ATTACHMENT	3-E: APPROVED HE	ERBICIDES AND A	APPLICATION PR	OCEDURES



## United States Department of the Interior Fish and Wildlife Service

Ecological Services
Carlsbad Fish and Wildlife Office
2730 Loker Avenue West
Carlsbad, California 92008



Mr. Tom Acuna Senior Land Planner Sempra Energy 101 Ash Street San Diego, CA 92101-3017

SEP 2 6 2000

RE: Comments on Sempra Energy's Herbicide List for San Diego Gas & Electric Operation and Maintenance

Dear Mr. Acuna:

This letter responds to your request, dated 8 August 2000, and received by our office 11 August 2000, for our review of 18 herbicide products San Diego Gas & Electric (SDG&E) proposes to use in their Vegetation Management Program. Specifically, herbicides will be sprayed where pole-brushing activities occurred earlier this year to help reduce pole-brushing efforts in 2001. In addition, herbicides will be used to keep vegetation away from facilities and other existing work areas.

We have reviewed the Sempra Energy Toxicology Report prepared by Ogden Engineering, dated 8 August 2000, that discusses the characteristics of the 18 herbicides proposed for use by SDG&E and offer the following precautions:

1. The following active ingredients raise concerns over aquatic toxicity and should not be used within 100 meters of surface waters:

dichlobenil
sethoxydim
simazine
trifluralin
oryzalin
diquat dibromide
diuron
triclopyr (ester formulations)
pendimethalin
oxyfluorfen

2. The following active ingredients are known groundwater contaminants and should not be used in areas where the groundwater is shallow and may surface in the vicinity, or in areas with human use of groundwater resources:

simazine
chlorsulfuron
trifluralin
diuron
triclopyr
tebuthiuron

- 3. Additional toxicity concerns have been raised regarding the following herbicides:
  - Simazine has been identified as a potential endocrine disruptor.
  - Chlorsulfuron has been identified as a potential developmental and reproductive toxin.
  - Diquat dibromide has been associated with avian impacts in areas receiving repeated applications.
  - Diuron has the potential to cause bird kills and has been shown to cause reproductive effects in rats.
  - Pendimethalin has the potential to cause bird kills.

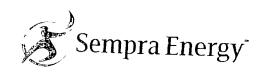
These herbicides are not recommended for use in areas occupied by sensitive species, particularly during the breeding season.

If you have any questions regarding this letter please contact Kathleen Brubaker at (760) 431-9440.

Sincerely,

Nancy Gilbert

Assistant Field Supervisor



November 10, 2000

Ms. Nancy Gilbert U.S. Fish & Wildlife Service 2730 Loker Avenue West Carlsbad, CA 92008

Re:

Implementation of USFWS Suggested Precautions in Herbicide Application for Polebrushing

Dear Ms. Gilbert:

Sempra Energy appreciates the suggested precautions for the application of herbicides offered in your September 26, 2000 letter. Sempra had previously provided your office with the Sempra Energy Toxicology Report, dated August 8, 2000 ("Toxicology Report") and the Sempra Energy Corporate Contractor Herbicide Application Protocol ("Application Protocol"). The Toxicology Report discusses the characteristics of 18 herbicides proposed for use by SDG&E, and the Application Protocol demonstrates the current institutional precautions which Sempra requires be used by its contractors prior to application of herbicides. It is our understanding that Service's suggested precautions were developed by Service toxicology staff without the benefit of having reviewed Sempra's current Application Protocol.

The purpose of this response is to provide the Service with assurances that the suggested precautions are addressed in Sempra's preapplication planning and Application Protocol. The protocols are tailored to assure that personal and public safety and protection of the environment are priorities in the application of necessary herbicides.

#### SDG&E Pole Brushing Program

SDG&E's pole brushing activities are fire prevention measures, required under Public Resources Code § 4292, to clear all vegetation to mineral soil within a 10-foot radius area around utility poles with equipment that can start fires. SDG&E has 24,000 poles that are required to be clear of ignitable vegetation 12 months each year. The year-round program consists of chemical pole brushing (October through March), and mechanical pole brushing (April through September). Pre-emergent, soil applied, herbicides are used during chemical pole brushing and

post-emergent, foliar applied, herbicides are applied during mechanical pole brushing. Herbicide application in all instances is conducted with hand held applicators to ensure that application is limited to target areas.

