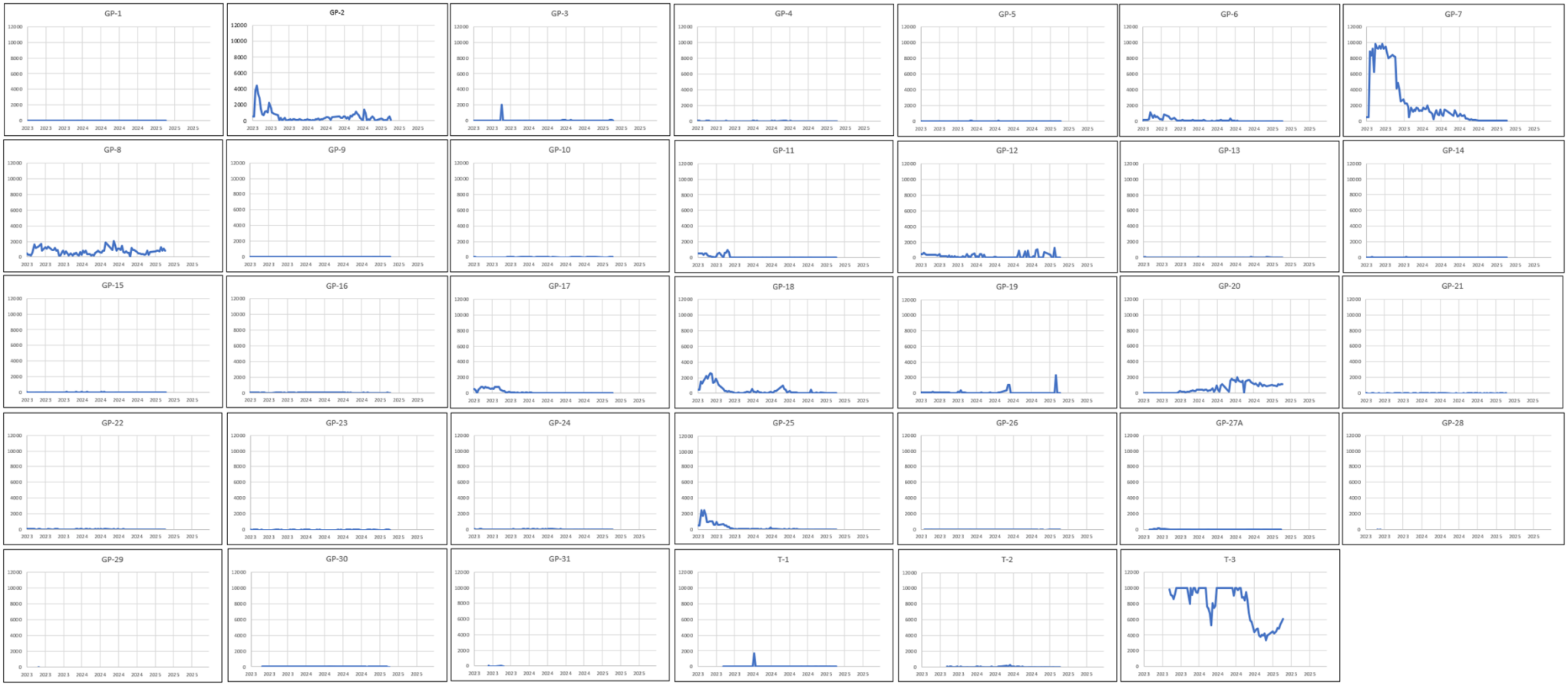
CO Adjusted for H2 Gas

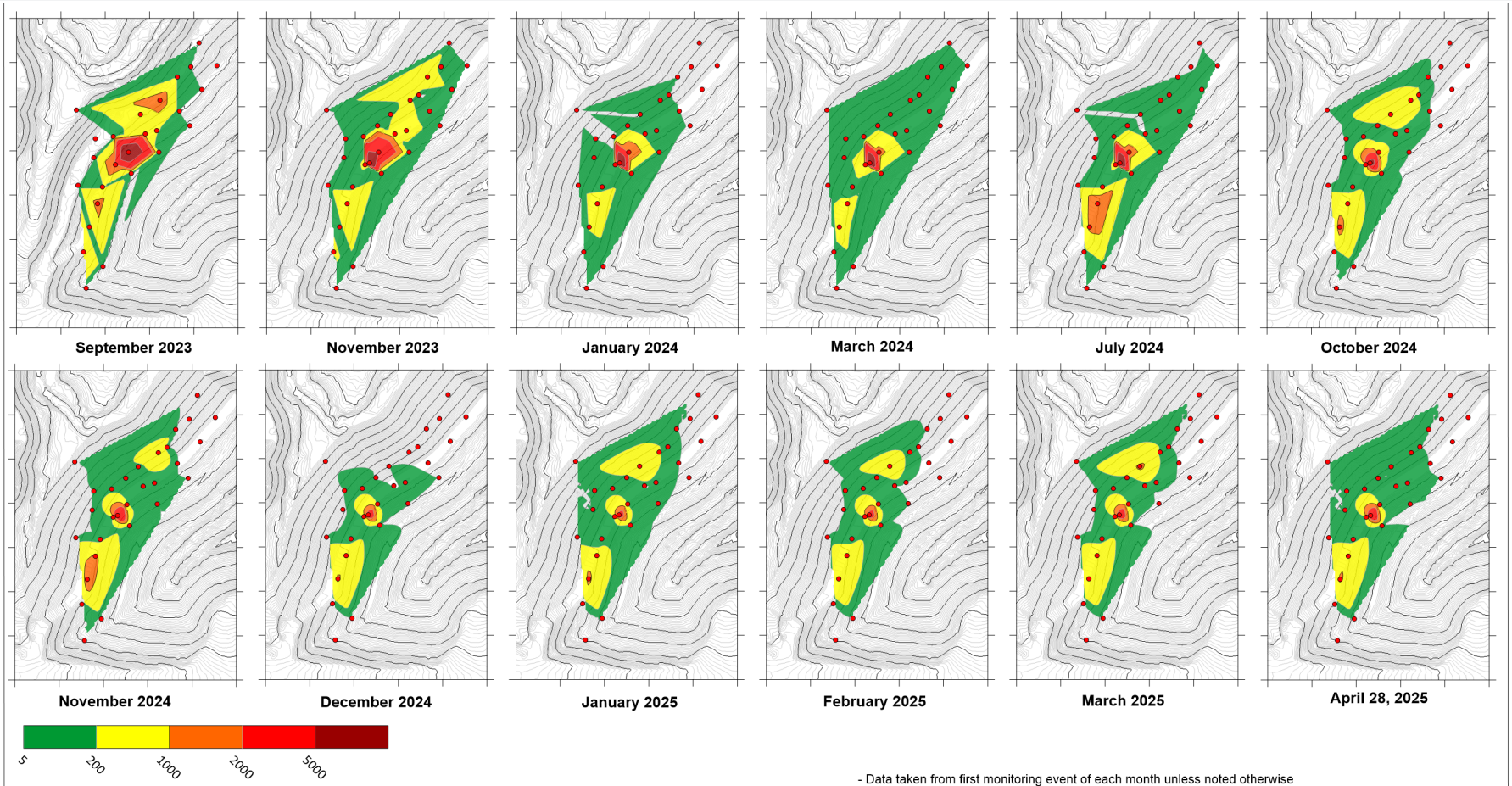
Adjusted CO measurements to find the ‘best case scenario’ are also showing increased levels of carbon monoxide.

Scrubbing any possible hydrogen interference shows an increase in adjusted CO from around 4000ppm at the beginning of April to 4500ppm at the end of the month.



