March 11, 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 – February

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 February 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 February 27, 2025. The monitoring data summary through February 2025 from Landfill Fire Control, Inc. (LFCI) is attached.

Q1a groundwater sampling was performed the week of February 10. This sampling is part of establishing background characteristics of the new monitoring wells.

Initial coordination for a drone thermal imaging by Ecology of Phase 1.

Response to comments on the DTG developed the RI Work Plan.

DTG continued to develop the 2024 annual groundwater monitoring report and the Q4 MTCA groundwater memorandum.

DTG continued to develop the driller bid package for new thermistors and groundwater wells.

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
- March Progress Report
- 2024 annual groundwater report
- RI Work Plan bid documents
- Hydrogeologic Investigation Report
- Q4 MTCA groundwater memorandum
- Final RI Work Plan

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 – February 2025

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

March 11th, 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 – February 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 January, the month of February has exhibited a levelling off of trends in temperature and gas composition. The past month has seen the rate of cooling level off and a slight increase was noted in some wells. Temperatures continued to decline slowly in GP-3, the hottest well, and have levelled off in T-1 between 250 and 300F with a slight upward trend in the last few weeks.

The past several months have experienced major atmospheric pressure swings which have caused oxygen rich atmospheric air to cycle into the landfill. The availability of increased O2 has initiated a slight increase in thermal activity.

The collected data has indicated that the subsurface smolder is becoming less and less active since the soil cover was applied. While CO and H2 were not measured this month as the Draeger instrument was in for recalibration, the other monitoring parameters have been declining except for a slight increase at the end of February. This increase will be monitored closely by LFCI in the next few weeks, as continued upward trends would be a concern.

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.

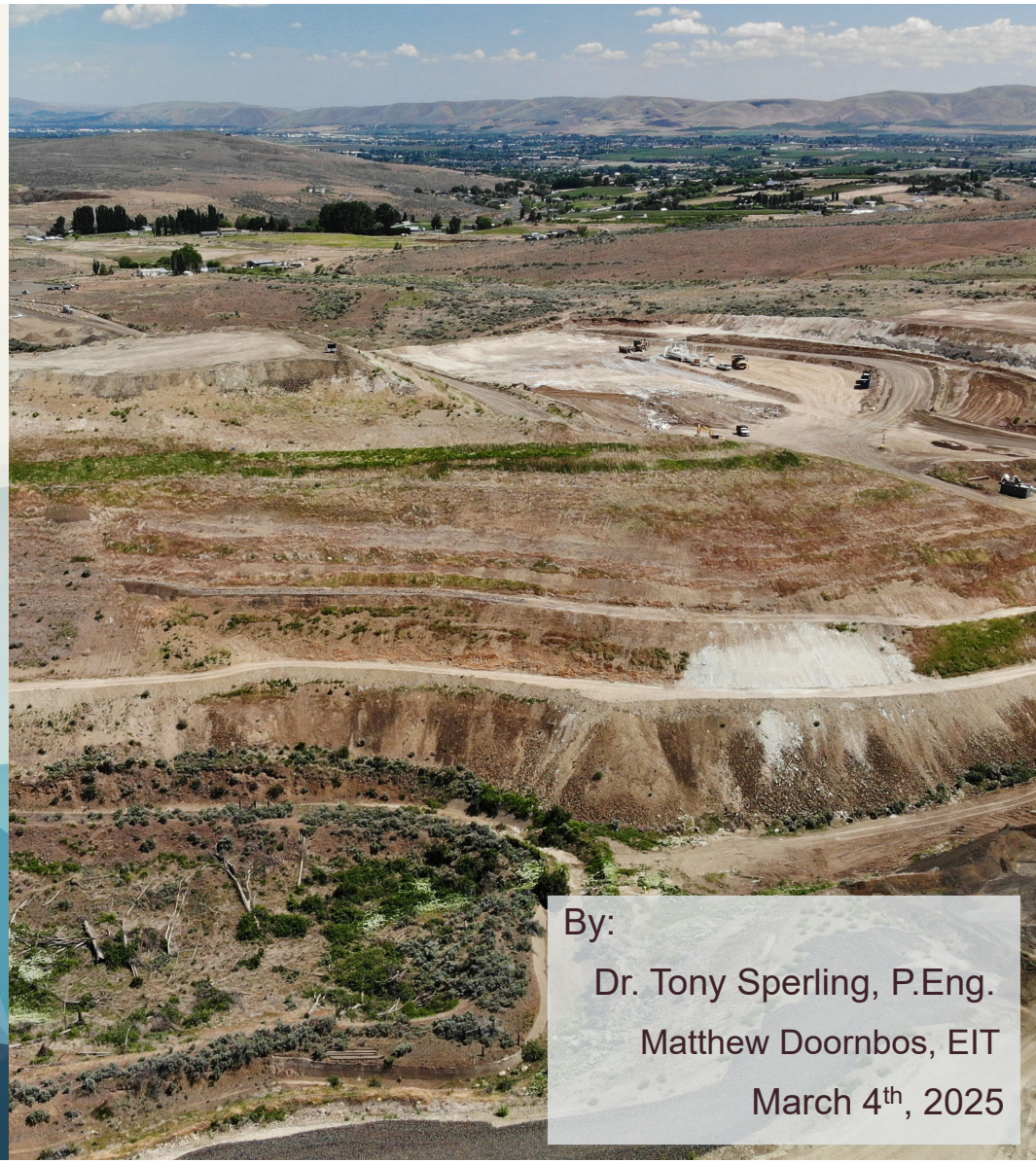
Dr. Tony Sperling, P.Eng.
President

March 11th, 2025

DTG LPL LANDFILL FIRE INVESTIGATIONS AND MITIGATION

Monthly Monitoring Data Review

February 2024



By:

Dr. Tony Sperling, P.Eng.

Matthew Doornbos, EIT

March 4th, 2025

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LANDFILLFIRE.com
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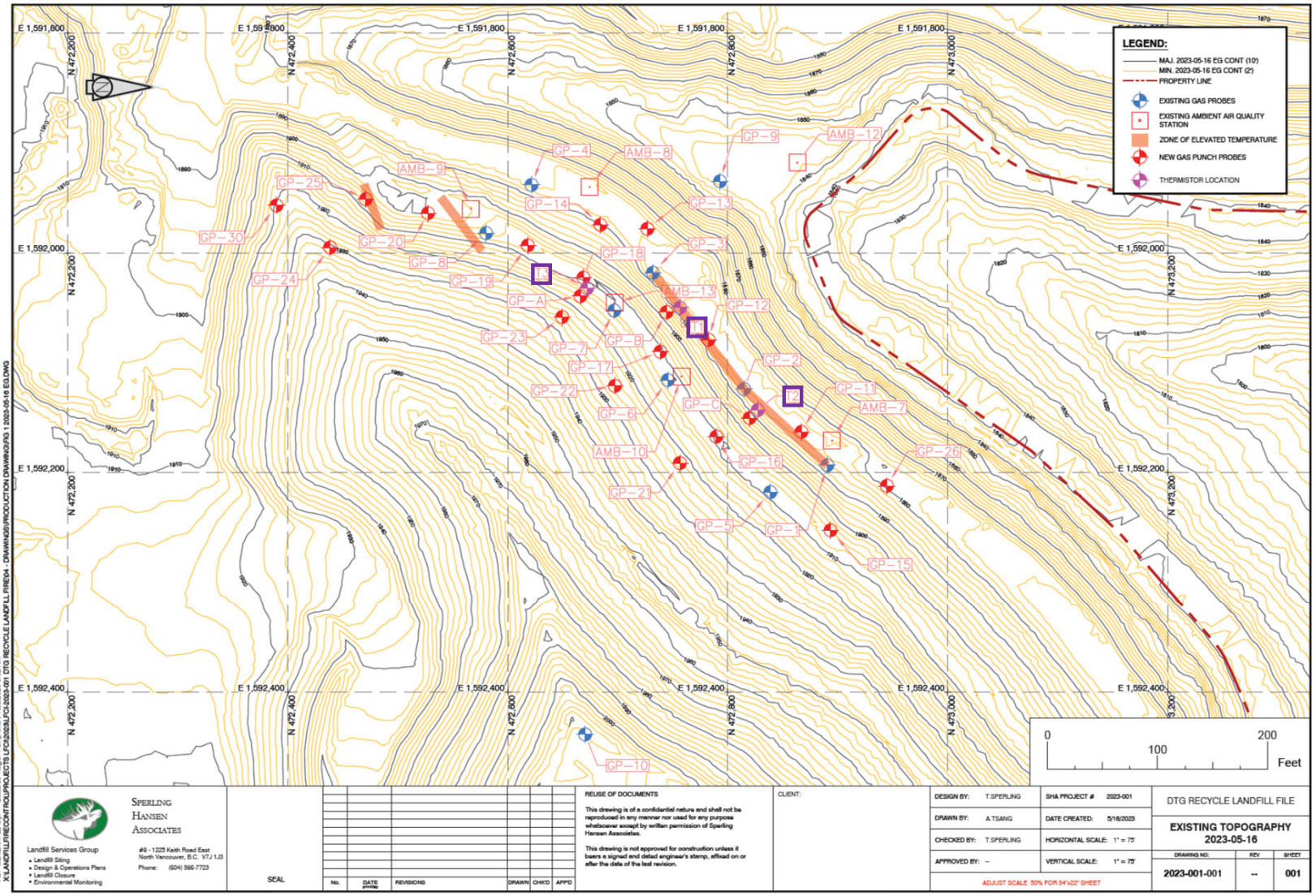

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X:\LANDFILL\RECON\ROJPROJECTS\JPO\2023\JPO-2023-001 DTG RECYCLE LANDFILL FIRE\04 - DRAWINGS\PRODUCTION DRAWINGS\FIG 1 2023-05-16 EG.DWG

Sperling Hansen Associates

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

#8 - 1225 Keith Road East
North Vancouver, B.C. V7J 1J3
Phone: (604) 986-7723

SEAL

No.	DATE	REVISIONS	DRAWN	CHKD	APPD

CLIENT:

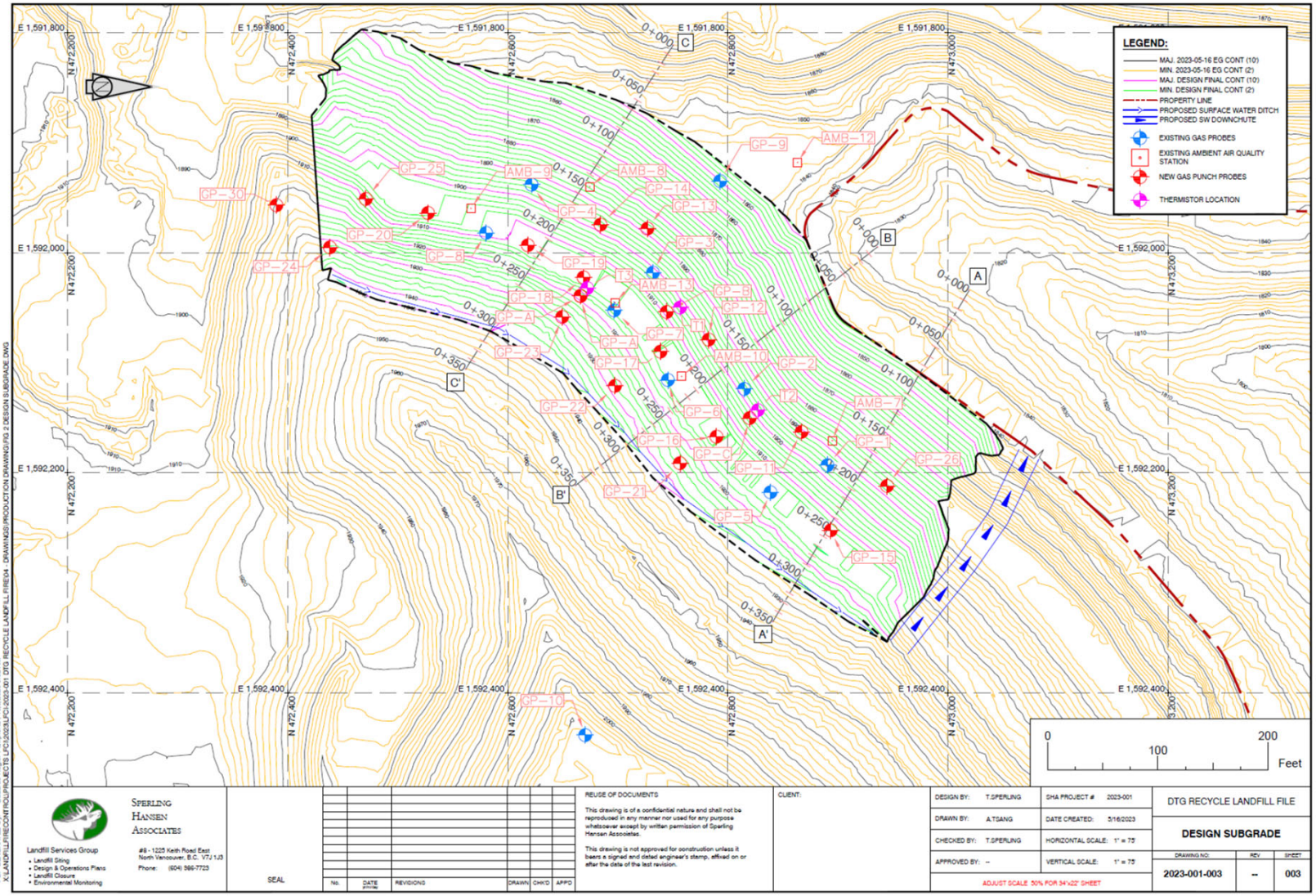
DESIGN BY:	T.SPERLING	SHA PROJECT #	2023-001
DRAWN BY:	A.TSANG	DATE CREATED:	5/16/2023
CHECKED BY:	T.SPERLING	HORIZONTAL SCALE:	1" = 75'
APPROVED BY:	--	VERTICAL SCALE:	1" = 75'

ADJUST SCALE 30% FOR 34"x22" SHEET

DTG RECYCLE LANDFILL FILE

EXISTING TOPOGRAPHY 2023-05-16

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



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SPERLING HANSEN ASSOCIATES

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- Landfill Siting
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#8 - 1225 Keith Road East
North Vancouver, B.C. V7J 1J3
Phone: (604) 986-7725

SEAL

No.	DATE (m/d/y)	REVISIONS	DRAWN	CHK'D	APP'D

CLIENT:

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 50% FOR 34"x22" SHEET

DTG RECYCLE LANDFILL FILE

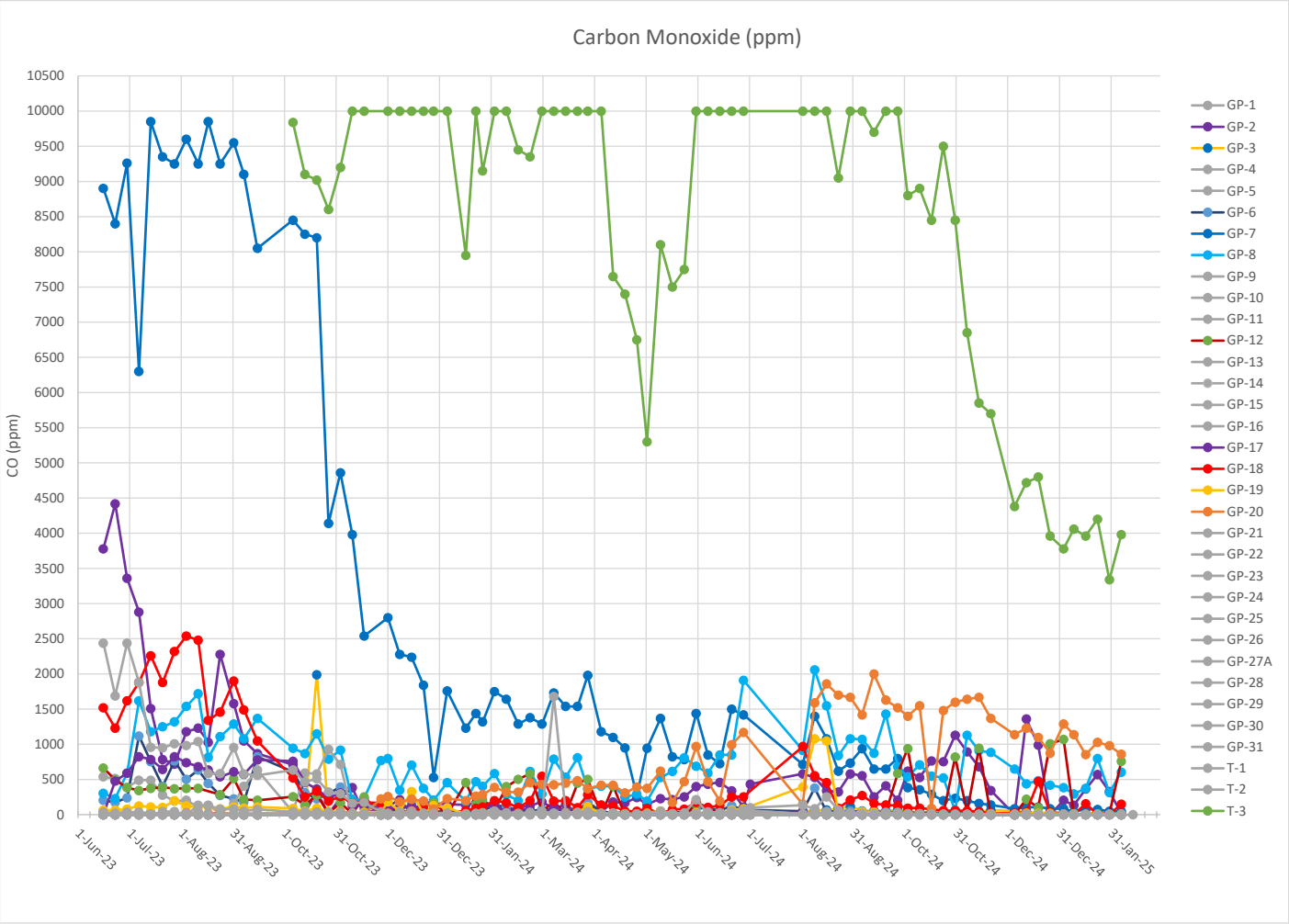
DESIGN SUBGRADE

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

Carbon Monoxide

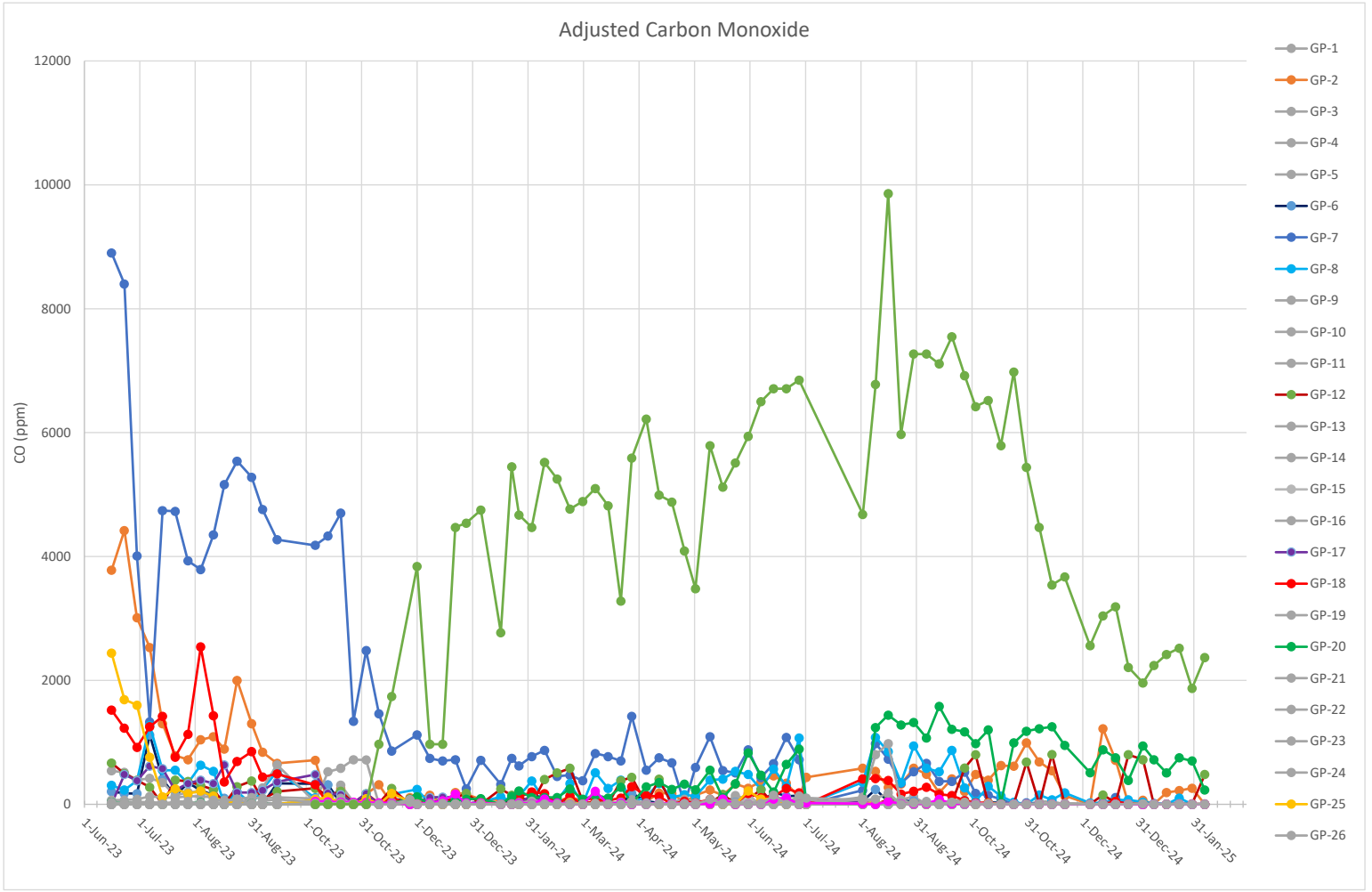
Similar to last month, February of 2025 has seen large pressure swings.

The Draeger monitoring instrument was in for recalibration with LFCI for the month of February. DTG has received the instrument and CO measurements will resume the week of March 4th.

