Purpose

This Standard Operating Procedure (SOP) describes how to achieve total target weed/pest/disease control with agrichemicals. Method of application can be vehicle mounted boom spray units, hose and gun units or knapsack. This is to ensure no detrimental effect to the applicators, public or the environment and to ensure non target plants are not damaged.

Scope

This SOP applies to Citycare employees working in Open Space Maintenance.

Tools, Equipment, and PPE

TOOLS AND EQUIPMENT USED IN THIS OPERATION INCLUDE:

- A knapsack sprayer, tank mounted sprayer (hose and gun), and `boom spray applications.
- Measuring apparatus (for chemicals).
- Basic hand tools for minor repairs.

APPROPRIATE PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT (PPE)

- A Respirator **MUST** be used when mixing or applying any agrichemical where the safety data sheet specifically states a respirator must be worn.
- For spraying using Glyphosate (or other herbicides where respiratory use is not specifically stated on the safety data sheet) that is conducted at below knee level using knapsack or ATV tank mounted sprayer (hose and gun) in open air environments, respirator use is not mandatory.
- Review the SDS and the label of the chemical you are applying, for the manufacturer's recommendations for minimum PPE requirements – this will include (but not limited to).
    - Safety Glasses or Goggles
    - PVC Gloves – mixing or where spray drift could contact the applicator.
    - Clothing which provides full coverage from neck to toe
    - Safety footwear.
    - Gumboots. Use gumboots where footwear could become saturated with spray mix.

TYPES OF RESPIRATORS APPROVED

- Reusable respirator half facepiece with organic vapour cartridges / GP2, nuisance* org vapour/acid gas-pair
- Disposable respirator 9913V, GP1, Nuisance Org Vap valved / Respirator 9913, GP1 Nuisance*Organic Vapour

The trained operator should be aware of all risks associated with the application of agrichemicals, having read and understood the Citycare Health, Safety, and Environmental plan.

As a user of herbicide, you will need to consider all aspects of safety, including.

- A Job Safety and Environmental Analysis (JSEA) or Take 5 must be completed.
- Safe transport and storage of chemicals.
- Mixing and application is done away from waterways/cesspits/drains or any other outlets that may lead to the stormwater network and in a safe area.
- You must be competent to operate spray equipment and understand the principles of calibration.
- You will need to read the herbicides labels and understand toxicity information including use/mix rates.
- You must be GROWSAFE certified or under the control of someone with GROWSAFE Certification.
- Safety Data Sheets (SDS) have to be readily accessible. This means that the document is capable of being accessed without difficulty in hard copy, electronic, or other form.

Procedure

WHO	WHAT, WHEN, WHERE, HOW
Contract Manager/ Client Services Coordinator	• Liaises with clients as necessary.
Contract Supervisor/ Foreman	• Programmed rounds for areas to be inspected considering weed growth, weather available resources, and scheduled completion dates. • Ensures chemicals are available. • Arranges round sheets and maps for areas to be sprayed including scheduling of electronic rounds where appropriate. • Arranges the distribution of letters to “No Spray” residents. • Allocates work to crews. • Ensures that work meets the Environmental, Health and Safety management system documentation which includes Risk Registers, SOPs, Factsheets, Toolbox Talks etc.
Crew	• **Check spraying equipment before use** - This should be done before leaving the yard and before spraying starts on site. - Check that the nozzle size and type is appropriate for the job, is working correctly and is clean. • If anything is worn or damaged it should be replaced. • **Determine an appropriate herbicide** - **Confirm chemicals are correct as per the work specification**. - Read SDS and label to confirm the chemical will be effective and to check use rates. If unsure of use rates or suitability, clarify this before commencing spraying. - **Review manufacturer’s recommendations for PPE and user requirements for the chemical being used.** - **Exposure monitoring results have confirmed that when knapsack or ATV tank mounted spraying using Glyphosate in an open air environment below knee level, the exposure to mists/vapours is below detectable levels measured against the exposure standard. For this reason, respirator use is not mandatory when Glyphosate spraying is completed under controls outlined in this procedure.** - Be aware that the use of certain herbicides may present a significant hazard to nearby people, crops, waterways, and desirable vegetation.
	• **Assess risk and suitability of weather conditions for spraying** - This includes possible exposure to public and target plants. - Herbicides should be used at a time that minimizes disruption and maximizes safety of the public. - Avoid spraying in undesirable weather conditions (when windy, when rain is forecast or where temperatures are greater than 28C with humidity less than 50%).
	• Put out signage indicating spraying is in progress - Signs should be placed at each approach to the work area. - If you are a mobile operation, then the sign needs to be on the vehicle.

WHO	WHAT, WHEN, WHERE, HOW
	• **Mix chemicals.** - Ensure safety glasses and gloves are worn while mixing chemicals. If mixing agrichemicals other than Glyphosate a respirator must be worn if indicated by the safety data sheet. - Follow the manufacturer's mixing recommendations and application rate as outlined on the label. - Because you are dealing with concentrated chemicals mixing is the most hazardous stage of the process, so take extreme care.
Crew	• **Undertake spraying.** - Ensure a respirator is worn when spraying agrichemicals other than glyphosate (or other herbicides where respiratory use is not specifically stated on the safety data sheet) within the conditions outlined in this procedure. - Keep track of the weather and if it changes then consider changing your method or stopping altogether if conditions become unfavorable (strong winds, rain etc) - Avoid damage to non-target plants. You can reduce this with low drift spray nozzles, lower pressure etc.
	• **Tidy up & Decontamination** - Clean equipment in a safe location where spills can be contained and will not result in harm to the environment. - Do not dispose of chemical and residual water into waterway, drains or storm water systems. - Check to see if left over spray mix can be used on another job before considering dumping left over tank mixes. - If you need to dump left over tank mixes do so ONLY in approved areas. (Check with supervisor if unsure where they are)
	• **Complete records** - Keep records of what was sprayed, date and time chemicals used, the method of application and the weather conditions at the time of spraying. - Hand records to supervisor once work is complete- this can be done electronically where teams are set to do so - Any spills or sudden leaks should be notified to your immediate supervisor followed by the completion of an incident report and an environmental incident report.
	• **Remove signage** - Refer to label or chemical date sheet for recommendations. Plants should be at least touch dry before removing signs

Additional Information

Spraying in areas of high pedestrian use

If agrichemicals are used in close proximity to schools, pre-schools, shopping areas and other high pedestrian traffic areas spraying is restricted to times outside those hours of high pedestrian use. For example, spraying should not be carried out near schools or in parks that are used as thoroughfares when children are moving to or from school or during break times when they are outside. Exact timings will vary dependent on the site.

At all other times staff need to look out for pedestrians moving through the area they are working in and suspend spraying activities until pedestrians have moved to a safe distance away.

References

- Refer to the relevant maintenance contract for any specific client requirements and technical specifications.
- NZ Standard for Management of Agrichemicals, NZS 8409:2021.
- WorkSafe - https://www.worksafe.govt.nz/topic-and-industry/hazardous-substances

Types of Respirators

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