CO Levels by Individual Wells





- 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

DESIGN BY:	T. SPERLING
DRAWN BY:	M. DOORNBOS
DATE CREATED:	2025/04/28
SHA PROJECT #	LFCI-2023-001

DTG RECYCLE LANDFILL FIRE

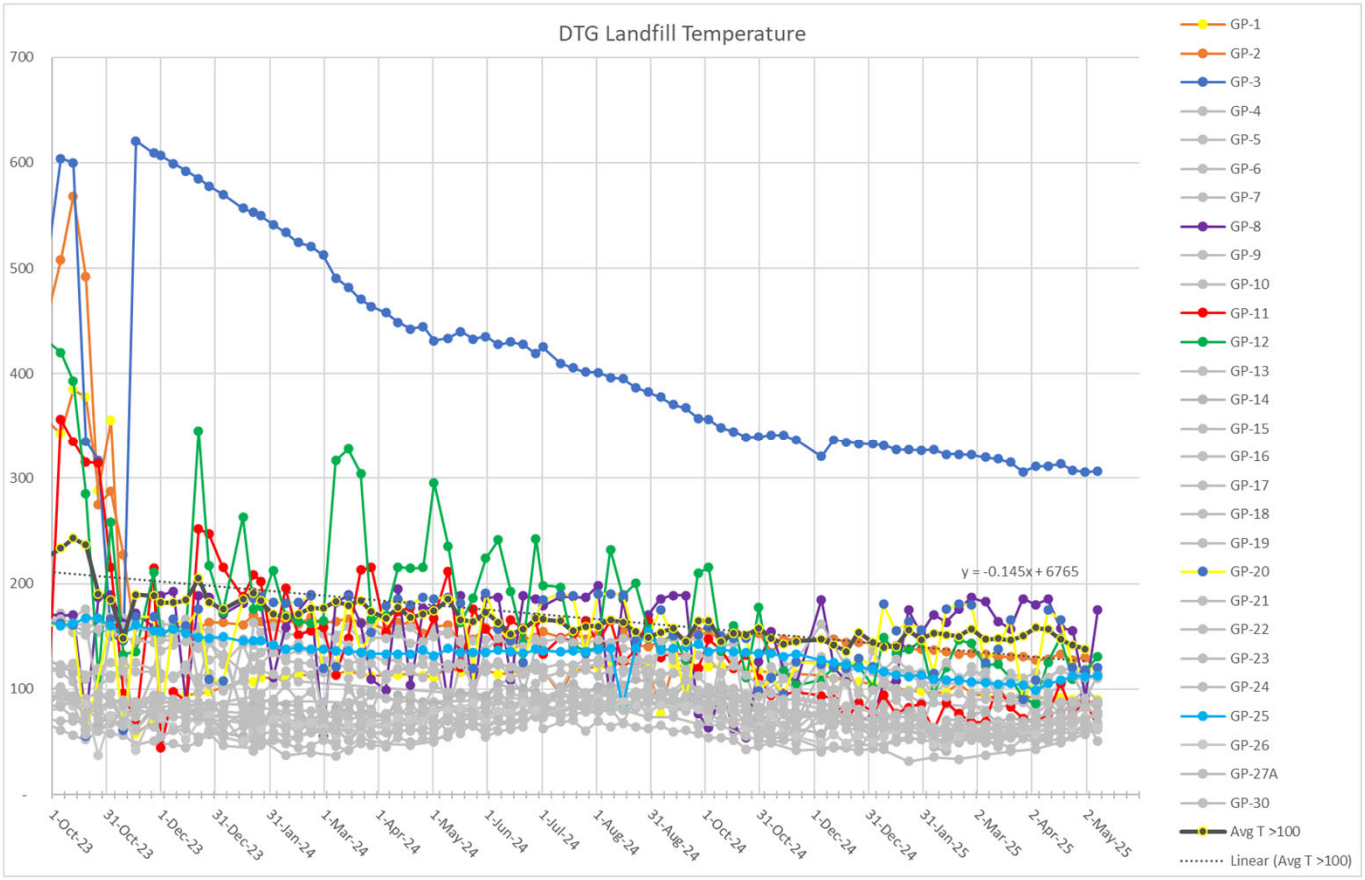
MONTHLY MONITORING SUMMARY SPATIAL MAPS - CO

DRAWING NO.	REV	SHEET
LFCI-2023-001-04-CO	1	1

Temperature (F)

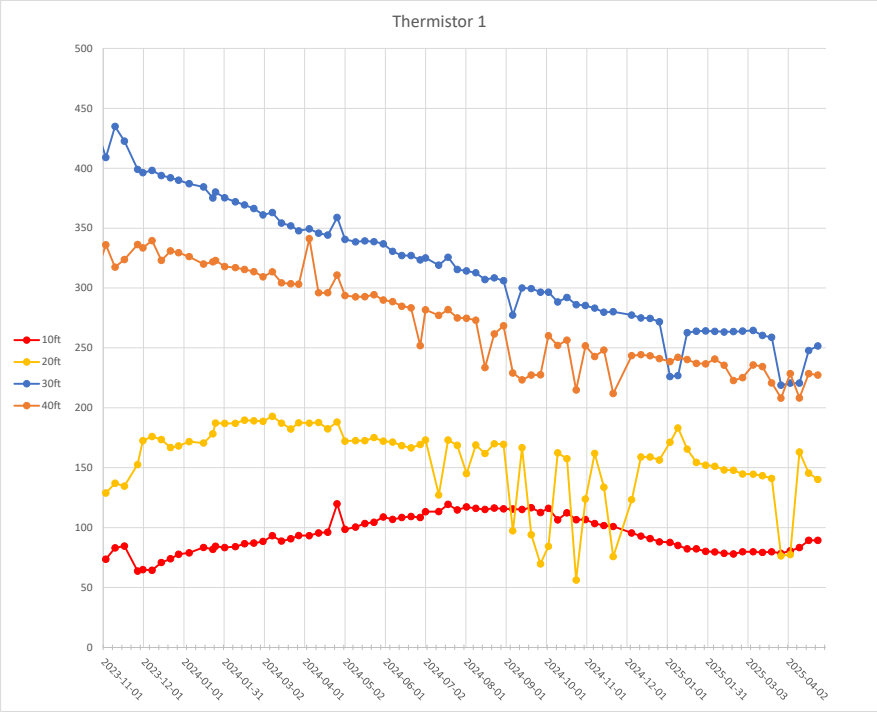
April saw temperatures decrease in GP-8, while the higher temperatures in GP-3 remained stable and elevated around 310F.

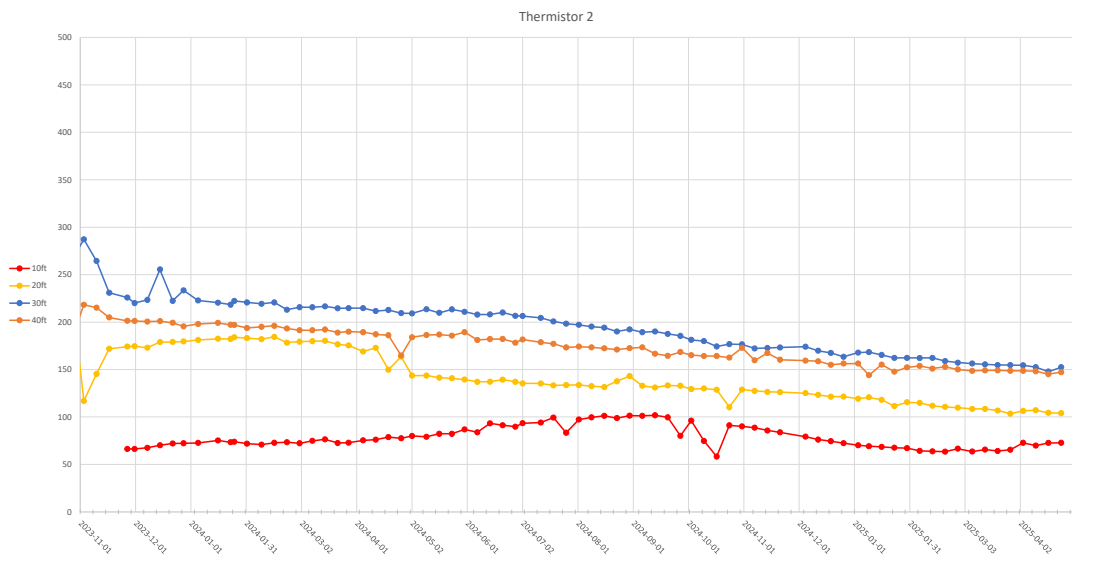
Temperatures continue to trend downward across all monitors, with the trend line for the wells above T>100F decreasing at a rate of 0.145 degrees F per day.