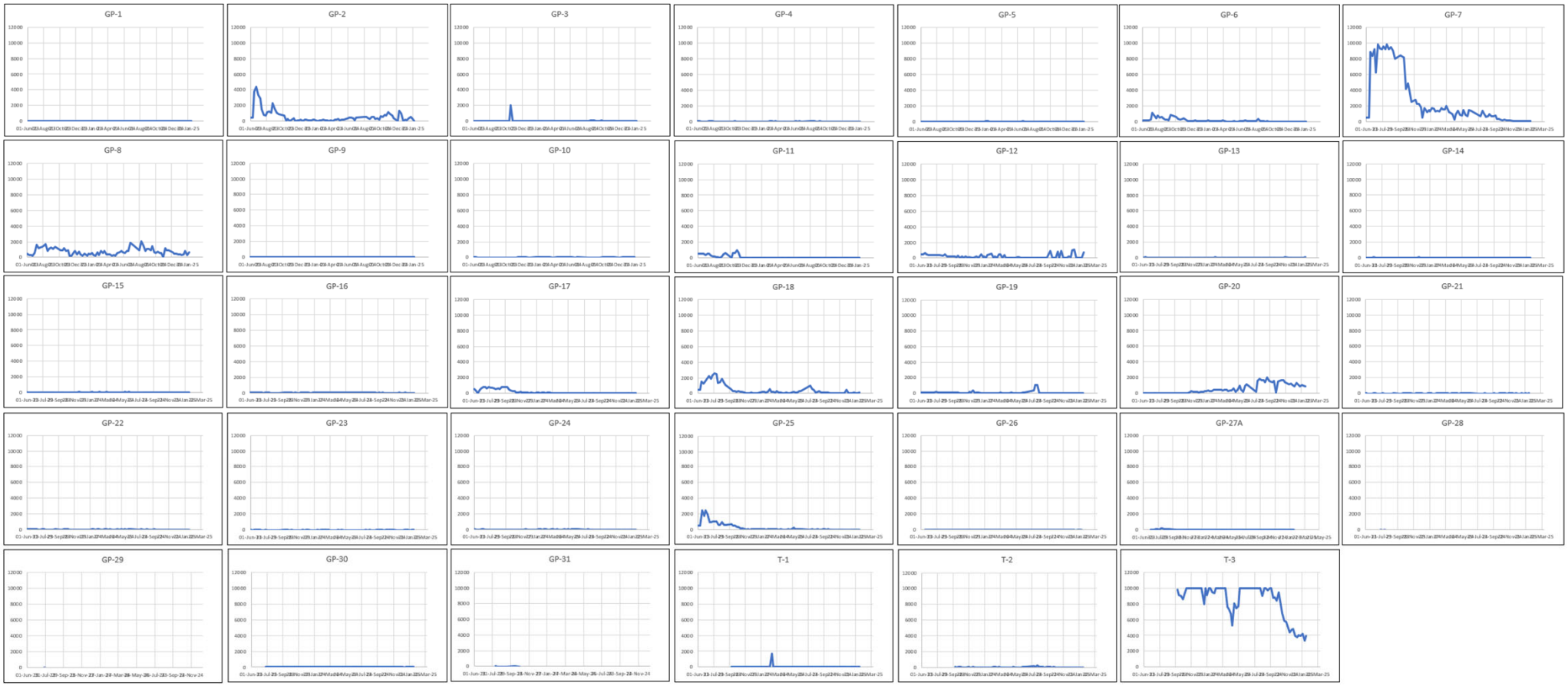


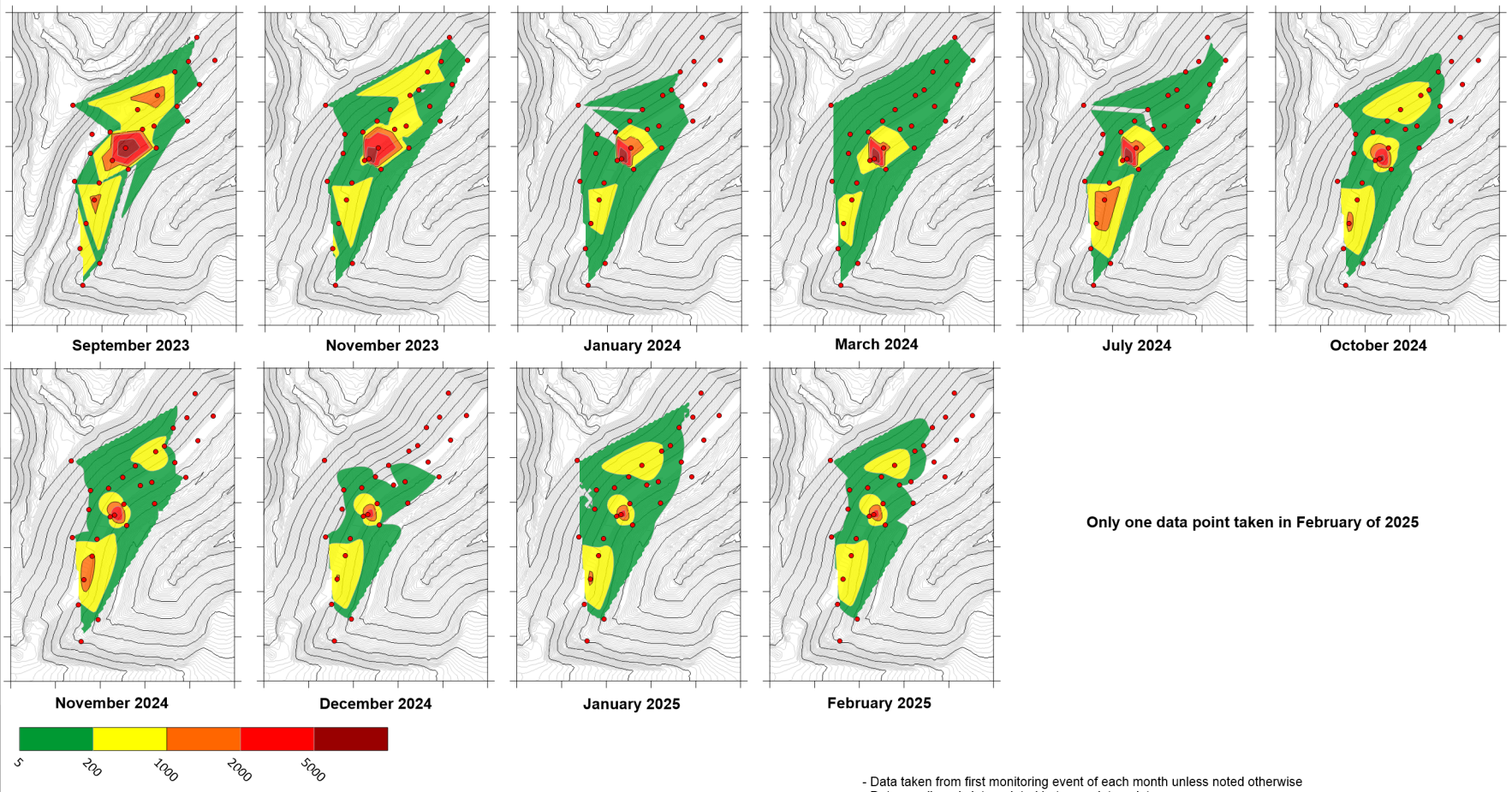
CO Adjusted for H2 Gas

While adjusted CO measurements have been consistently decreasing since August of 2024, the Draeger was in for recalibration this month. Measurements will resume the week of March 4.



CO Levels by Individual Wells





Only one data point taken in February of 2025

- 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	2025/03/04	ISSUED FOR REVIEW	MD	TS	TS

DESIGN BY:	T. SPERLING
DRAWN BY:	M. DOORNBOS
DATE CREATED:	2025/03/04
SHA PROJECT #	LFCI-2023-001

DTG RECYCLE LANDFILL FIRE

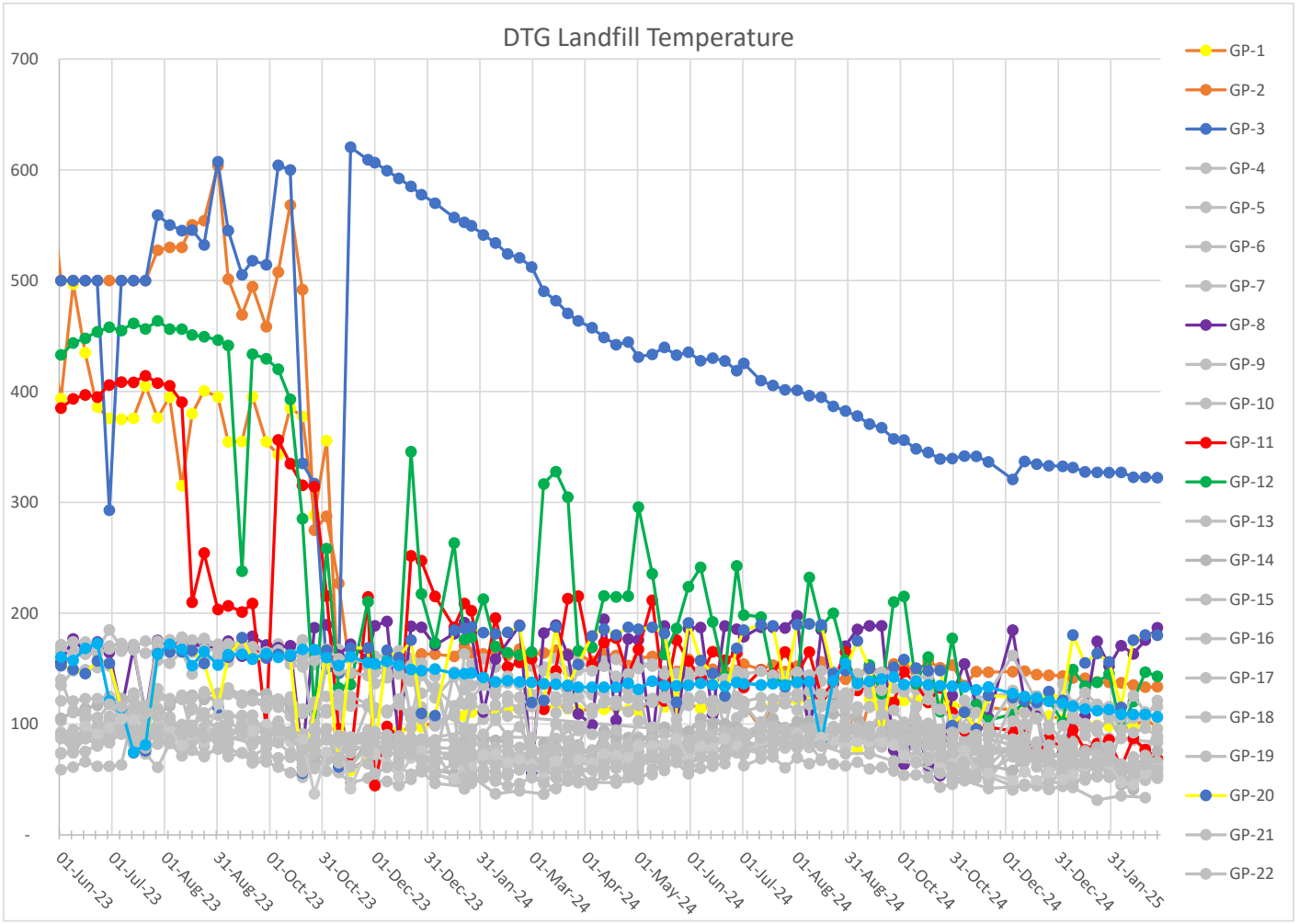
MONTHLY MONITORING SUMMARY SPATIAL MAPS - CO

DRAWING NO.	REV	SHEET
LFCI-2023-001-02-CO	1	1

Temperature (F)

February saw temperatures in GP-3 continue to decrease at a slow rate.