## Service's Concerns and Application Protocols

The Service suggested three categories of precautions for Sempra's application of particular herbicides: application within 100 meters of surface waters, application near shallow groundwater, and other toxicity concerns. Sempra stepwise method of preventing harm to wildlife and water sources included in the protocols reflects that these precautions are being undertaken in the current program. The review steps taken prior to application of herbicides include the following:

Prior to any activities in the field, Sempra's Land Planning and Natural Resource Department ("LPNR") screens the area of proposed herbicide application through Sempra's database of sensitive habitat resources (Application Protocol 4a). This database includes all rare plant locations known to SDG&E occurring within easements and fee owned properties. If rare plants are located in the proposed application area, the application area is removed from the herbicide application program — pole brushing is achieved in these areas by removal by hand.

If the screening process does not indicate the presence of rare plants, Sempra's Environmental Services Department ("ESD") provides the application location to the herbicide contractor. ESD requires that the herbicide contractor complete a physical and climactic target area evaluation form ("Evaluation Form") prior to application of herbicide (Application Protocol 4b). This form sets out sixteen predictors of sensitive habitat and the ability of localized application to spread to non-target areas. If the contractor positively identifies any of the indicators, herbicide application at that location is aborted by the contractor and ESD is notified. If the condition of concern is climatic (e.g. imminent rain), the application will be rescheduled. If the condition of concern is physical and if ESD determines that herbicide application in that area is absolutely necessary at that time — because of an imminent risk of fire, for example — ESD consults with LPNR prior to herbicide application. If LPNR concludes that herbicides should not be used, pole brushing will be achieved in that area by alternative methods, such as repetitive mechanical clearing.

If the Evaluation Form indicates that herbicide can be applied in application area, the contractor is required to follow Sempra's Application Protocols, discussed in detail below. Sempra believes that this multi-layered approach to protecting the environment addresses the Service's suggested precautions.

## 1. Service Precautions Regarding Application Within 100m of Surface Waters

Polebrushing activities and herbicide application in the vicinity of surface waters is rare, as most pole sites are located away from floodway areas which could be damaged in storms. The Application Protocols require multiple measures to prevent herbicides from presenting any threat

<sup>&</sup>lt;sup>1</sup> A copy of this form is enclosed with this letter.

of harm to surface waters. Review in the Evaluation Form requires consultation with LPNR where surface water or a well is present within 50 feet of the target area, or if the target area is within a dry streambed. Protocol 4c prohibits the direct application to surface waters and drainage channels, or within 50 feet of surface waters, including wetlands and dry streambeds. Protocol 4c also prohibits application to areas identified as mima mound and vernal pool areas (identified in the LPNR initial review). Protocol 4c prevents runoff and contamination of non-target areas by prohibiting application of herbicides during storm events, while the area is irrigated or when rain is imminent and on slopes steeper than 1:1 (vertical rise: horizontal distance). Application on slopes of steeper than 1:4 requires construction of a soil berm at the down-slope perimeter of the target areas. Finally, Protocol 4c restricts application in times of high wind in order to avoid chemical drift onto non-target areas.

A number of other Protocols address aquatic toxicity, though more indirectly. For example, Protocol 3 addresses the application amount and safe mixture of chemicals, while Protocol 4a requires minimization of chemical usage. Finally, of the ten (10) herbicides listed as presenting a potential aquatic toxicity threat, Sempra no longer uses four (4) of them at all (simazine, trifluralin, oryzalin, and diquat dibromide). The remaining six (6) herbicides used by Sempra are actually registered for aquatic use by the U.S. EPA at SDG&E's application concentrations. It is also noteworthy that foliar applied products cannot relocate and thus are less a concern for reaching nontarget areas.

## 2. <u>Service Concerns Regarding Application Near Shallow Groundwater</u>

Protocol 4c — described in detail above — is aimed at avoiding harming wildlife, aquatic wildlife and vegetation, avoiding chemical runoff, and avoiding contamination of non-target areas. In addition, the protocol specifically prohibits the application of herbicides where wells exist, even if abandoned and in wetland and streambed areas, which are indicative of shallow groundwater which may surface in the vicinity. Using these indicators of shallow groundwater, the Services precautions are incorporated into the existing protocols. Herbicide application is further prohibited anywhere outside the target area.