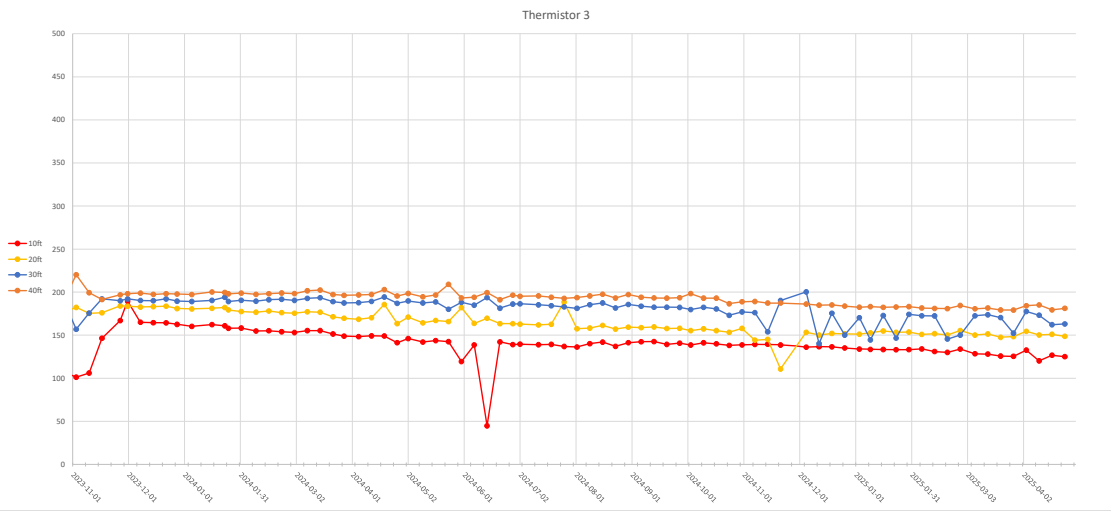


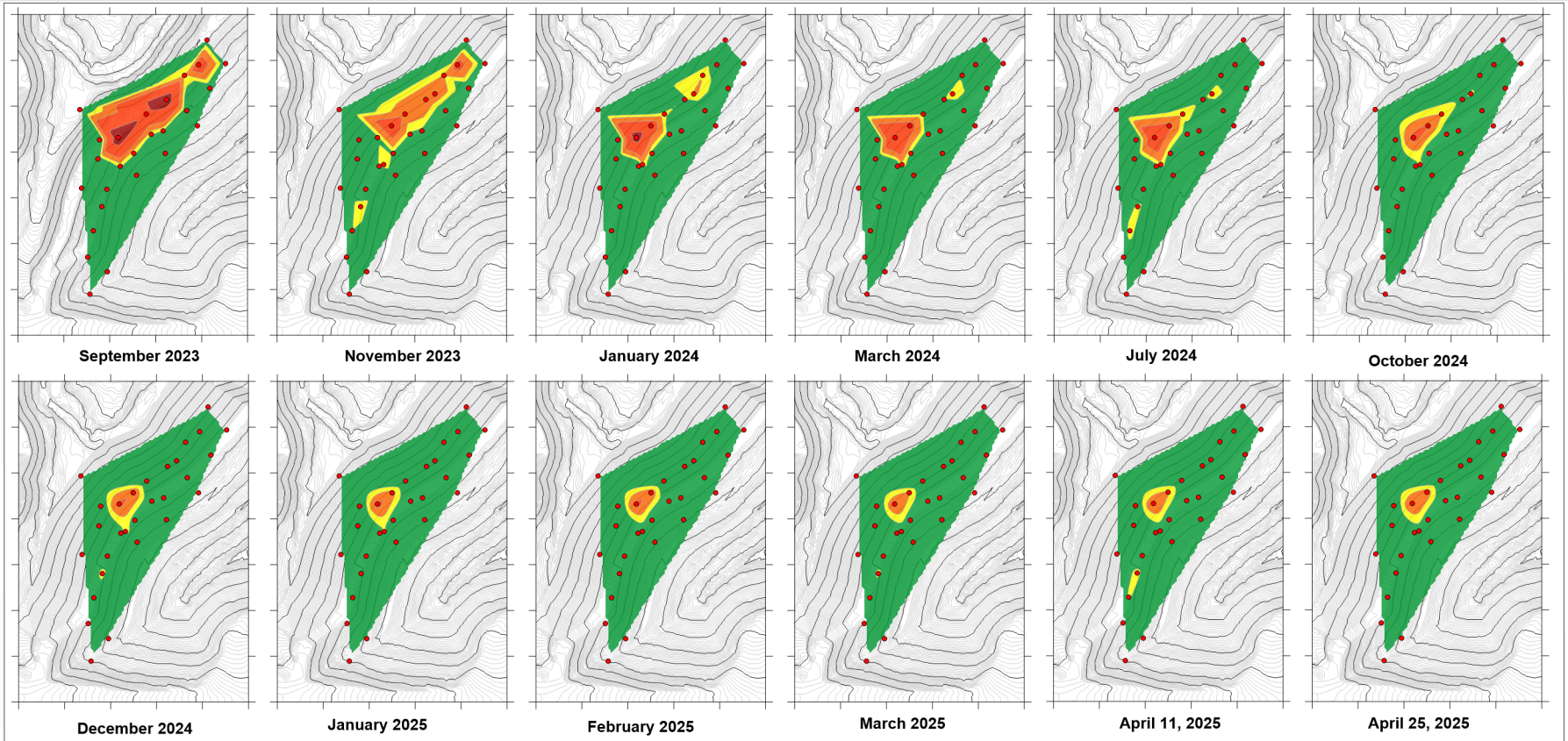
Thermistor Temperatures

Thermistor temperatures are mostly stable, with a slight downward trend in T-1, T-2 and T-3, however; the rate of cooling is decreasing. Consideration should be given to installing a dedicated thermistor on T-1, as the oscillations previously seen at depths of 20 feet indicate there may be issues with the measurements.









- Data taken from first monitoring event of each month unless noted otherwise
- Data has been interpolated between data points
- Datapoints (probe locations) represented in red
- Temperatures are measured in Degrees F
- 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