GP-8 and GP-20 have seen some increase over the month, while other wells have remained low.

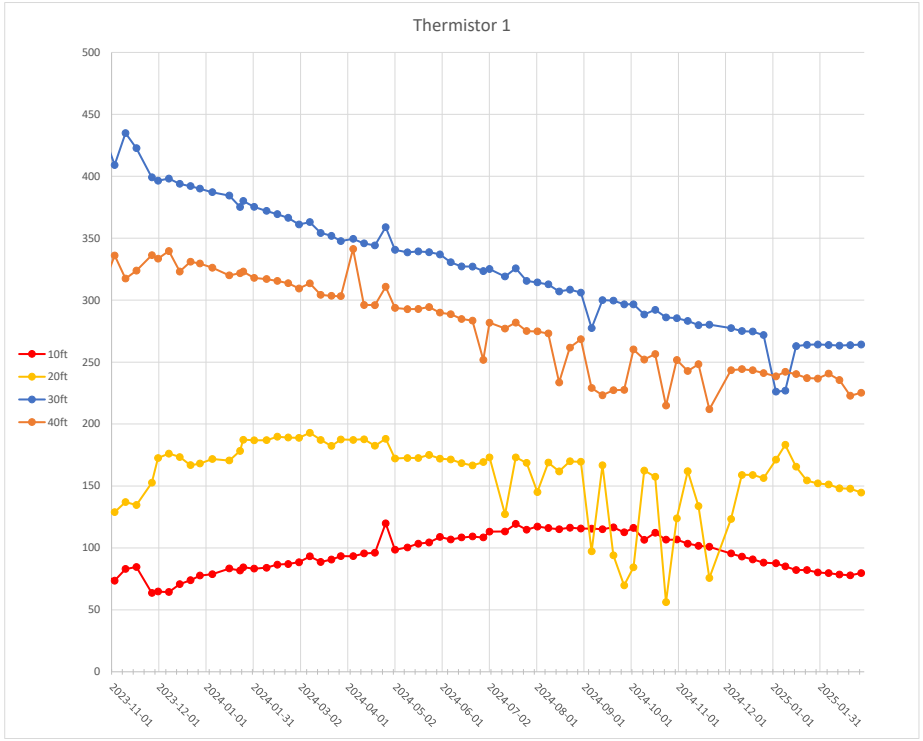


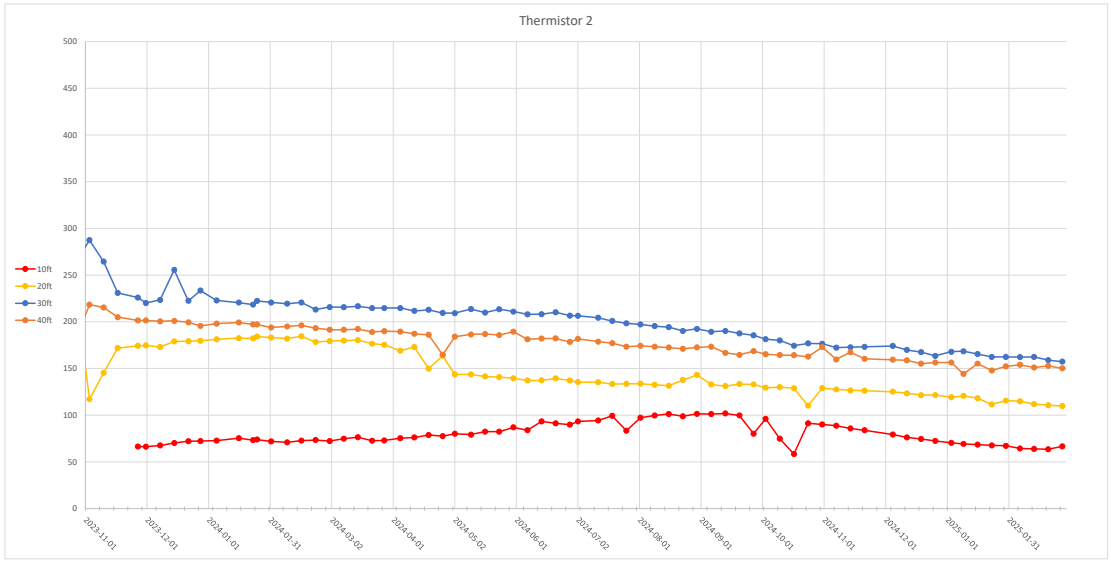
Thermistor Temperatures

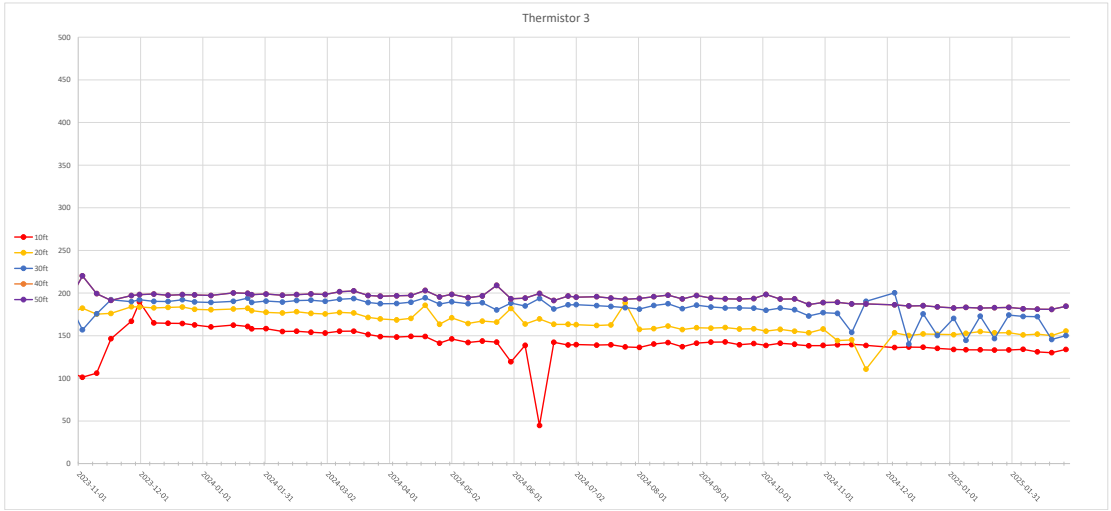
Thermistor temperatures are mostly stable, with downward trend in T-1 and T-2, and the levelling trend in T-3 continuing. Noted that the deeper measurement of 20ft below surface is cooler than measurements at 10ft depth but oscillations indicate there is an issue with the temperature readings at 20 ft. on T-1. Consideration should be given to installing a dedicated thermistor.

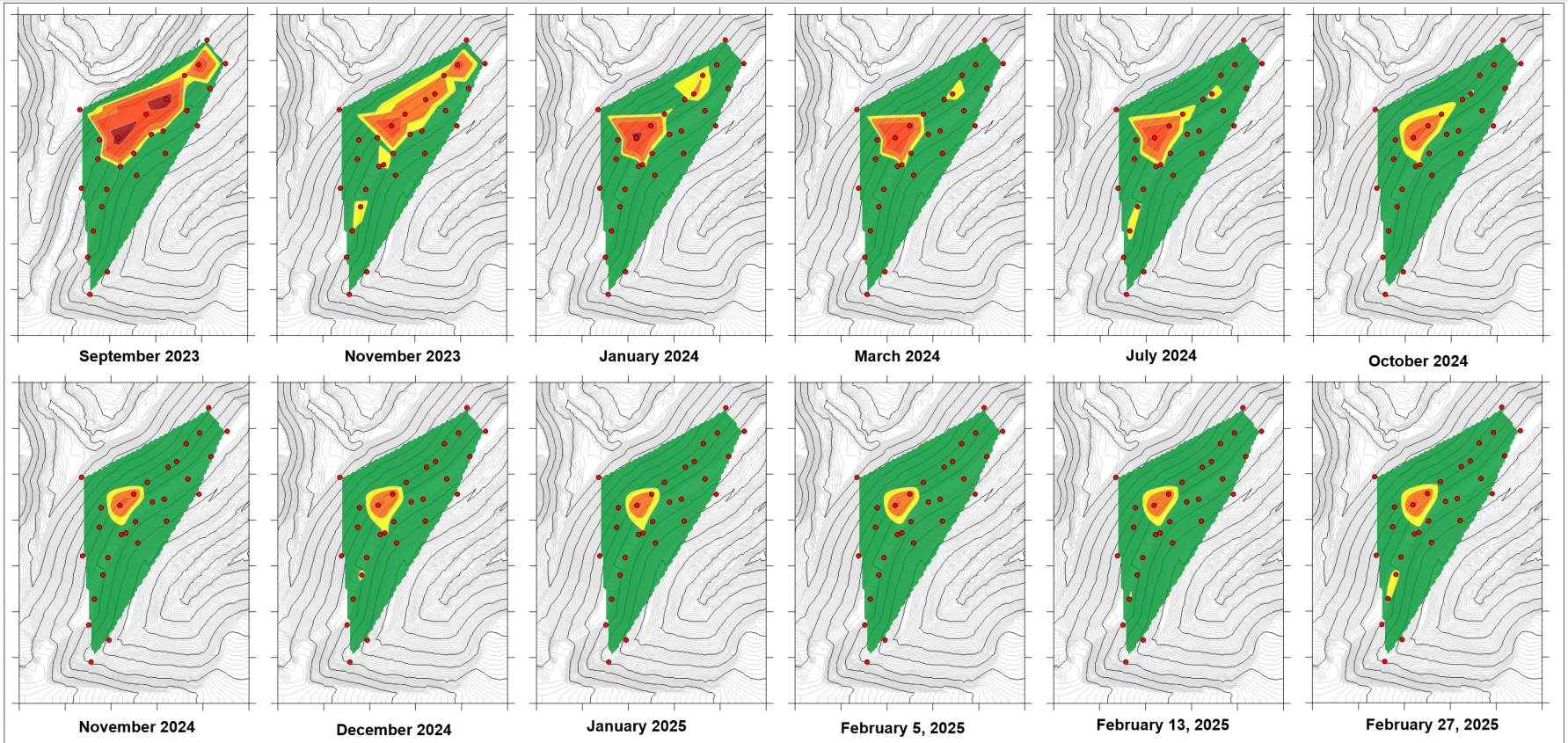
Rate of thermal decrease is very slow, 50 degrees every 4 months. We project about 2 years will be needed to get to desired baseline levels around 122F without additional cooling effort.

Slight increase in temperatures at the end of February, likely due to increased oxygen availability on account of pressure swings.