Of the six (6) herbicides listed by the Service as a groundwater concern, Sempra no longer uses two simazine and trifluralin. Of the remaining products, one is foliar applied (triclopyr) which should not raise a groundwater concern. Furthermore, Sempra does not apply these herbicides if landowners, homeowners, or land managers express perceived concerns of groundwater contamination.

### 3. <u>Service Concerns Regarding Toxicity</u>

The measures in the prescreening, Evaluation Form and Protocol 4c are designed to avoid harming sensitive species and habitat and to avoid chemical runoff and drift into non-targeted areas. These measures will be strictly adhered to by herbicide applicators, and should sufficiently protect natural resources from any potential negative effects. Additionally, chemical polebrushing occurs primarily during the fall and winter, which is outside the breeding season for most birds of concern. Finally, Sempra no longer uses two of the five herbicides identified by the Service as potentially presenting toxicity concerns — simazine and diquat dibromide. It is

our understanding that the manufacturer of chlorsulfuron, after extensive testing of the herbicide, concluded that is has no reproductive or developmental toxicity issues.

#### Conclusion

As evidenced by the program described above, Sempra shares the Service's concerns regarding the protection of the environment, natural resources, and human health from any adverse effects of herbicide application. Sempra's multi-layered approach to achieving this program will protect sensitive habitat areas, surface waters and wetlands, or groundwater from being impacted by herbicide application. It is our belief that these measures adequately address the suggested precautions delineated in the Service's letter dated September 26, 2000, and Sempra will continue to proceed with herbicide application under this program.

If you have any questions regarding the program, please contact the undersigned at your earliest convenience. Unless the Service indicates otherwise by November 17, 2000, Sempra will assume that its program as described in this letter and attachments is sufficient to address the Service's precautions.

Sincerely,

Thomas Acuna Senior Land Planner

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### SEMPRA ENERGY

## PHYSICAL AND CLIMATIC TARGET AREA EVALUATION FORM

DO NOT APPLY HERBICIDES TO TARGET AREAS WHERE "YES" IS CHECKED. IF THE TARGET AREA CHECKED "YES" IS CRITICAL TO FIRE PREVENTION, CALL LAND PLANNING AND NATURAL RESOURCES (619) 696-2392 AND SEMPRA ENVIRONMENTAL SERVICES AT (619) 696-4672 FOR SPRAYING PERMISSION.

	YES	NO ENVIRONMENTAL CONDITION ON TARGET AREA:
		OAI ETT AND HEALTH:
		Is the target area within an area where children or pets are playing? Is the target within an area where children or pets.
1	1 1	
		cautions, the Sempra Energy Approved Herbicide List restrictions, or regula
		restrictions prohibit or cautions it's use?
- 1	1	
2	1	If applying herbicides to target areas located where domesticated animals
2	- 1	graze, does the herbicide label application instructions, cautions, Sempra
- 1		Energy Approved Herbicide List restrictions, or the Department of Agriculture
	1	regulations prohibit or restrict it's use?  PHYSICAL:
F		le a surface with a surface su
3		Is a surface water body with water present (as measured from its bank, if any such as a creek, stream, river, lake, water to
		The state of the s
4		
_		Are there done
5	1	Are there dens or burrows in the target area and the date of spraying is
,  -		
6	1	Is the target area within a dry bed (including water-side banks) of a water bod
-		
7		Is the target area within 50 ft of a wellhead? (even if the well appears abandoned)
.		Is the application going to be applied to bare (unvegetated) areas of a target
3		
-		
		Is the target area within a field where agricultural crops or groves are grown (or immediately adjacent where gunoff can agree it.)
- 1		
		and the herbicide is inappropriate for application in such an area per label
		To the target area on landscaped groupds institut
1	1	
		The point which believes to the province of th
<b> </b>		
<b> </b>		Is the windspeed greater than or equal to 10 miles per hour?
		Today visibly drift off the farget area (o.g. mains it
-		
1	-	Is the target area within the contact area of an irrigation or sprinkler system that
}		contact area of an actively spraying or dispensing irrigation or sprinkler system?
ļ		y propage of dispensing irrigation or sprinkler system?
l		Is there active rainfall (more than mist or light rain) occurring where there is or will be runoff, or is such a rainfall immission to
		will be runoff, or is such a rainfall imminent during the application drying time?
		time?
		Is there visible ponding or standing water (indicating saturated ground) present in the target area?
		in the target area?
	1	For Foliar Application (Post-emergent application): Is it raining or is rain
	1	imminent?