DESIGN BY:	T. SPERLING
DRAWN BY:	M. DOORNBOS
DATE CREATED:	2025/04/28
SHA PROJECT #	LFCI-2023-001

DTG RECYCLE LANDFILL FIRE

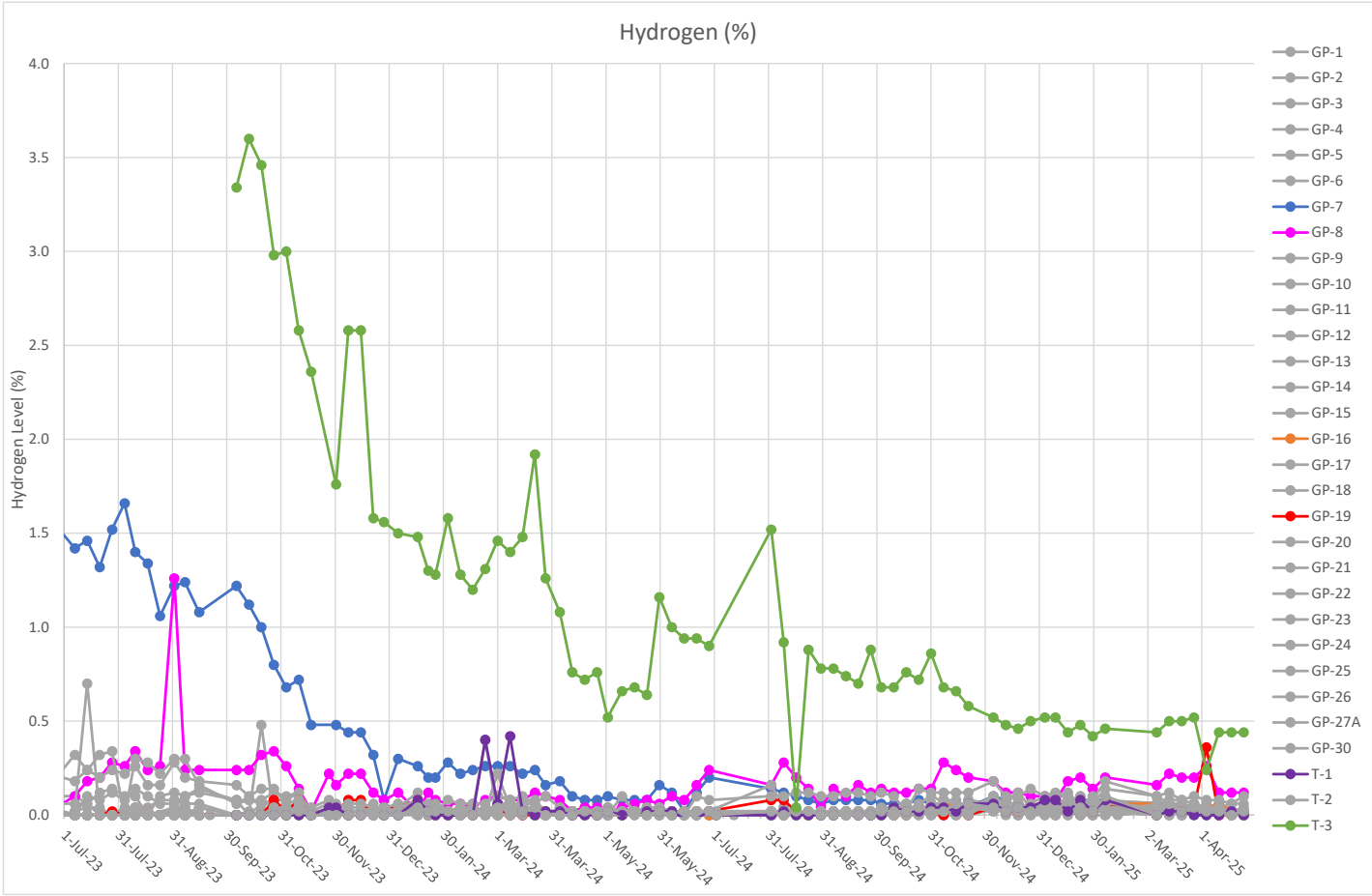
MONTHLY MONITORING SUMMARY SPATIAL MAPS - TEMPERATURE

DRAWING NO.	REV	SHEET
LFCI-2023-001-04-TEMP	1	1

Hydrogen

Hydrogen has stabilized in T-3 over the month of April around 0.4%

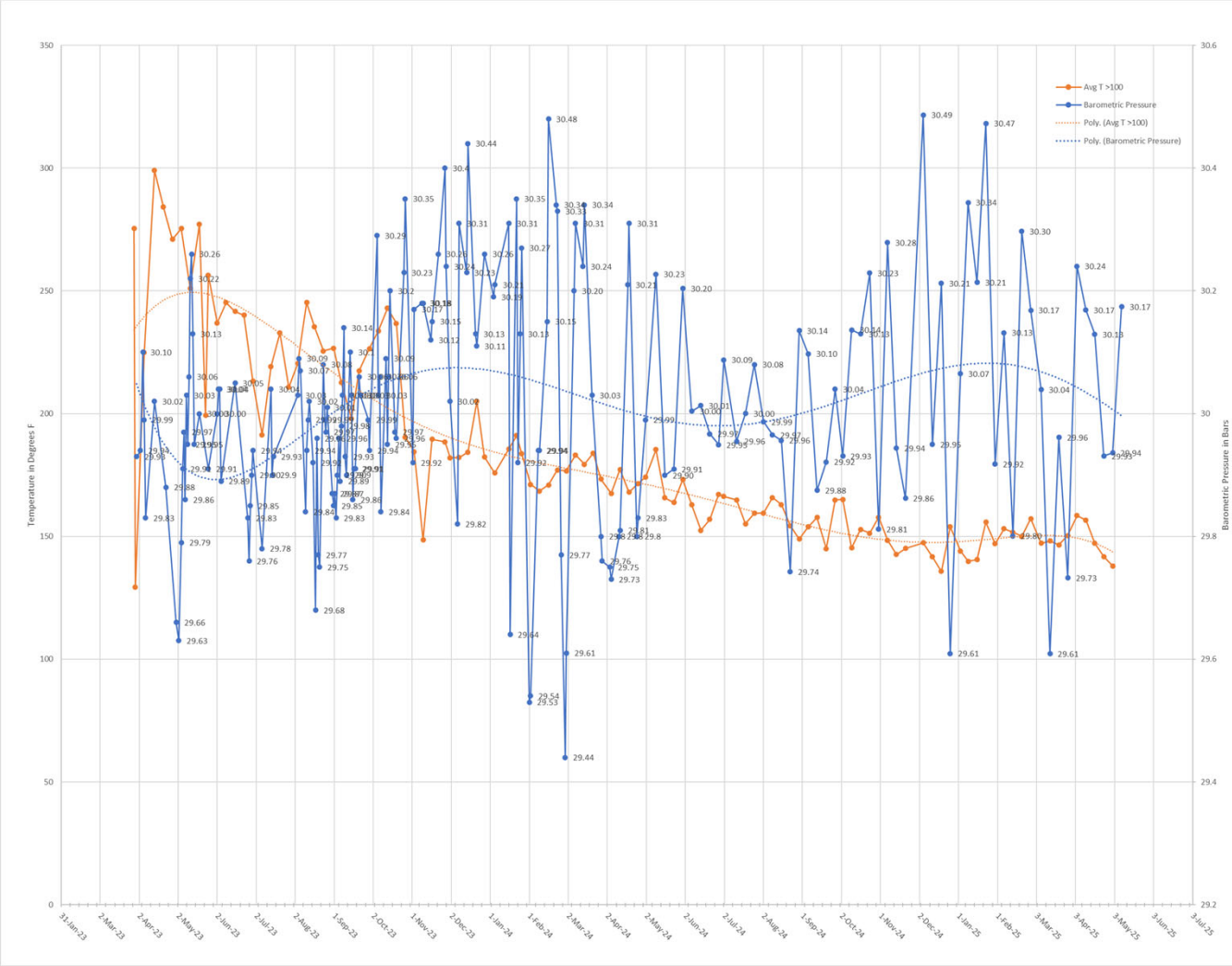
Hydrogen remains very low in all other wells. Production of H_2 is often observed with smoldering waste. LFCI believes that the level of H_2 dropping continues to indicate that the fire is less active.



Barometric Pressure

The site observed decreasing atmospheric pressure throughout the month of April, with no drastic changes.

Based on past pressure trends, we anticipate a low pressure environment from April through to September, which should result in less oxygen availability. This should translate to less oxygen available to feed the smoulder.