- 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

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No.	DATE yr/m/day	REVISIONS	DRAWN	CHK'D	APP'D
1	2025/03/04	ISSUED FOR REVIEW	MD	TS	TS

DTG Recycle

DESIGN BY:	T. SPERLING
DRAWN BY:	M. DOORNBOS
DATE CREATED:	2025/03/04
SHA PROJECT #	LFCI-2023-001

DTG RECYCLE LANDFILL FIRE

MONTHLY MONITORING SUMMARY SPATIAL MAPS - TEMPERATURE

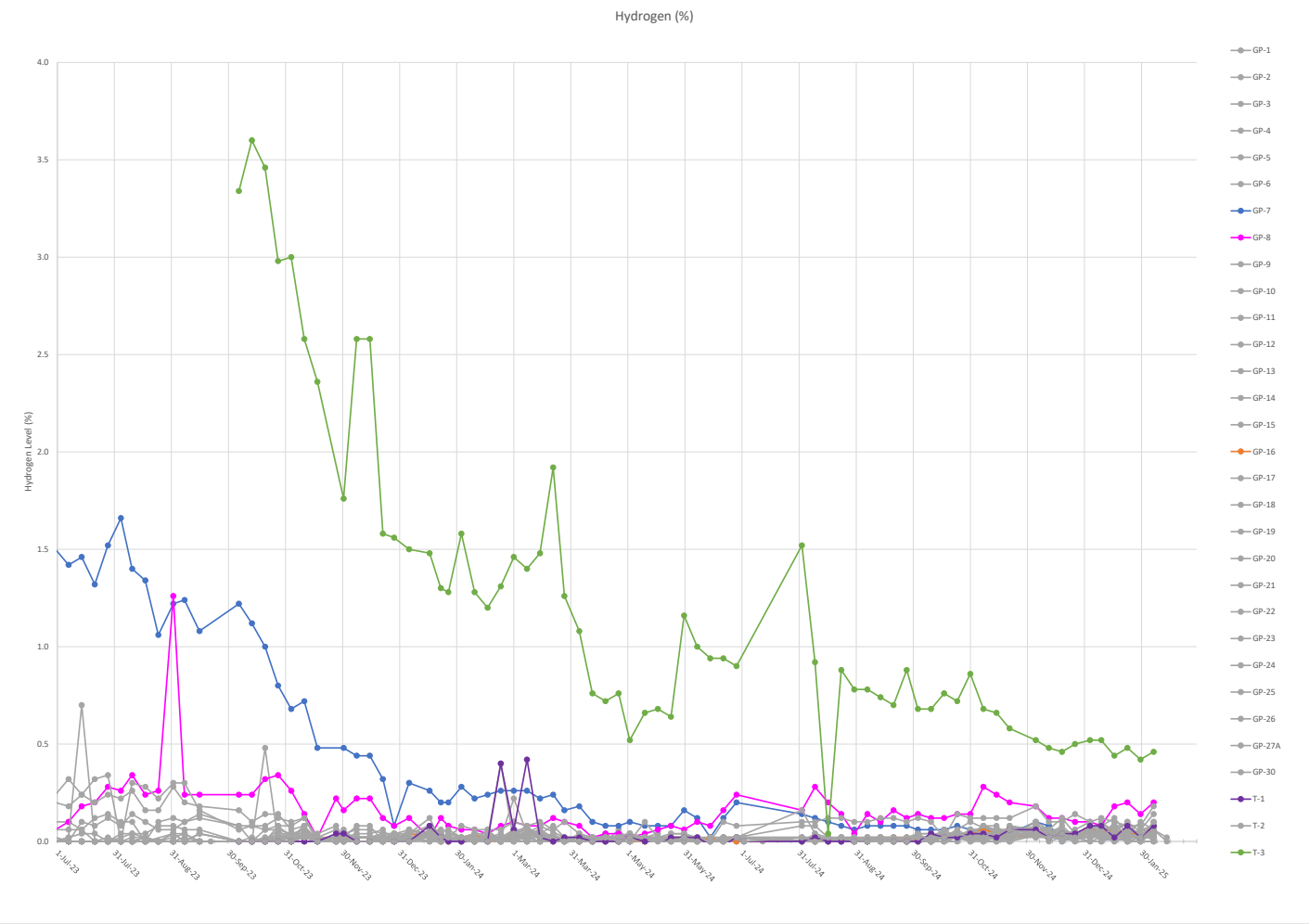
DRAWING NO.	REV	SHEET
LFCI-2023-001-02-TEMP	1	1

Hydrogen

Hydrogen has decreased to just below 0.4% in T-3, and has steadily decreased from 0.8% in mid August of 2024.

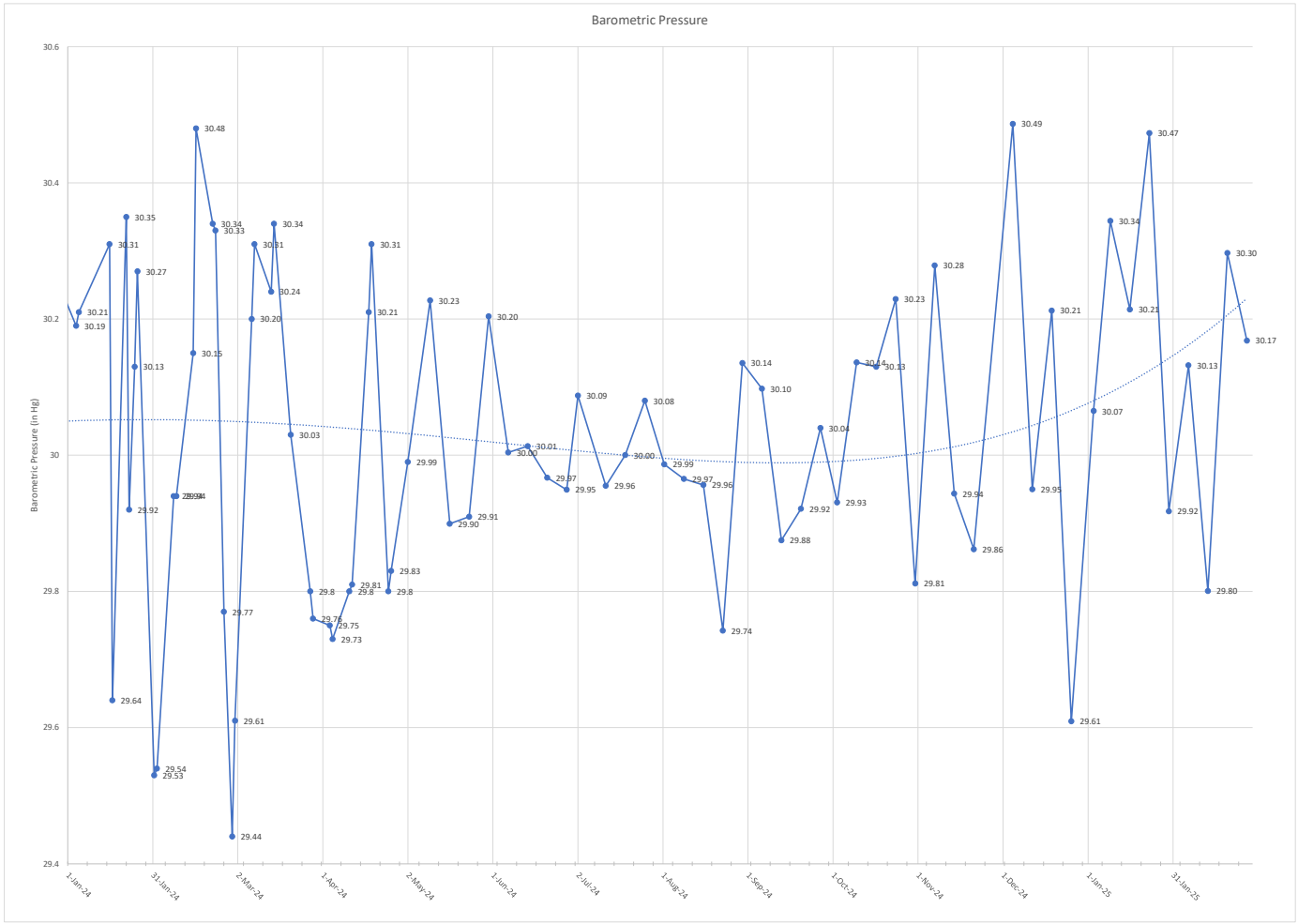
Hydrogen remains very low in all other wells. Production of H_2 is often observed with smoldering waste. LFCI believes that the level of H_2 dropping continues to indicate that the fire is less active.

As the Draeger was in for recalibration this month, measurements will resume in March.



Barometric Pressure

The site observed large swings in the barometric pressure over the last month. The month began with a large decrease, followed by an even larger increase.