#	Item:	11/06/00
1	Herbicide Selection	Detail:
	For each herbicide:	Use only herbicides on the Sempra Energy Approved List a according to any listed restrictions. From this list, use only the non-conflicting herbicides, herbicidal mixes, and dilutions which have been provided in the Pest Control Advisor's writt recommendations and product manufacturer's directions, an approved by the Utility's Vegetation Meritain
2	Contract Personnel Qualifications:	approved by the Utility's Vegetation Management Team.
	Contract Company:	<ol> <li>The contract application company must have a valid and current pest control business license.</li> <li>The office of the contracting company responsible for the supervision of the contract application of herbicides must have one or more persons in a supervisory position who holds a qualified applicator license with categories of herbicide applications supervised by that person.</li> <li>The contract application company must be registered in the county for the then current calendar year.</li> <li>The contracting company must have an effective, written injury and illness prevention program (IIPP) and other appropriate written environmental and safety programs.</li> <li>If the application is to be within the state of California, Operations must comply with California Code of Regulations Title 3 Division 6 and other relevant state or local regulations and ordinances. For other states or locales, Operations must comply with all national and applicable state and local regulations and ordinances. Call Sempra Energy Environmental Services at (619) 696-4672 for assistance.</li> </ol>
	' '	The supervisory person(s) must be familiar with the application sites, and at a minimum, routinely monitor the application of herbicides at sites under his/her responsibility.
Арр	C Ti er lo wi Se	the application is within the state of California, each field pplicator must have documented training pursuant to alifornia Code of Regulations Title 3 Section 6700 et al and itle 8, Section 5194 and other relevant state and local experimental and safety ordinances. For other states or cales, applicators must have documented training complying the all national, sate or local regulations and ordinances. Call empra Energy Environmental Services at (619) 696-4672 for sistance.

	Application Mixture: Application amount per	Uso application
	acre	Use application amount provided in Pest Control Advisor's written recommendations and product manufacturer's directions and approved by the Utility's Vegetation Management Team.
	Mixing:	Mix according to Pest Control Advisor's written recommendations, as approved by the Utility to A
4	Application Protocols:	Management Team, to achieve desired application rates.
4a.	Pre-Field Procedures:	
	3	1. Use only herbicides on the Sempra Energy Approved List From this list, use only the herbicides, herbicidal mixes, and dilutions which have been provided in the Pest Control Advisor's written recommendations and product manufacturer's directions, any more restrictive contractor application protocols or checklists, in accordance with any Sempra Energy Approved Herbicide List restrictions, and as approved by the Utility's Vegetation Management Team.  2. Target Areas for possible herbicide application must be pre-approved by the Utility Vegetation Management Team and Sempra Energy's Land Planning and Natural Resources Section.  Follow the Utility approved contract clauses and protocols for customer notification.
A) In	2.	Provide material safety data sheets (MSDS) for all crew hazardous material and herbicide inventories.  Provide all label instructions, Sempra Energy Approved Herbicide List and Pest Control Advisor recommendations. Provide hospital location information.  Maintain an up-to-date-set of the above information in each crew vehicle.
and	oplies 2.	Provide safe work practices and personal protective equipment (PPE) for hazards associated with work, and a means to clean and store PPE.  Provide emergency supplies to flush or treat injuries or hazardous material contact.