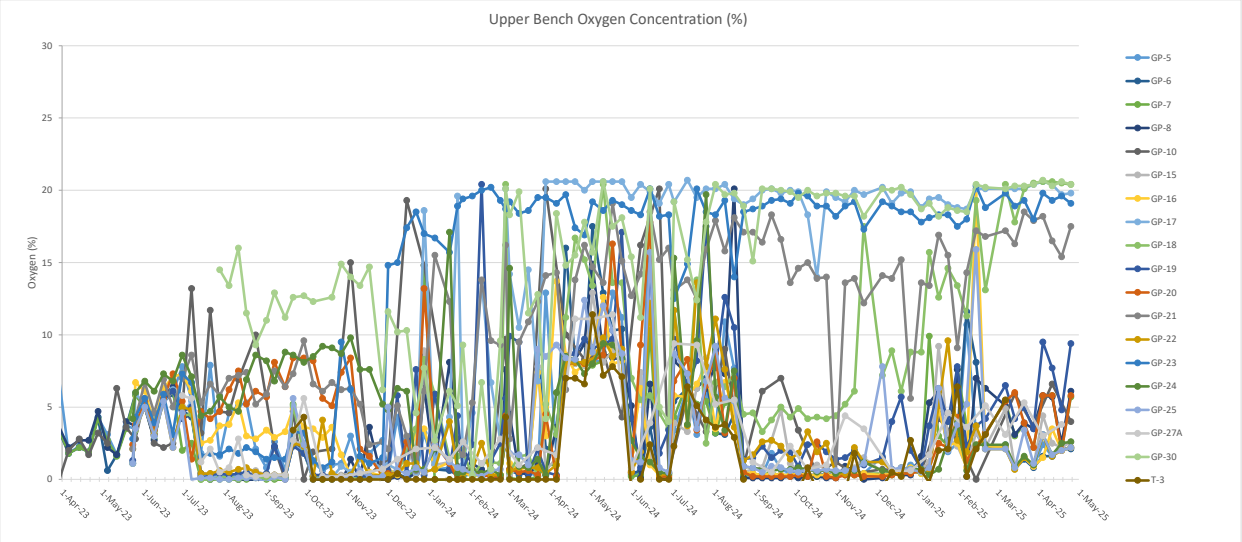


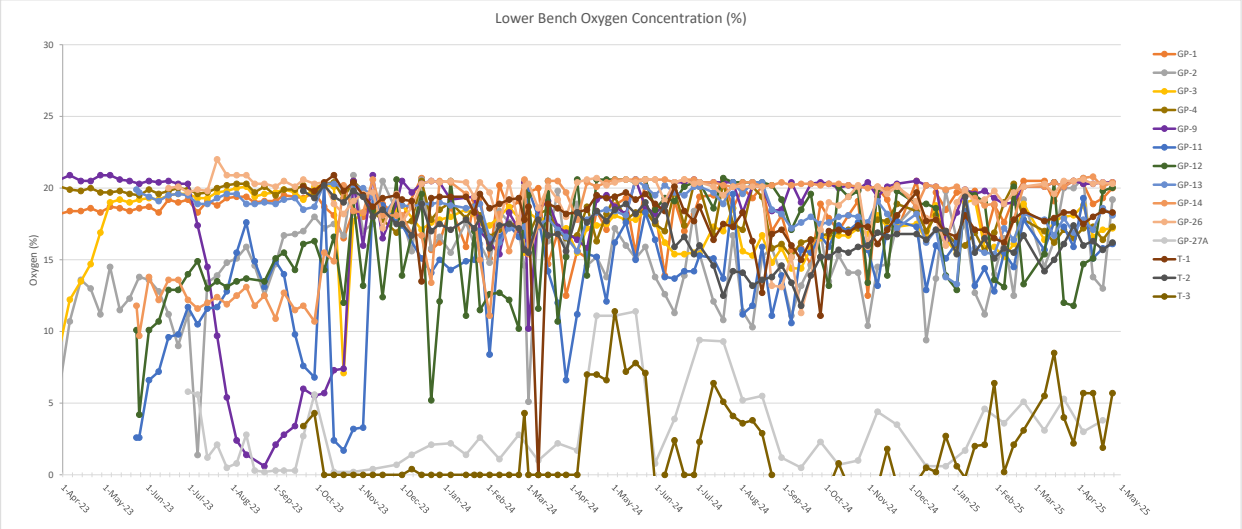
Oxygen

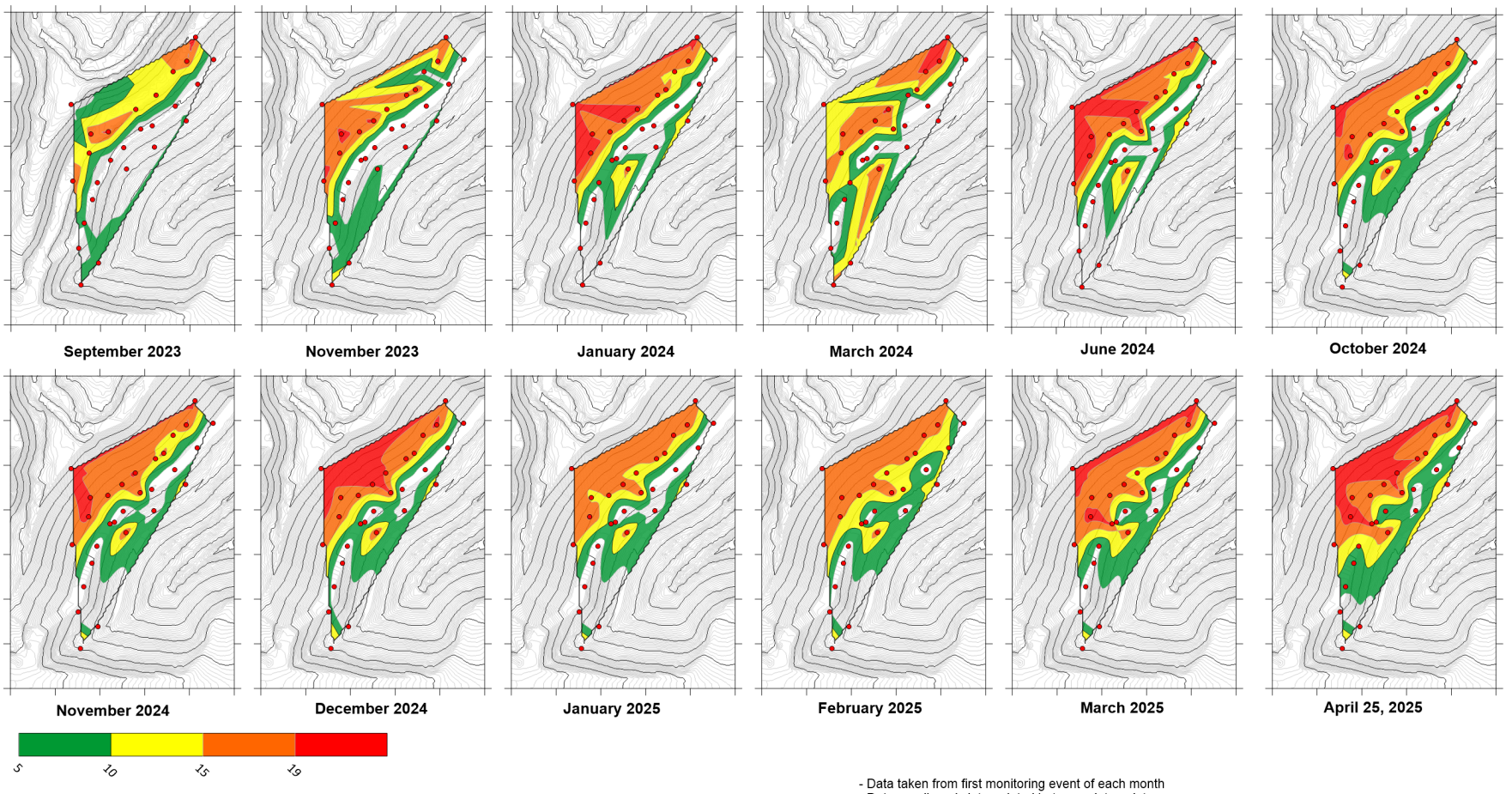
The oldest portion of the landfill is likely relatively inert and biologically inactive, producing very little methane. As a result, the pore space is full of atmospheric air, leading to the generally high oxygen concentrations.

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

Noted that higher levels of oxygen in GP-9 at landfill toe (>20%) are causing the spatial maps to be somewhat skewed, indicating air intrusion throughout the toe of the landfill. This is likely not a true portrayal of O2 levels within the fill; however, there has been an increase in concentrations throughout the monitored area over the past few months, most likely due to the very high atmospheric pressure and significant pressure swings







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- 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

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DATE CREATED:	2025/04/28
SHA PROJECT #	LFCI-2023-001

DTG RECYCLE LANDFILL FIRE

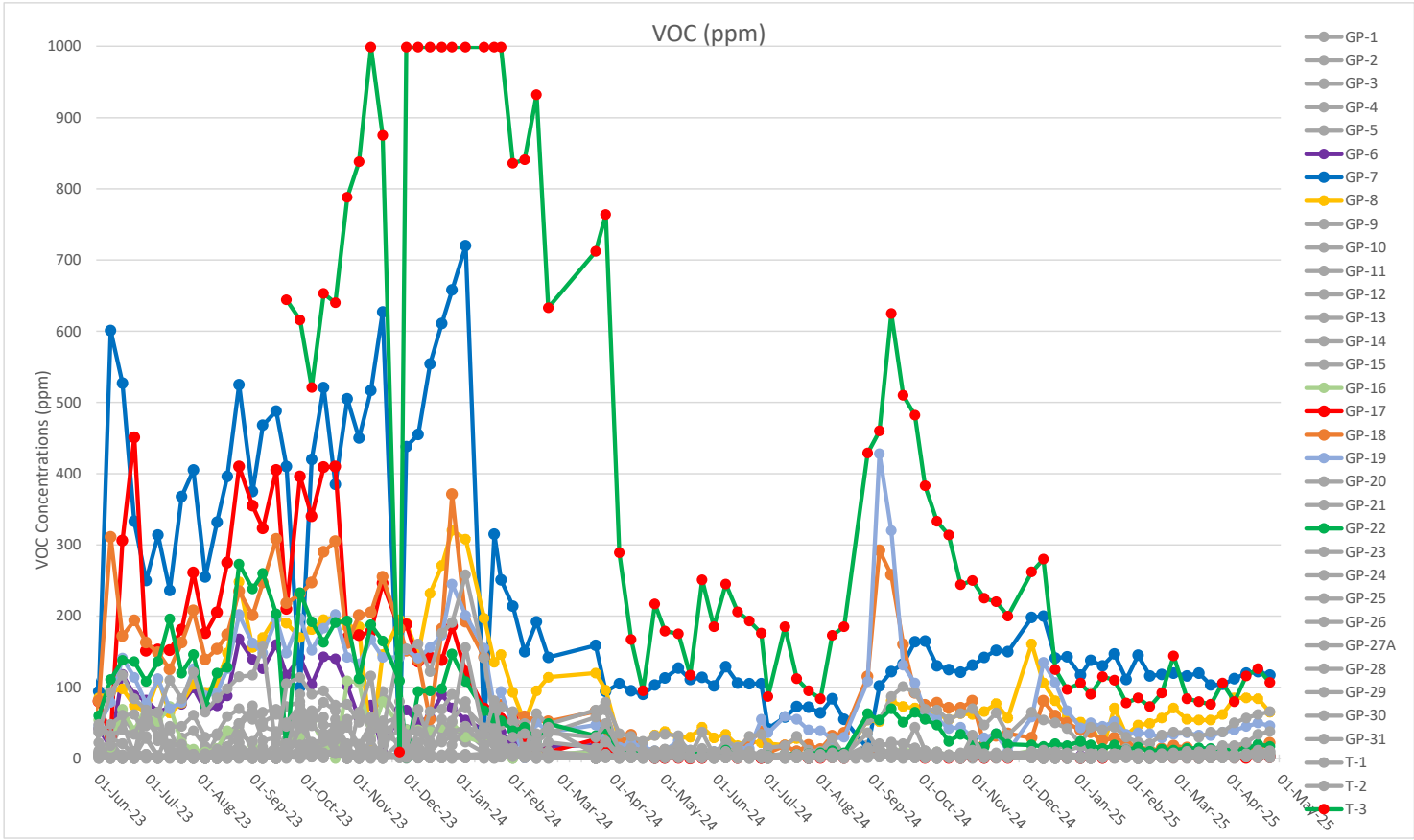
MONTHLY MONITORING SUMMARY SPATIAL MAPS - O2

DRAWING NO.	REV	SHEET
LFCI-2023-001-04-O2	1	1

Volatile Organic Compounds

Through April, VOC levels continued to be stable with the highest concentrations in GP-7 and T-3 around 100ppm.

