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To: Bret Allen, Environmental Scientist IV, Nevada Department of Agriculture (NDA)
From: Raymond Saliga, Agriculturist IV, NDA
Date: June 20, 2022
Subject: Complaint Investigation - Danielle Del Nodal

On Tuesday, May 10, 2022, NDA received a complaint from Special Agent Wendy Su, Criminal Investigation Division, U.S. Environmental Protection Agency filed by Danielle Del Nodal alleging pesticide drift contacted her fiancé and dog while they sat in the backyard of their residence at 10376 Miners Gulch Ave, Las Vegas, NV 89135 during an herbicide application along a landscaped trail area adjacent to their property. In communications with Special Agent Su, the complainant stated Randy Ecklund from the Summerlin Council HOA called and stated RoundUp QuickPro (EPA Reg. No. 524-535) and SpeedZone (EPA Reg. No. 2217-833) were used in the area.

On Thursday May 12, 2022, I met Ms. Del Nodal at her residence to conduct an interview and inspect the backyard of the residence for signs of herbicide damage which may have resulted from herbicide drift.

Ms. Del Nodal confirmed that the event described in her complaint occurred on Friday, April 29, 2022. Ms. Del Nodal stated that her fiancé and dog were in the backyard when a man on a golf cart drove by spraying something to the area along the path, which she later found to be SpeedZone herbicide after speaking with Mr. Eckland. I collected documentary photos (DOC05122231120101) of the yard and inspected plants for signs of herbicide injury. I observed three plants with possible injury from herbicide drift (Fig 1-3), one of which had been apparently crudely trimmed or broken back to mostly green growth. Both undisturbed plants had dry stems which easily snapped and lacked green cambium, and brown, dry leaves. Leaf roll and distortion was present on both plants but more pronounced on the plant in the center of the fence line, which also had some leaves exhibiting dark colored necrotic lesions. Ms. Del Nodal could not provide information about when the plants had died or when the plant had been broken, she stated they have not resided in the house since the incident occurred. I collected discreet samples (SN05122231120102, SN05122231120103) from the two plants without mechanical disturbance (Figure 4).

I then walked the neighborhood path adjacent to Ms. Del Nodal's backyard from Summerlin Centre Community Park to Sandstone Bluffs Dr. I did not observe visual indications of herbicide activity on plants in the landscaped areas along the path. Due to the dimensions of the potentially treatable area and the variety and heterogenous distribution of plants, I took a composite sample of plants between the path and Ms. Del Nodal's property line (SN05122231120201) along with corresponding photographs.

I contacted Mr. Ecklund, who directed me to Brightview Landscaping as the contractor responsible for herbicide applications in Summerlin Centre Park and nearby community areas. He stated that Brightview applies SpeedZone herbicide to turfgrass in Summerlin Centre Park and other parks in the area, and RoundUp along walkways, buildings, and parking lots.

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After reviewing documentary photographs, interview notes, and the product labels for SpeedZone and RoundUp Quickpro, I determined it was necessary to return to the site to collect additional samples from the potentially treated area between the walking path and Ms. Del Nodal's property line. I returned on Friday May 13, 2022, and collected discreet samples from a weed at the base of the retaining wall at the property line, a weed about 4 feet from the retaining wall, and foliage from two plants growing through Ms. Del Nodal's fence into the community HOA property. Samples and the chain of custody were shipped to the NDA chemistry laboratory in Sparks, NV for analysis.

I then contacted Glenn Ballangao (Lic. No. 203459), Primary Principal of Brightview Plant Healthcare (Lic. No. 6849) and requested records for all pesticide applications in Summerlin Centre Park and the walking path from the park to Hualapai Way. Mr. Ballangao stated that no applications in Summerlin Centre Park had been performed by Brightview since April 2020, and provided me with records documenting pesticide applications of SpeedZone to turf areas and ballfields in various Summerlin Community parks. Mr. Ballangao stated that Select Services (Lic. No. 2179) is contracted by Summerlin Community HOA to apply herbicides to "linear areas" and waterways. Mr. Ballangao sent me application records provided by Select Services to Summerlin Community HOA which documented applications of Dimension (EPA Reg. No. 62719-542) and RoundUp Pro Custom For Aquatic (EPA Reg. No. 524-343) to a box culvert and 20ft outward.

I contacted Sara Mendoza (Lic. No. 200767), Primary Principal of Select Services (Lic. No. 2179) and requested records for any pesticide applications which occurred near Summerlin Centre Park or along the walking path between the park and Hualapai Way in 2022. Ms. Mendoza stated that Select Services applies Roundup Custom for Aquatic and Dimension in and around box culverts in the area to suppress weeds and provide a clear path for stormwater. Ms. Mendoza provided records of applications by Select Services identical to those provided by Mr. Ballangao for applications which occurred in 2021 and 2022.

Select Services provided records for two applications which occurred in 2022:

- Invoice # 434196: On April 25, 2022, "Round Up Pro Custom for Aquatic" EPA Reg. No. 524-343 was applied via backpack sprayer. 1-gallon total volume was applied at a rate of 2/3 fl. oz. per gallon. The description lists "Spot treatment of existing weeds". There is no EPA registered product with this name, however EPA Reg. No. 524-343 is assigned to Roundup Custom Herbicide with an alternate name "Roundup Custom® for Aquatic & Terrestrial Use". The description also lists "Pre-emergent application for weeds along the banks, each side of box calvert, 20 ft outward", but the record does not indicate an EPA Reg. No., brand name, rate, or volume of a pre-emergent herbicide.
- Invoice # 434162: On April 25, 2022, 5 gallons of Dimension EPA Reg. No. 62719-542 was applied at rate of 2 pints/acre. The description states "Pre-emergent application for

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weeds along the banks, each side of box culvert, 20 ft outward”. The total area treated is not listed; it is unclear whether 5 gal of finished solution was applied at an unrecorded rate, or 5 gal of formulation was applied at a rate of 2 pints/ac in an unrecorded total volume.