Mixing	11/06/00
be minimize impermeable pans to prev surface. Che equipped wit volume of the that each ver or the equiva	loading must be conducted prior to entering the ical transfer from one container to another should d but when necessary, should be conducted on an e surface such as a truck bed, drain pan, or drip ent spills or leaks from contaminating the ground eck that each vehicle loaded with chemicals is h Spill Kit(s), which is capable of containing the elargest container on the vehicle. Also, ensure nicle or crew has a hand-held wind velocity meter lent.
Plan to use the following the first term of the	ne minimal amount of chemical that is adequate s) at each location and minimize overlap of spray a spray nozzle designed to reduce drift. Follow s direction of use of spray equipment. For small c bottle) spray applications, spray only where do not over spray or over wet the area.
calibration/inspection:  Ensure spray prior to enterin Improperly fun and misapplica	equipment is calibrated and check all equipment g the field to ensure proper functioning.
Material Safety Data Sheets, Chemical Emergency Equipment  Provide splash face/eye protective equipment the means to cland cleaning m  Provide Materia to be used on the	protective clothing/footwear, headgear, etion, and specific chemical resistive gloves to oment/heat stress trained employees. Provide ean and/or dispose of protective equipment aterial after equipment use.  I Safety Data Sheets (MSDS) for all materials se job for each vehicle or crew. Provide /spill emergency wash supplies for each
4b. In-Field Initial Procedure: Prior to applying ANY 1. Use the Phys	ical and Climatic Target A
2. Check the we	ather daily before application. (Note: A
2. If applicable to the herbicide (print	the particular purpose and type of activity of parily for pre-emergent herbicides),

	Application Prohibitions:	
-		
	Procedures to avoid g	1. Do NOT allow herbicides to contact humans or domestic
	humans and domestic	animals. Do NOT apply to areas that they routinely conta
	animals	such as yards or pens except as allowed by label
		instructions and landowner consent.
		2. Do NOT allow barbigides to
		2. Do NOT allow herbicides to contact or drift onto food
	Procedures to avoid	crops, drinking water, or food or feed storage areas.
	harming wildlife and	o. Do NOT spidy helpicides directly on any wildlife
	valued vegetation	i i i i i i i i i i i i i i i i i i i
	valued vegetation	
		TO THE CONTROL THE WORK IT done as I.
		observed in a target area, observe the following
		restrictions:
		a. Use only products identified as non-toxic to birds and
	1	small mammals during the period March 1 through August 31.
		, luquot o t
- 1		3. If applying herbicides to target areas located where
		achiesticated allittals firaze apply the berbister of the
l		and propositions and propositions and
	· 1.	according to any Department of Agriculture as and or
	4	The spray helpicide of allow herbicide to drift and the
		the target area  Do NOT spray herbicides directly into roadside drainage
a	ar unoff 2. wa "ba Ne sid pro sui stre	channels unless the channel is part of a pole targt area and liver is no running or standing water. Apply only to the target rea of the dry drainage channel.  Do NOT apply within 50 feet of the edge of any surface after body when water is present (as measured from the ank," if a "bank" is present, to the edge of the target area). Ever apply directly to a surface water body or to the water before a bank of a surface water body. This direct application or or applies to the dry bed of a seasonal water body. A face water body includes:  * Any Waters of the US or California such as creeks, eams, rivers, lakes, or ocean.  * Any inter-tidal area, estuary, marsh or wetland  * Any natural drainage channels containing standing or ning water, or not a target area.  * Any irrigation ditches or storm drain inlets