VOC emissions are often related to subsurface landfill fires. The fact that VOC emissions have declined is a strong indication that the rate of combustion is rapidly decreasing.

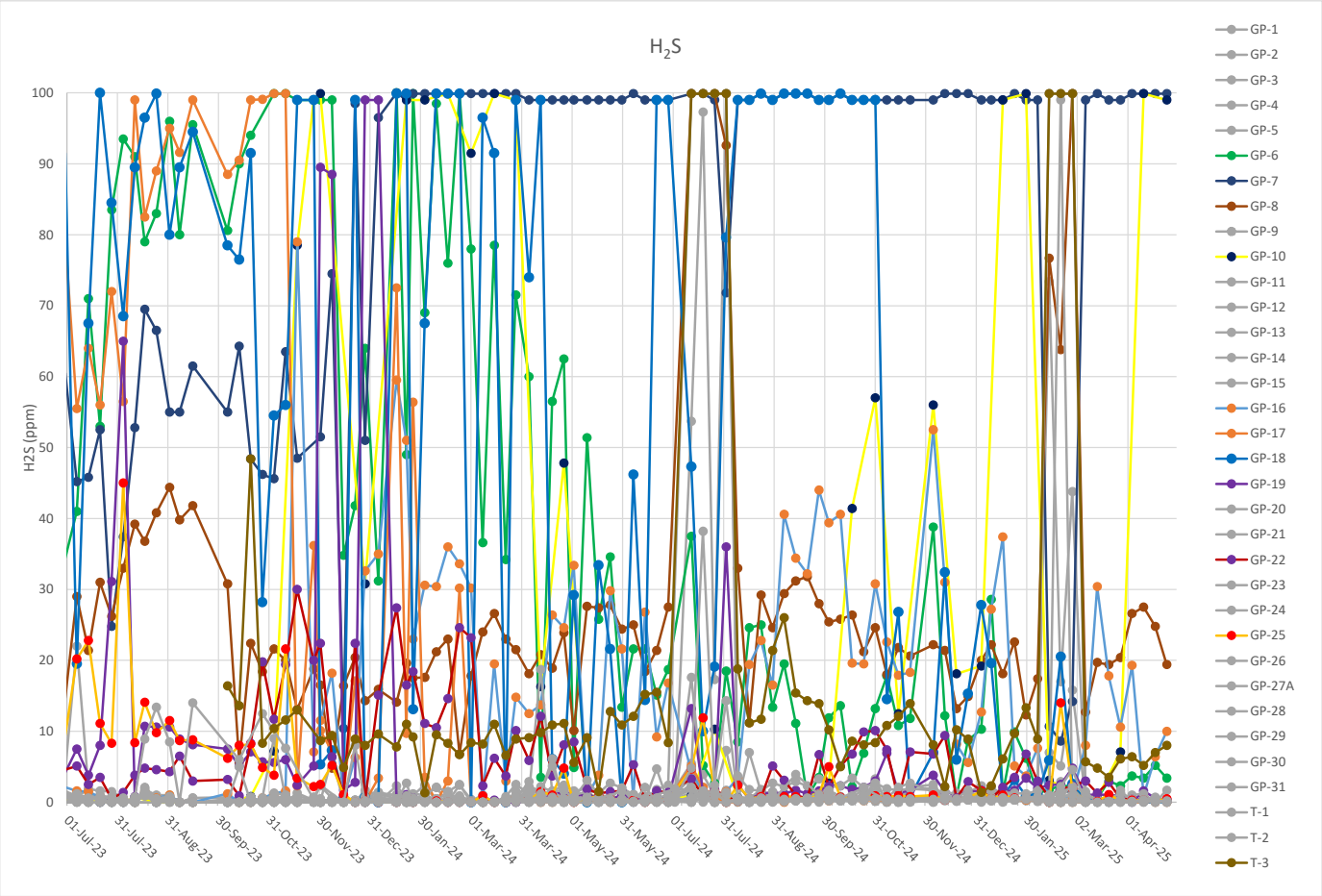


Hydrogen Sulfide

H_2S data continues to be noisy, likely affected by atmospheric pressure fluctuation.

Most locations are low, but GP-7 remains high as it has historically.

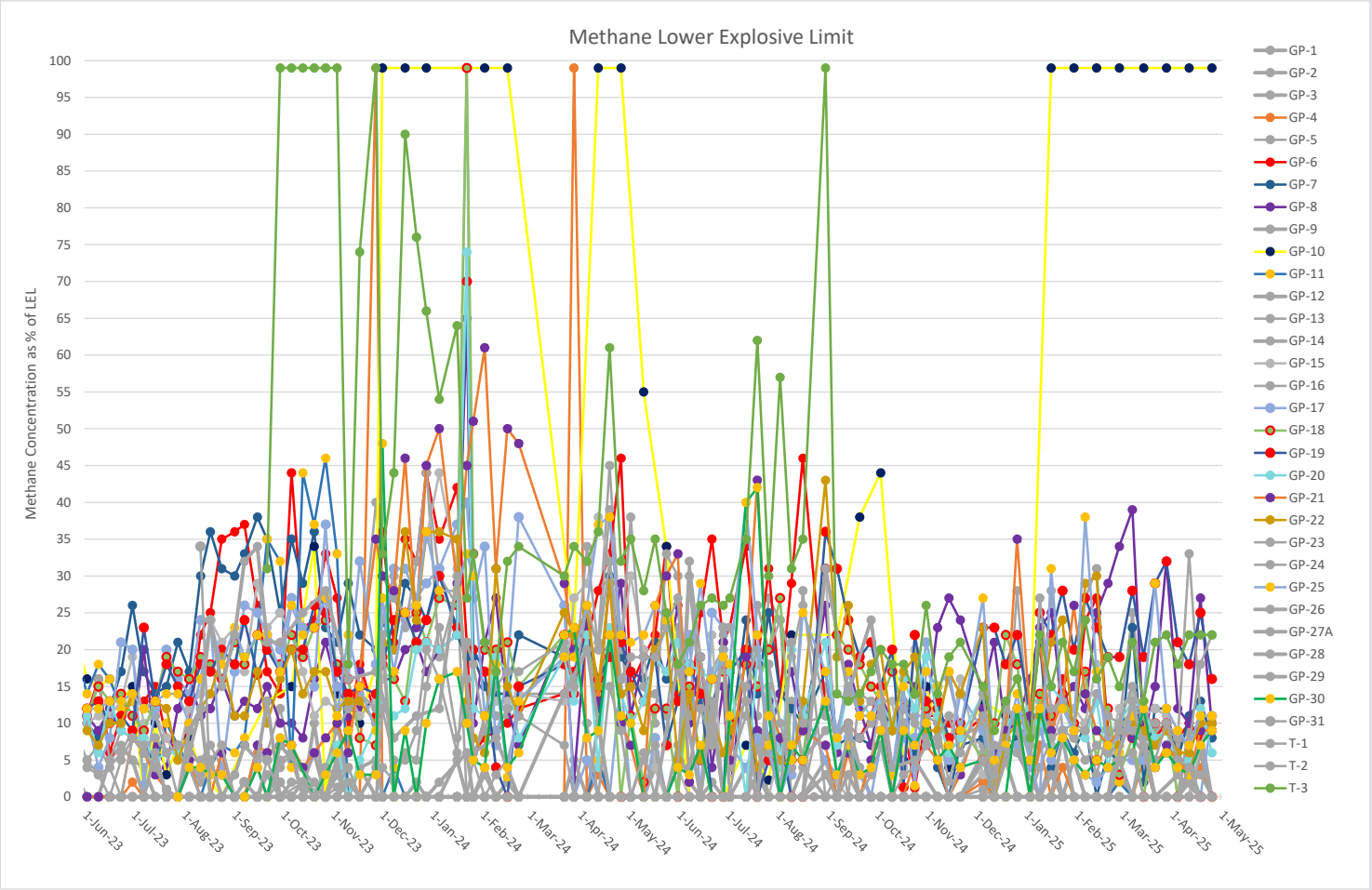
As mentioned previously, it is possible that the H_2S sensor is being impacted by CO cross interference. With CO concentration decreasing, reported H2S concentration is dropping as well.