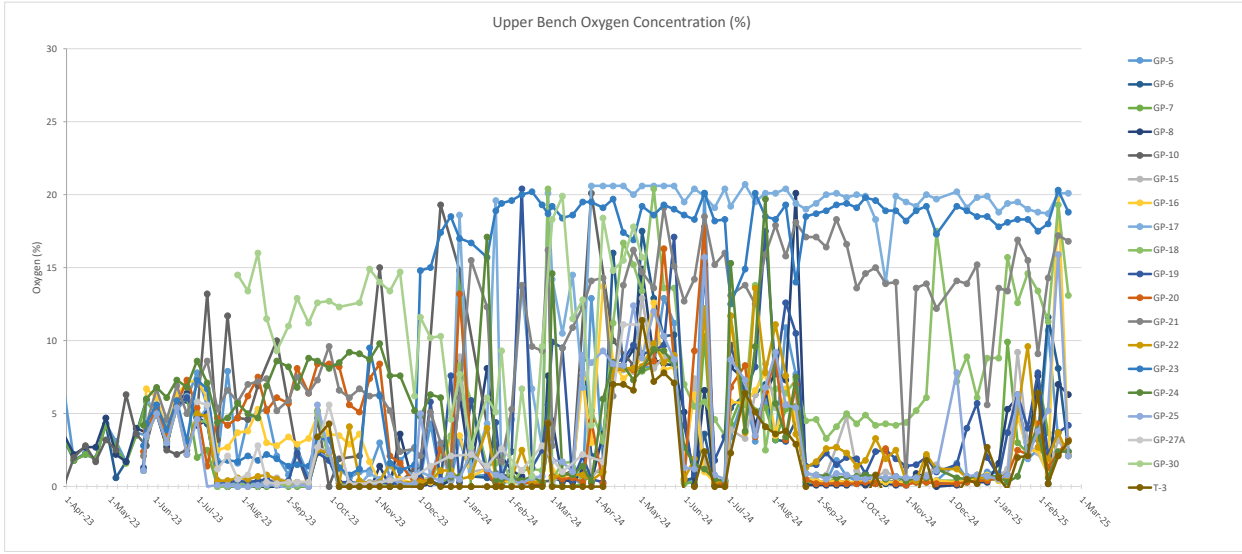


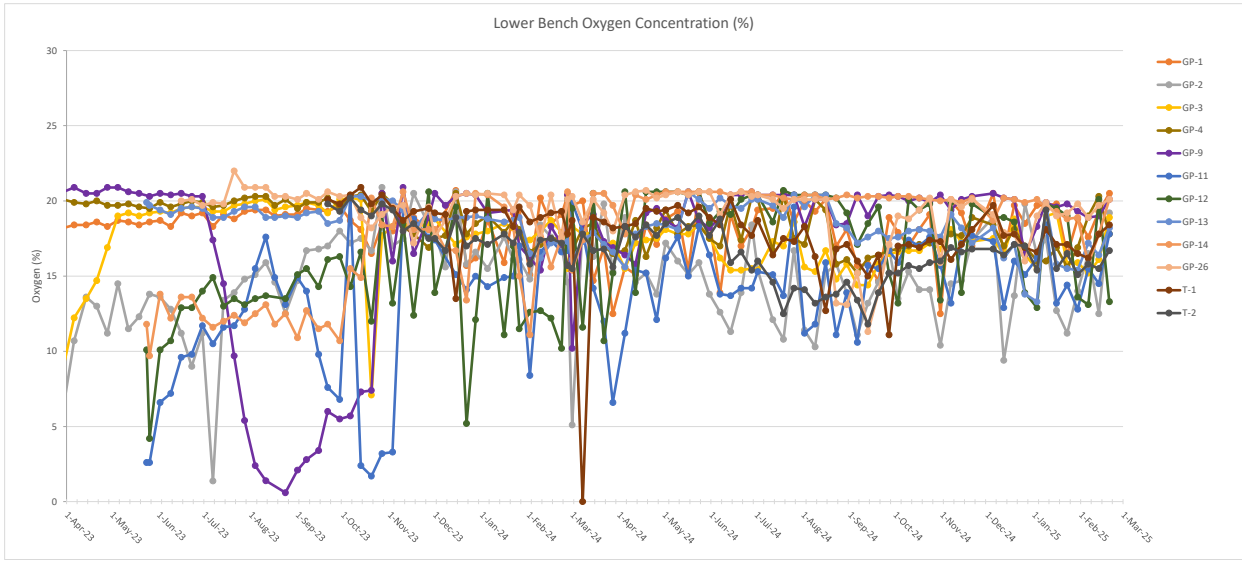
Oxygen

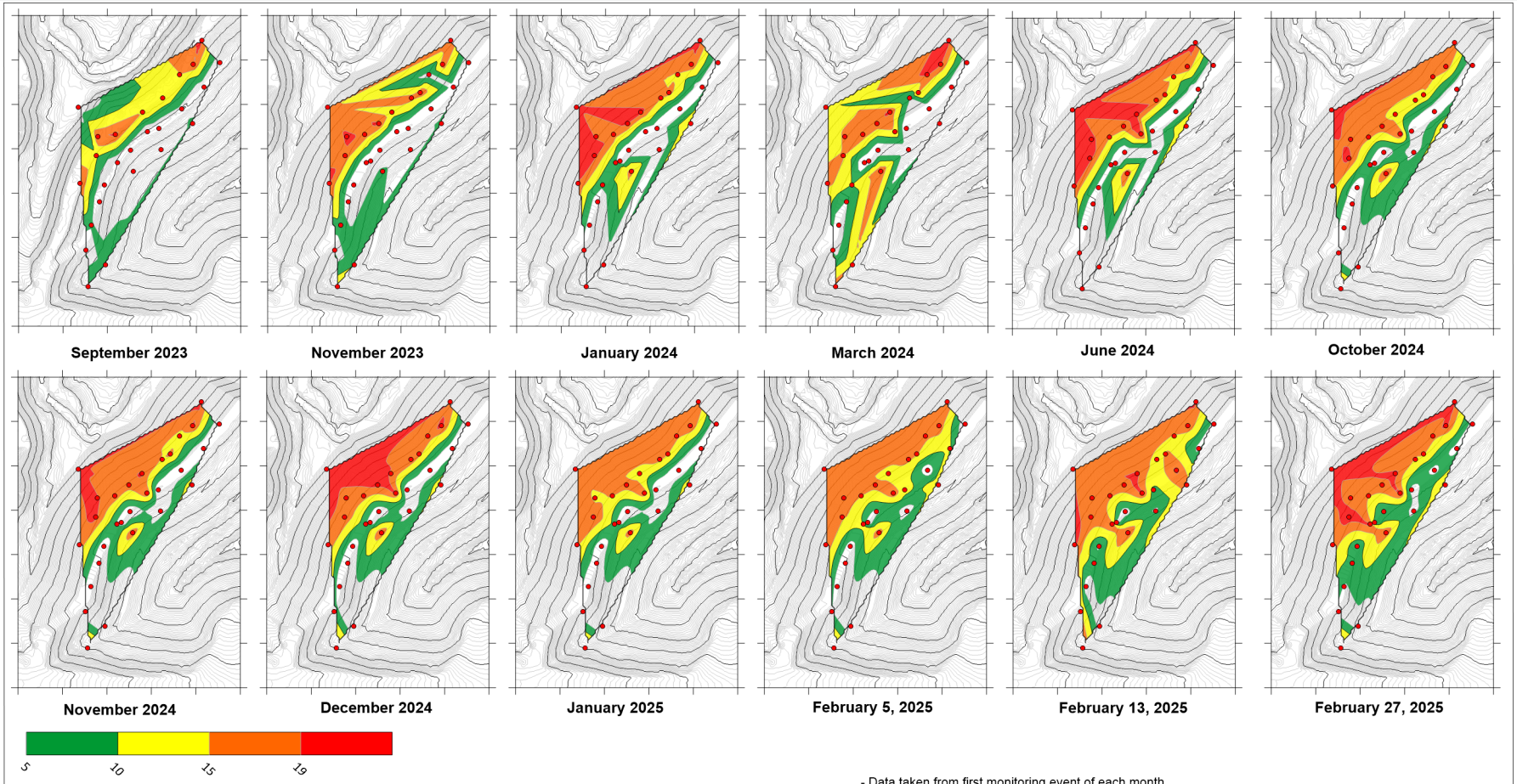
The oldest portion of the landfill is likely relatively inert and biologically inactive, producing very little methane. As a result, the pore space is full of atmospheric air.

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 02 concentrations in early February due to very large atmospheric pressure swings.







- 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	2025/03/04	ISSUED FOR REVIEW	MD	TS	TS

DESIGN BY:	T. SPERLING
DRAWN BY:	M. DOORNBOS
DATE CREATED:	2025/03/04
SHA PROJECT #	LFCI-2023-001

DTG RECYCLE LANDFILL FIRE

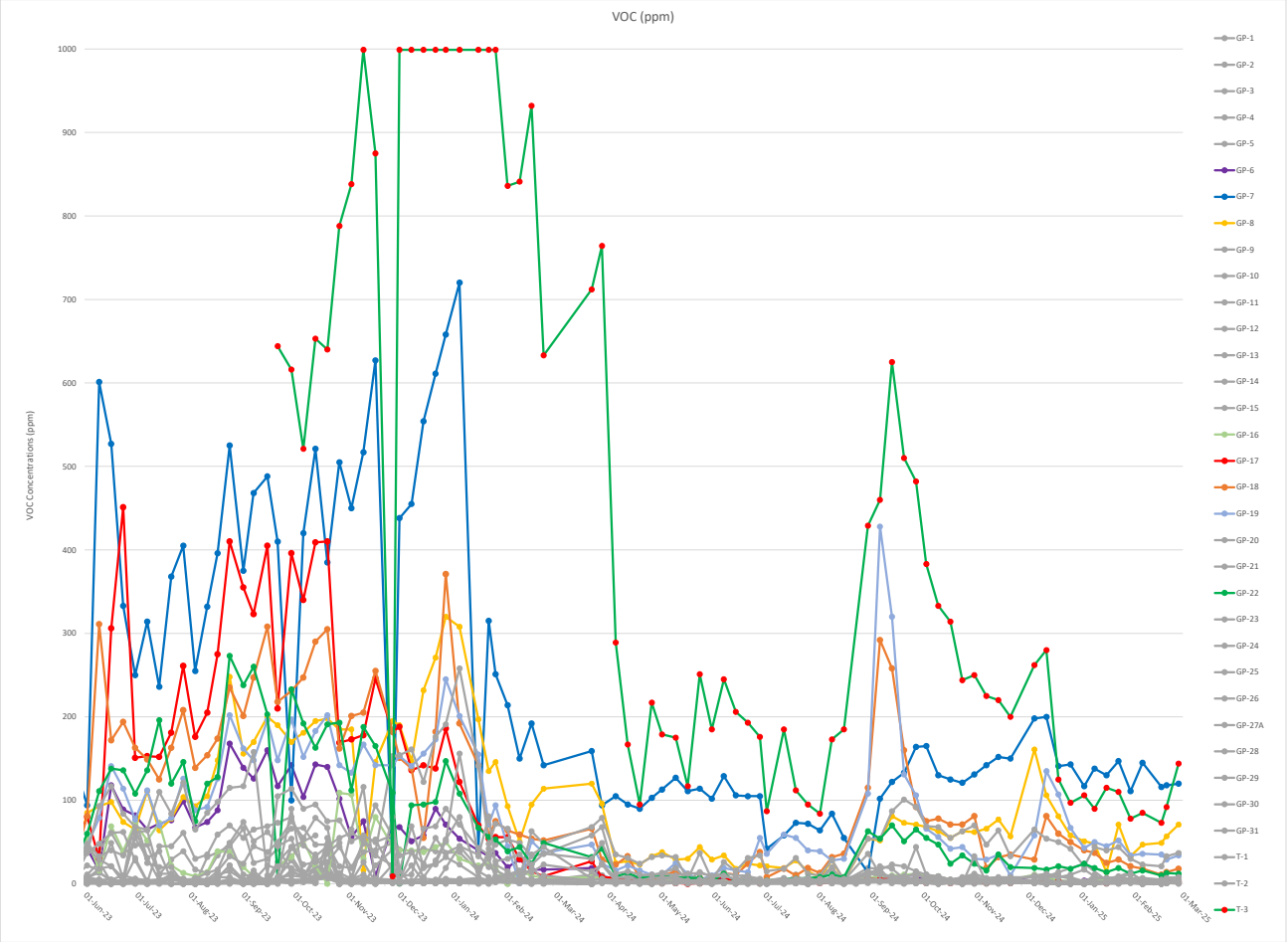
MONTHLY MONITORING SUMMARY SPATIAL MAPS - O2

DRAWING NO.	REV	SHEET
LFCI-2023-001-02-O2	1	1

Volatile Organic Compounds

Increase seen VOC concentration in T-3 in August has continued to decrease even further.

Through February, most VOC levels continued to be stable, while T-3 has seen increased levels in the last two weeks. LFCI will continue to monitor closely.