	Procedures to avoid	3 Do not apply to \( \frac{1}{2} \)
	harming aquatic wildlif and valued vegetation and to avoid chemical runoff (Cont'd).	3. Do not apply to Vernal pool and mima mound complex areas as defined by Sempra Energy Land Planning and Natural Resources. Do not apply within 50 feet of any well head, including abandoned wells. Do not generally apply to impermeable ground surfaces such as granite or pavement, but use a spot application technique, just spraying actual or potential vegetation growth spots.
	i i	1. Do NOT apply if it is 'actively raining' (more than mist or light rain), being irrigated, or rain is imminent (within application drying time). Do NOT use herbicides until "storm event" or active irrigation has abated to avoid contaminating runoff. (A "storm event" is when rainfall is sufficient to cause runoff")  2. Do NOT apply if the target area soil has puddles or standing water. Do NOT apply until the soil becomes drier.  3. For FOLIAR (post-emergent) APPLICATIONS - Do NOT apply herbicide spray during rain or when rain is imminent.  4. Do NOT apply to any non-vegetated (bare) areas of a sloped target area with a slope steeper than 1ft:1ft (vertical rise: horizontal distance). For target areas with a slope greater than 1ft: 4ft but less than or equal to 1ft: 1ft, construct a 4-6-inch mineral soil berm outside the down slope half-circle perimeter prior to spraying any part of the targeted area.  5. Do NOT lay applicator wand on the ground or leave it in attended.
4d.	Procedures to avoid chemical drift onto non-target areas:  greating files of the process of the	Do NOT apply herbicides when wind velocity exceeds 10 apph as measured at chest height (approximately 5 ft from round surface). Use handheld wind velocity meter and ecord the wind velocity on your daily pesticide application apport. If you observe the spray being carried sideways or pating up, or off the target area, STOP spraying and revaluate wind conditions. Do NOT spray herbicides at this cation until the condition causing drift has abated. Set pressure gages prior to applying herbicides. Use the essure range recommended by the manufacturer of the ecific spray nozzle but DO NOT exceed 40 psi. Apply the herbicides at a designated height above the soil face recommended by the manufacturer of the specific ezzle used but DO NOT EXCEED 18" maximum.
	application checks : Ene add Rec	bly herbicides ONLY when the accompanying Sempra ergy Physical and Climate Target Area Evaluation and any litional contractor site evaluation checks are acceptable. Ford any prohibited areas and adverse conditions

	D	11/06/00
	Procedures to avoi	d 1. Do NOT scatter or stack brushed vegetation or chipped waste in any surface water body instruction
	additional	waste in any surface water by
	environmental impa	waste in any surface water body, including storm drains,
		as soon as possible from the site.
		2. DO NOT fuel clean or maintain
		within 100 ft of any water body. Any maintenance performed in the field should be minimized bytes.
		in the field should be minimized but when necessary, should be conducted on an impermeable surface.
		be conducted on an impermeable surface and
i		be conducted on an impermeable surface such as a truck bed, drain pan, or drip pans to prevent spills or leaks from
		contaminating the ground ourfees. All are
- 1		contaminating the ground surface. All solid waste and rubbish should be removed from each location.
- 1		3 Avoid tracking and I for
- 1		3. Avoid tracking mud from vehicles or equipment when re-
		entering paved public roadways from off-road, whenever possible. If sediment soil is treated to
	·	possible. If sediment soil is tracked onto a paved roadway, use a shovel or broom to sweep it up and a shovel or broom to sweep it up and a shovel or broom to sweep it up and a shovel or broom to sweep it up and a shovel or broom to sweep it up and a showledge.
		use a shovel or broom to sweep it up prior to leaving the
l		location or at the end of the workday. Swept materials should be disposed into a vegetated area poorty.
		be disposed into a vegetated area nearby and not into
		1. NEVEN UUIIII ANV AVCACC pootioid
- 1	1	
-	1	sewers or use on non-targeted areas. Excess materials and
<u> </u>		empty containers must be returned to the
	5 Post-Application	empty containers must be returned to the contractor's yard.
-	Protocols:	
	Protocol for disposing	Chronital
-	of any water used to	Spray tanks to be cleaned at the end of the day must be cleaned in the employer's yard. Da North day must be
	clean application	cleaned in the employer's yard. Do NOT drain wash water
1	equipment	
-		must be reused. All wash waters
	Protocol for unused herbicides	Storage and disposal should be handled according to the
1	rierbicides	manufacturer's label. Unused herbicide spray must be used
		appropriately at another appropriate to
l		returned to your employer's yard for recycling. Again, NEVER
1	1	
		materials and empty containers must be returned to the contractor's yard.
	Post-application report	1
	form	Fill out all required forms describing application performed for each site
		cach site

6 Environmental Acc For responding to a Spill	Apply an absorbent material, wait for 5-10 minutes, then sweep or shovel material along with affected media (soil, paper, wood) into a hazardous material holding container (drum or bag). Do NOT wash with water. Properly label the container with name of pesticide, toxicity category, name of manufacturer, and manufacturer phone number. Call Utility emergency contacts:  And Sempra Energy Hazardous Waste Management (619)
For Spray application t prohibited areas:	Report any accidental spray of any prohibited physical features or wildlife immediately to your supervisor. The supervisor should report any incident to SDG&E Vegetation Control management as soon as feasible but no later than 24 hours from discovery.