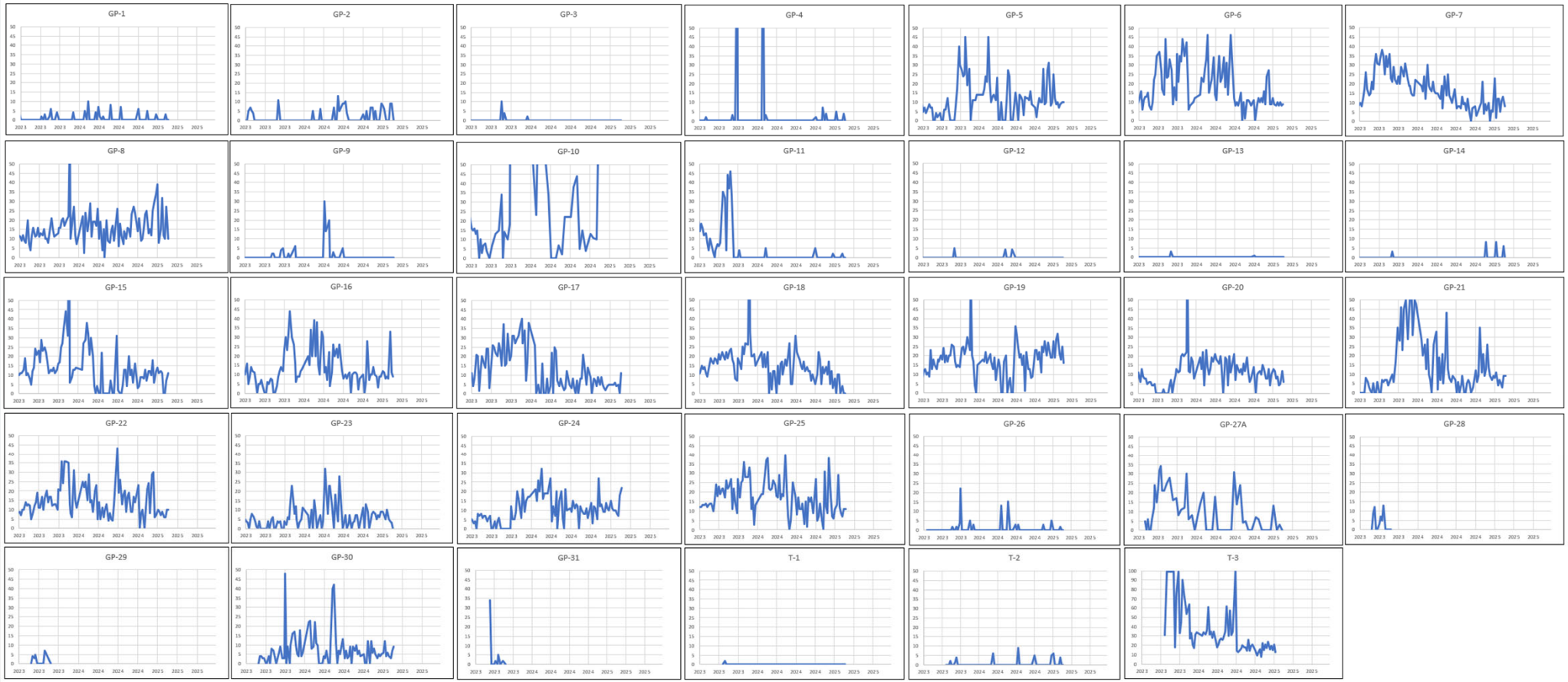
Lower Explosive Limit

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

Overall stability of LEL within the past month, somewhat higher than previous measurements but remaining low other than GP-10.



LEL for individual GP

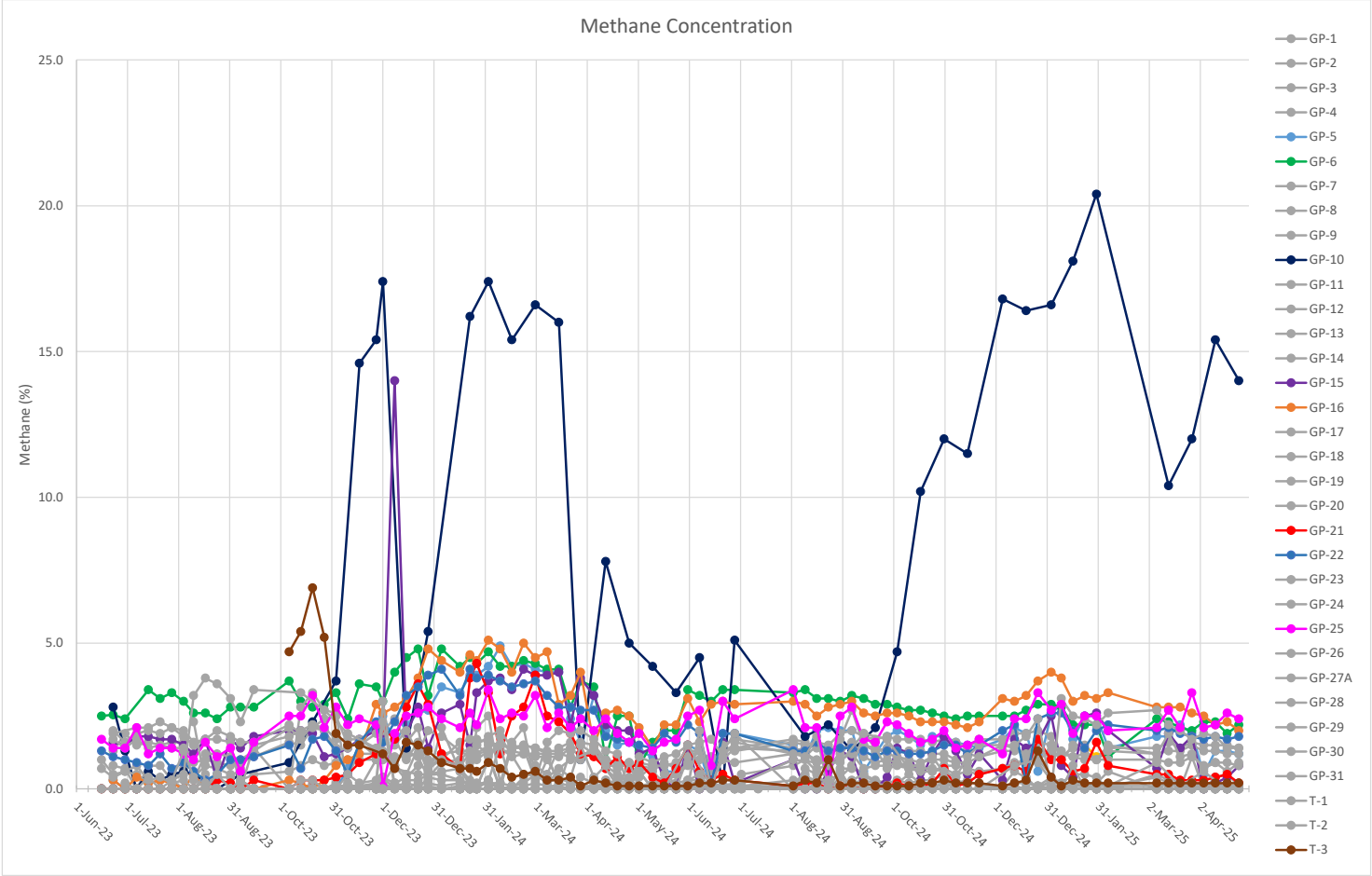


Methane

Methane levels for most wells are converging between 0 and 4% indicating that landfill is not biologically active.

Only well GP-10 is indicating higher methane - high concentrations are typically observed at this well as it is affected by more recently placed waste that is still in process of decomposition.

Bi-weekly measurements in April of GP-10 showed a general range of around 15% concentration.