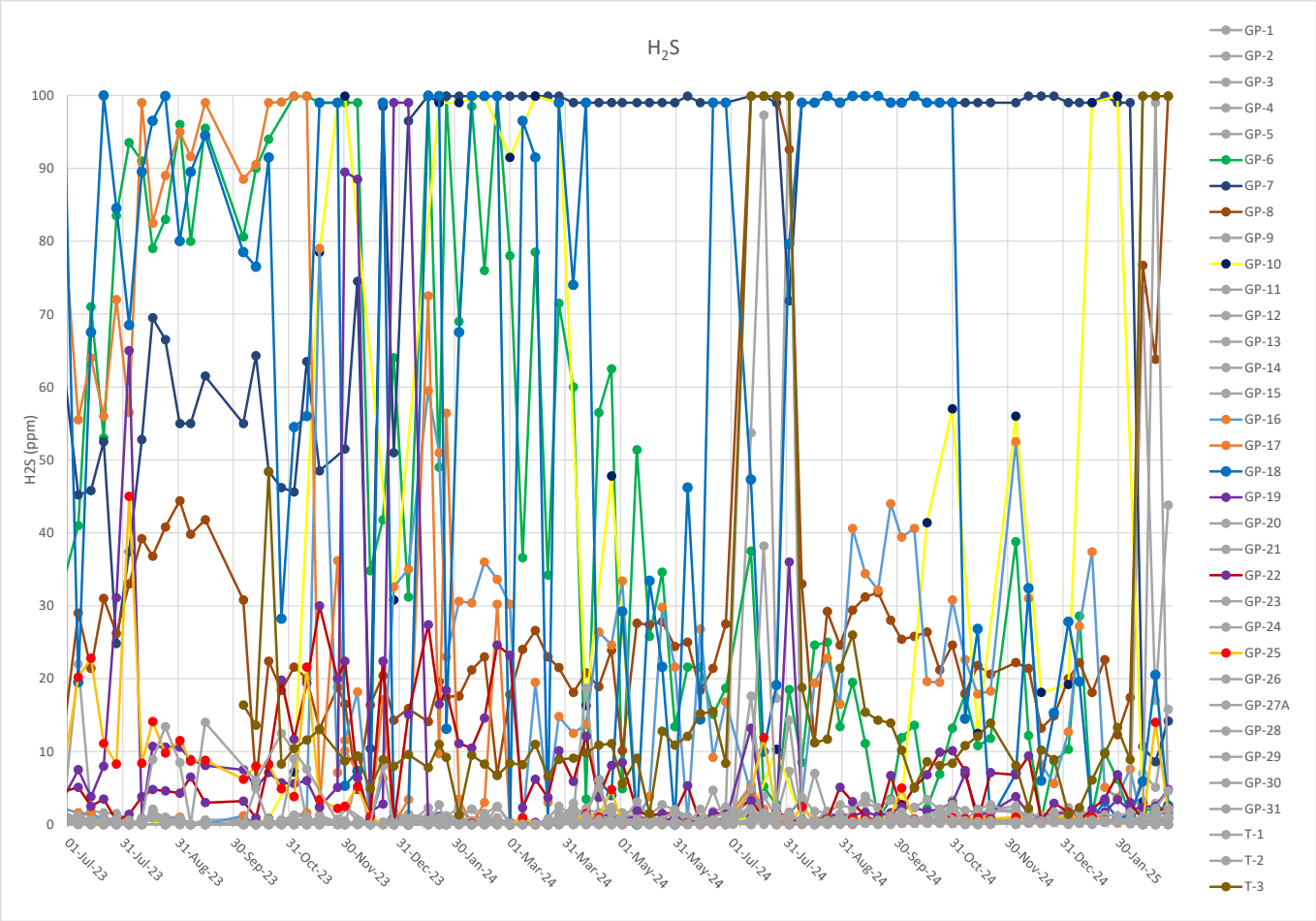


Hydrogen Sulfide

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

Most locations are low, but GP-8, GP-12, and T-3 are high this week.

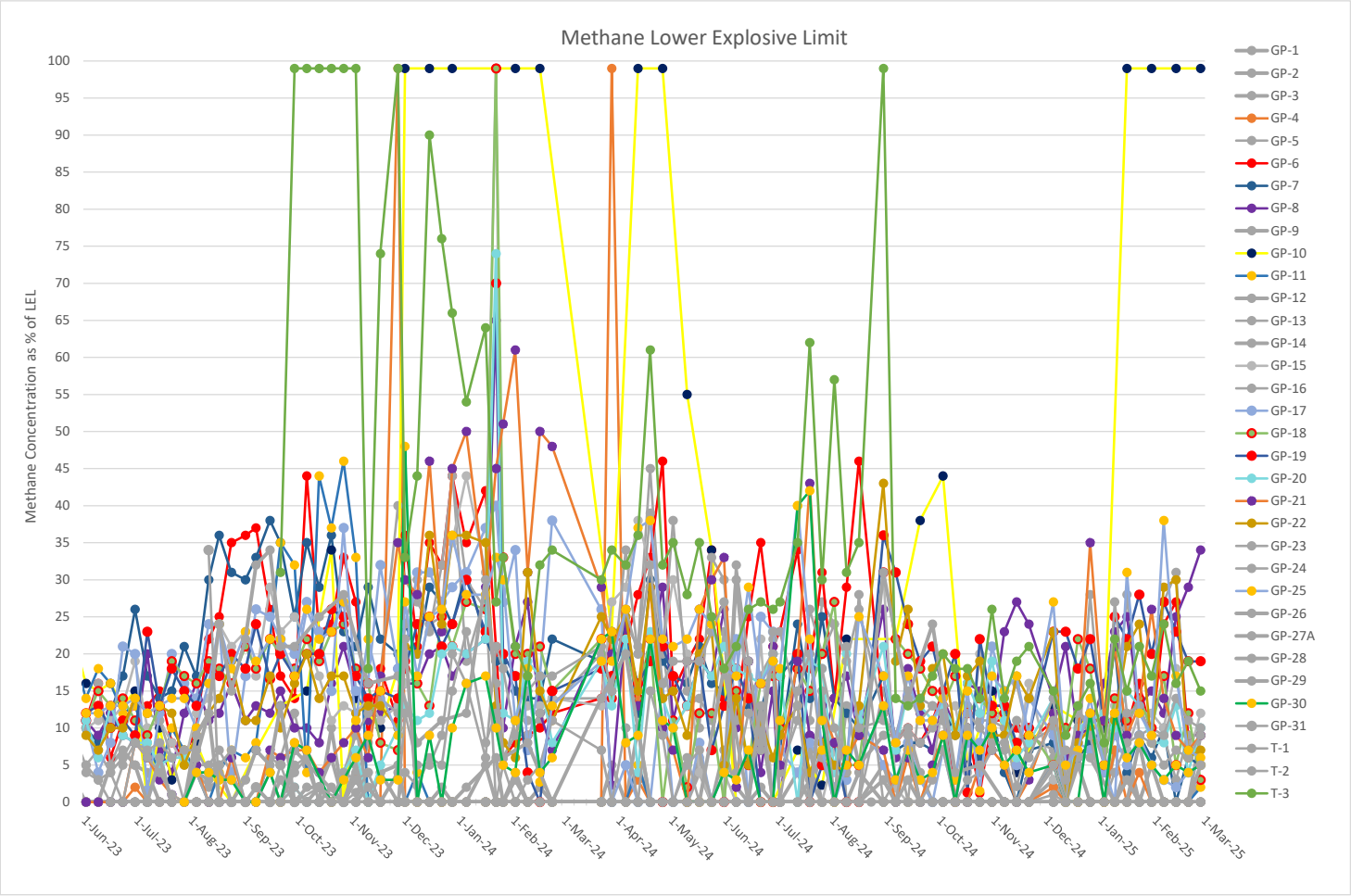
As mentioned previously, it is possible that the H_2S sensor is being impacted by CO cross interference. With CO concentration decreasing, reported H2S concentration is dropping as well.



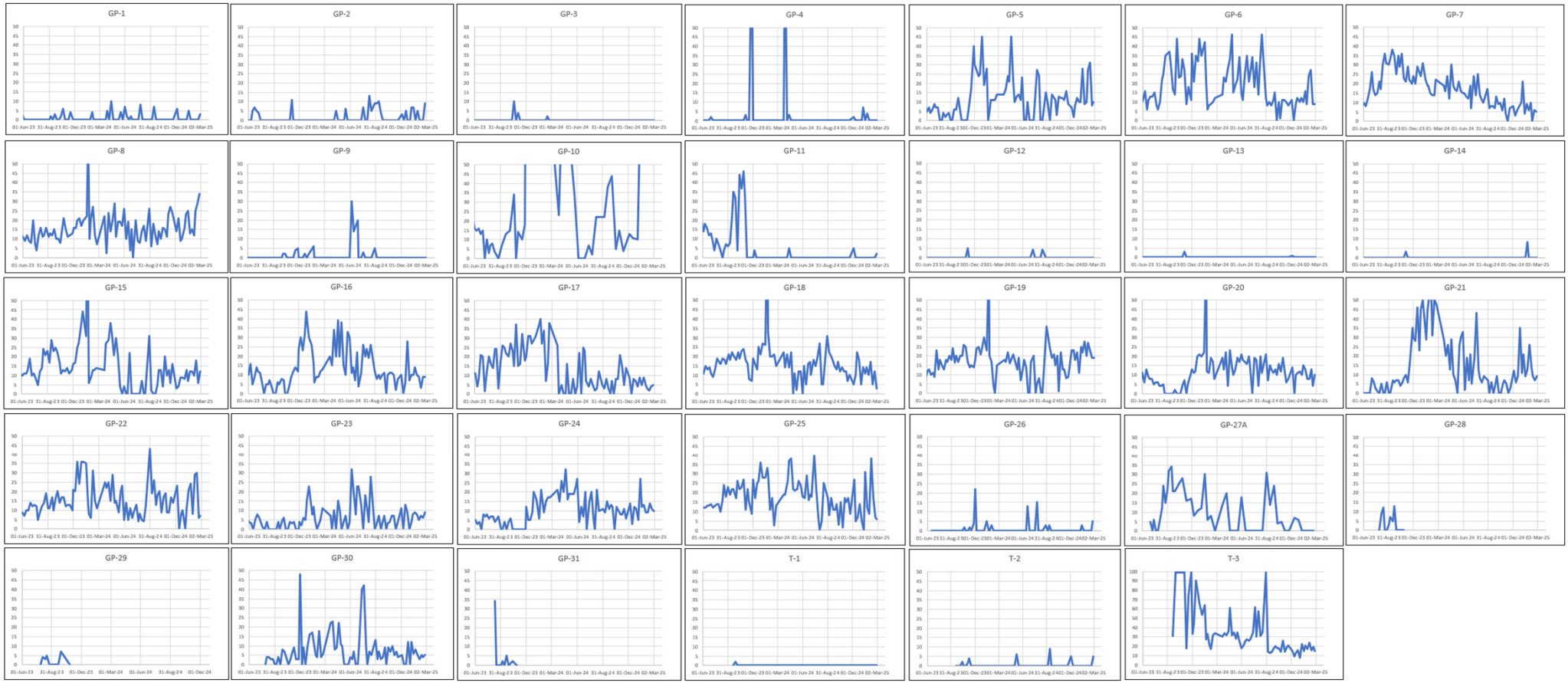
Lower Explosive Limit

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.