Laboratory analysis detected presence of glyphosate, the active ingredient in Roundup Custom Herbicide, in four samples and did not detect the active ingredients in Speedzone Herbicide (2,4-D and dicamba) or Dimension (Dithiopyr) in any sample. The highest concentration of glyphosate was detected in the composite sample, 1516.4 ppm. Analysis of point samples collected near the property line of 10376 Miner’s Gulch Ave detected concentrations of 2.42ppm, 0.34ppm, and 0.72ppm glyphosate (Figure 5). For comparison, the lowest dilution rate listed on the Roundup Custom Herbicide label, 0.5% by volume, yields a solution equivalent to 2498 ppm glyphosate.

Select Services’ invoice #434162 documents the application of Dimension “for weeds along the banks, each side of the box culvert 20 ft outward” on April 25, 2022. The landscaped area where composite sample SN05122231120201 was collected is within 20ft of the banks of the wash along the walkway, and the property line of 10376 Miners’ Gulch is roughly 35ft from the banks of the wash, however the active ingredient of Dimension (dithiopyr) was not detected on any sample collected.

Findings and Recommendations:

Application records from Select Services do not include the total area of turf or ground treated as required by NAC 555.410 for herbicide applications. Application records of Dimension on April 25, 2022, October 29, 2021, and April 1, 2021, do not clearly state the total amount of diluted pesticide applied and the concentration of the diluted mixture as required by NAC 555.410. Though records indicate that Dimension was applied in the area on April 25, 2022, it was not detected by laboratory analysis.

Glyphosate was detected in significant (meaning the concentration was high enough to potentially have a noticeable herbicidal effect) amounts on the composite sample collected, and relatively insignificant amounts near the property line and on foliage growing through the fence at the property line. A spot treatment application of Roundup Custom for Aquatic and Terrestrial Use was performed by Select Services on April 25, 2022 in the area. The glyphosate detection in the composite sample indicates that glyphosate was applied to one or more plants included in the composite sample. It is unlikely that all plants in the composite sample contained glyphosate, as many of the plants represented in the sample appeared healthy and lacked visual indications of a glyphosate application.



Figure 1: Backyard of 10376 Miners Gulch Ave, Las Vegas, NV 89135. From porch facing North

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Figure 2: Backyard of 10376 Miners Gulch Ave, Las Vegas, NV 89135. Facing west from middle of fence line



Figure 3: Plant with dead leaves and mechanical damage

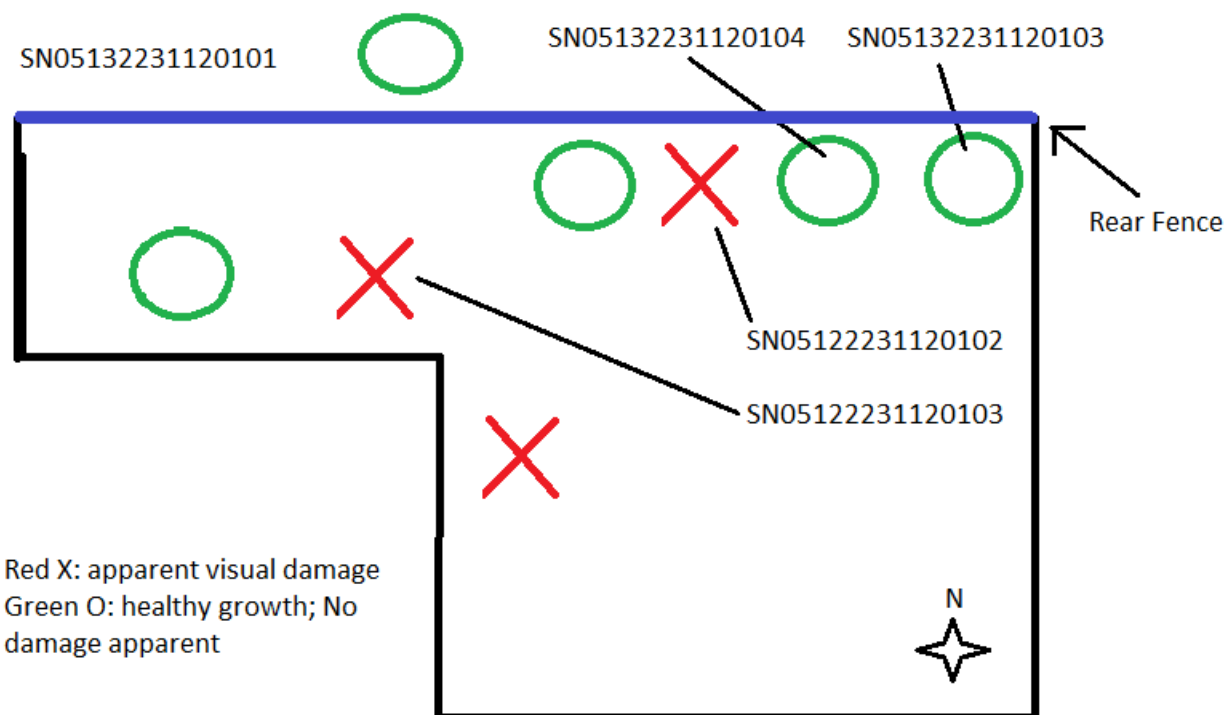


Figure 4: Sketch of backyard of 10376 Miners Gulch Ave depicting sample locations and apparent visual damage to landscape plants

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Figure 5: Results of analysis for samples collected from yard and 10376 Miners Gulch and surrounding landscaping