LANDFILLFIRE.com
GP-10
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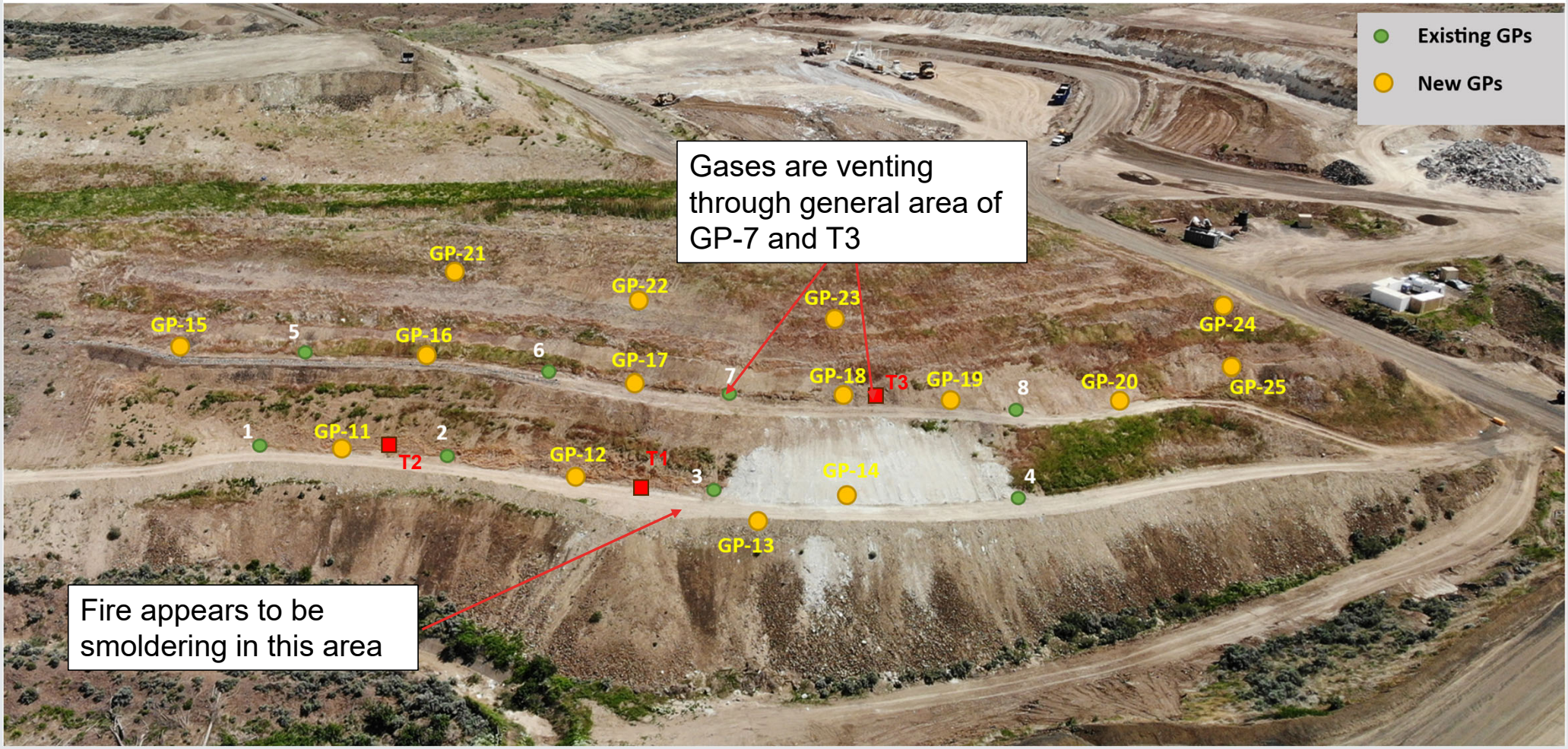
Fire Path


Existing GPs
New GPs
Gases are venting through general area of GP-7 and T3
Fire appears to be smoldering in this area
GP-21
GP-22
GP-23
GP-15
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GP-16
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GP-17
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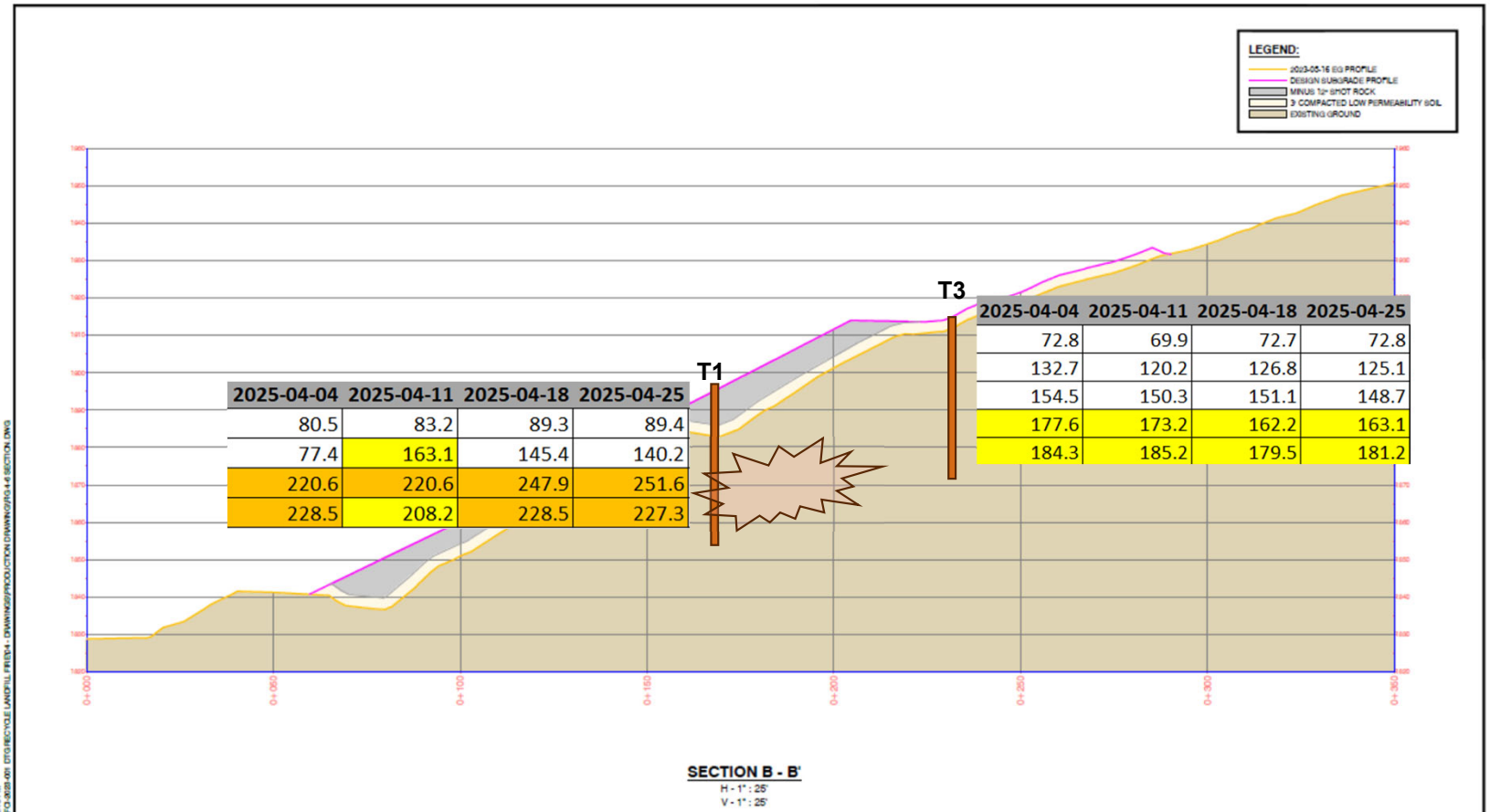
GP-13



2025-04-04	2025-04-11	2025-04-18	2025-04-25
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77.4	163.1	145.4	140.2
220.6	220.6	247.9	251.6
228.5	208.2	228.5	227.3

2025-04-04	2025-04-11	2025-04-18	2025-04-25
72.8	69.9	72.7	72.8
132.7	120.2	126.8	125.1
154.5	150.3	151.1	148.7
177.6	173.2	162.2	163.1
184.3	185.2	179.5	181.2

SECTION B - B'

H - 1" : 25'

V - 1" : 25'

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Phone: (604) 986-7720

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ADJUST SCALE 50% FOR 24"x32" SHEET

DTG RECYCLE LANDFILL FILE

SECTION B-B'

DRAWING NO.	REV	SHEET
2023-001-005	–	005

Data Interpretation

LFCI believes that suppression efforts continue to work, but slowly. CO levels and temperatures have decreased dramatically since cover fill was placed. Temperatures initially decreased, but have levelled off since Dec. 2024 as have gas concentrations. Seasonal warming may be contributing to slowing the cooling trend.

Temperature has dropped significantly all around to Dec. 2024 when the trend has shifted to a steady condition, with minimal changes occurring. In March, temperatures in all high wells have decreased, with a significant decrease on the last monitoring event. The plan view mapping shows cooling trend across the entire area. The rate of cooling is decreasing. The average rate now is 0.145 degrees F decrease per day.

In LFCI experience, CO has been best indicator of suppression at other landfill sites. CO in T-3 has risen slightly since it's dramatic decrease in November-December of 2024. In the last two months CO levels in T-3 have continued to ramp up, indicating that the subsurface hot spot at that location is warming up.

High O2 continues to fluctuate - this is likely due to large atmospheric pressure swings and pervious waste mass allowing entry of ambient air. Large pressure swings this winter have introduced additional oxygen into the waste mass.

LFCI believes that the waste continues to smolder underneath GP-3 and T-1 (elevated temperature) but the rate of smolder is steadily decreasing. Also, a 'chimney' effect is occurring, causing higher levels of indicator gases at T-3 and GP-12.