LEL for individual GP

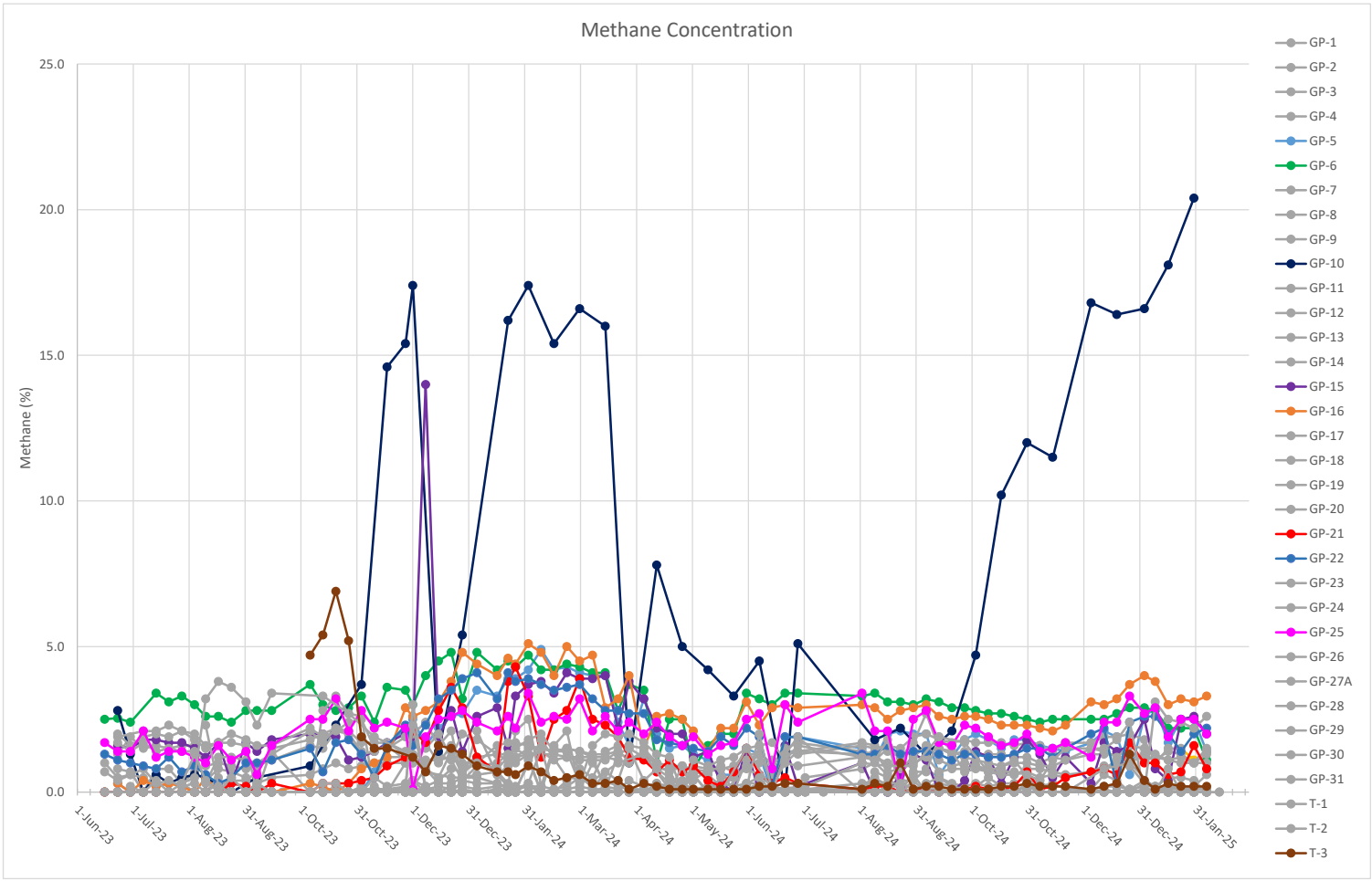


Methane

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.

The Draeger instrument was in for recalibration this week, and measurements will resume in early March.

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GP-10
GP-21
GP-22
GP-23
GP-24
GP-15
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GP-16
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GP-18
GP-19
GP-20
GP-25
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GP-11
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T2
GP-12
T1
3
GP-14
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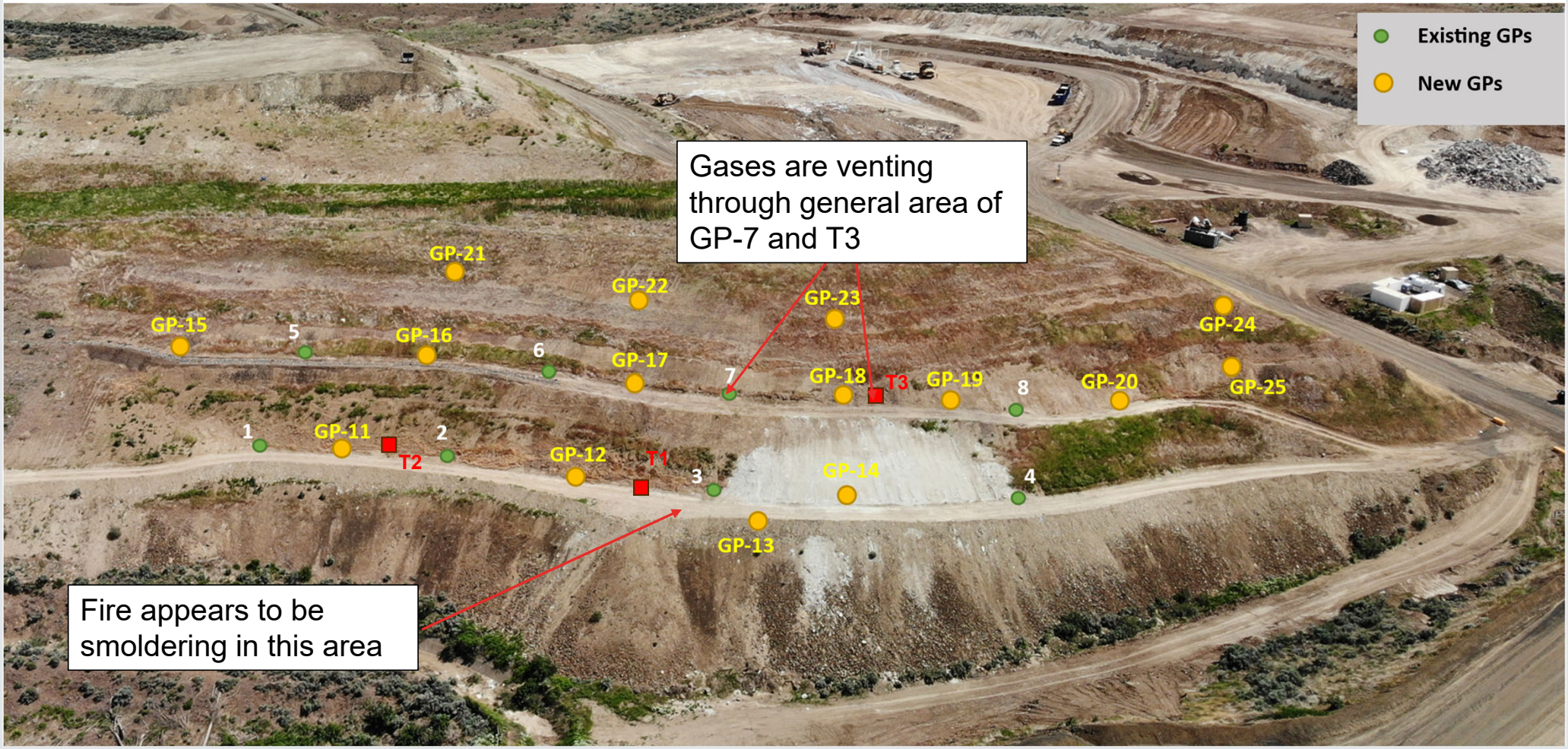
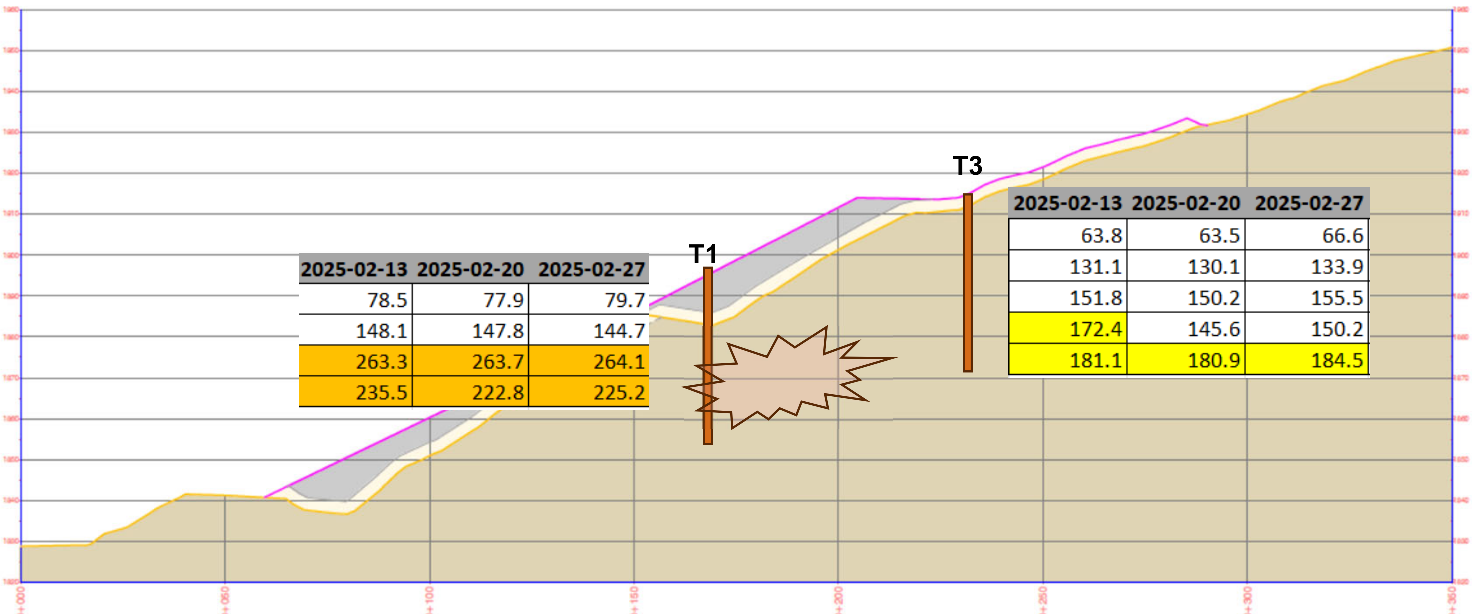
GP-13
Existing GPs
New GPs

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
5
GP-16
6
GP-17
7
GP-18
T3
GP-19
8
GP-20
GP-24
GP-25
1
GP-11
T2
2
GP-12
T1
3
GP-14
4
GP-13

LEGEND:

- 2023-05-16 EG PROFILE
- DESIGN SUBGRADE PROFILE
- MINUS 12" SHOT ROCK
- 3' COMPACTED LOW PERMEABILITY SOIL
- EXISTING GROUND



T1

2025-02-13	2025-02-20	2025-02-27
78.5	77.9	79.7
148.1	147.8	144.7
263.3	263.7	264.1
235.5	222.8	225.2

T3

2025-02-13	2025-02-20	2025-02-27
63.8	63.5	66.6
131.1	130.1	133.9
151.8	150.2	155.5
172.4	145.6	150.2
181.1	180.9	184.5

SECTION B - B'

H - 1" : 25'

V - 1" : 25'

SPERLING HANSEN ASSOCIATES

Landfill Services Group
- Landfill Siting
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Phone: (604) 986-7723

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DRAWN BY:	A.TSANG	DATE CREATED:	5/16/2023
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APPROVED BY:	–	VERTICAL SCALE:	1" = 25'

ADJUST SCALE 50% FOR 34"x22" 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.

In LFCI experience, CO has been best indicator of suppression at other landfill sites.

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.

Temperature has dropped significantly all around to Dec. 2023 when the trend has shifted to a steady condition, with minimal changes occurring. In February, temperatures in GP-3 continued to decline slowly while temperatures increased slightly in T-1 on account of increased oxygen concentrations that were result of large pressure swings.

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 T-3 and GP-7.

LFCI believes that with the placement of the soil wedge gas flow southward has become the preferred migration path for combustion gases from the smolder at T-1, resulting in elevated readings in GP-20 area.