

# **Burrowing Owl Population Research Field Report**

## **Brown Field Municipal Airport**

1424 Continental Street  
Otay Mesa, San Diego, CA 92154  
619-424-0455

Otay Mesa  
San Diego - California



**December 17, 2012**

### **Principal Investigator**

**Jesse N. Marquez**  
jnmarquez@att.net

### **Sponsor**

Coalition For A Safe Environment  
1601 B North Wilmington Blvd.  
Wilmington, California 90744  
www.cfase.org 310-704-1265

# **Coalition For A Safe Environment**

## **Research Field Team**

<b>Principal Investigator/Report Author:</b>	<b>Jesse N. Marquez</b>
<b>Burrowing Owl Counter:</b>	<b>Dr. Nadia Kim Ph.D.</b>
<b>Photographers:</b>	<b>Jesse N. Marquez Alejandro N. Marquez Danilo P. Marquez</b>
<b>Videographers:</b>	<b>Alejandro N. Marquez Danilo P. Marquez Jesse N. Marquez</b>
<b>Film Editor:</b>	<b>Alejandro N. Marquez</b>
<b>GPS Mapping:</b>	<b>Flavio Mercado</b>

## **Brown Field Municipal Airport**

### **Research Project Team Field Visit Dates**

**July 6, 2011**

**February 11, 2012**

**March 3, 2012**

**April 28, 2012**

**May 1, 2012**

# Coalition For A Safe Environment

## Field Team



**Jesse N. Marquez**



**Dr. Nadia Kim, Ph.D.**



**Flavio Mercado**



**Alejandro N. Marquez**



**Danilo P. Marquez**



**Field Team In Action West Airport Area**

## **Burrowing Owl Population Research Project Purpose**

The purpose of the Burrowing Owl Population Research Project was to document, photograph and film the Burrowing Owl population living at the Brown Field Municipal Airport. The reason for the project was due to a proposed airport redevelopment project which could destroy the Burrowing Owl Colony and their habitats.

Although the Burrowing Owl is not listed as an endangered species it is classified as a Bird of Concern. The reason for this classification is due to the rapidly disappearance of habitats due to human development. The reason for the Coalition For A Safe Environment involvement was our concern that the Burrowing Owl is now near extinct in Otay Mesa and the City of San Diego. San Diego members of CFASE also requested that we intervene to protect the Burrowing Owl and conduct our own independent research studies.

This field study was given a priority by the Coalition For A Safe Environment due to the fact that there is very limited documentation that there is a large and growing Burrowing Owl Colony located at Brown Field Municipal Airport in Otay Mesa. This is significant because we suspect that there may have been an intentional effort on the part of the airport management to not disclose this information to the public and governmental regulatory agencies, so as not to delay or stop any proposed current airport redevelopment project.

This field study was conducted as a preliminary field study to encourage a more comprehensive, accurate and complete biological study. The field study was also conducted to provide evidence of any errors, omissions and inaccuracies of biological studies contracted by the City of San Diego and the developer. The study was further conducted to assure that the Environmental Impact Report would accurately report all information regarding the Burrowing Owl and its habitats. The field study was also conducted to provide new or additional information of any illegal activities impacting the Burrowing Owl population at Brown Field Airport which might take place during the Environmental Impact Report preparation, public comment periods and final Environmental Impact Report certification and project approval.

The California Environmental Quality Act requires that all wildlife species be documented in an Environmental Impact Report for a project and all negative impacts be mitigated.

## **Project Goals**

1. Count the number of Burrowing Owls on site at Brown Field Airport.
2. Count the number of habitats on site at Brown Field Airport.
3. Study the habitats and document interesting findings.
4. Photograph all Burrowing Owls and Habitat sited.
5. Photograph some of the other wildlife at their airport.
6. Photograph the entire airport facility.
7. Prepare a field report.
8. Report our Burrowing Owl findings to the City of San Diego.
9. Report to appropriate state and federal governmental agencies any suspicious or illegal activity.

## **Project Objectives**

1. Document and count the number of Burrowing Owls at every location sited.
2. Documents and count the number of Burrowing Owl Habitats at every location sited.
3. Documents and count the number of Burrow Nests at every location sited.
4. Photograph all Burrowing Owls at every location sited.
5. Photograph all Burrowing Owl Habitats with owls present.
6. Photograph all Burrowing Owl Burrow Nest locations.
7. Photograph all suspected Burrowing Owl Burrow Nest locations.
8. Photograph any food resources found near Burrow Nests.
9. Photograph the entire airport facility building areas and adjacent land areas to airfields.
10. CFASE submitted Public Comments to the City of San Diego–Otay Mesa Community Plan Update disclosing that there was a Burrowing Owl population at the Brown field Airport.
11. CFASE reported the findings of the large Burrowing Owl population disappearance and poisoning to the California Fish & Game and the US Fish & Wildlife agencies.

## **Goals & Objectives**

The Coalition For A Safe Environment achieved and completed all of its goals and objectives. We were able to identify Burrowing Owls, identify their habitats, burrow nests, types of food and take accurate counts during our visit time periods. We surveyed the north, east, west and south areas of Brown Field Airport both on-site and off-site.

CFASE took over 1,000 high definition digital color photographs of the Burrowing Owls, their habitats, burrow nests, food types and the Brown Field Airport. We additionally took over 1 hour of digital high definition film footage.

CFASE created multiple GIS maps of all Burrowing Owl locations, their counts, their habitat locations and burrow nest locations.

CFASE submitted written public comments to the City of San Diego–Otay Mesa Community Plan Update disclosing that there was a Burrowing Owl population at the Brown field Airport. CFASE testified before the City of San Diego Planning Commission requesting that they not approve the City of San Diego–Otay Mesa Community Plan Update due to the numerous Burrowing Owl impact issues we identified, errors and omissions and the documents failure to comply with numerous city and county plans and other requirements.

CFASE contacted the California Fish & Game and the US Fish & Wildlife agencies and reported the poisoning of the Burrowing Owls Nest Habitats, submitted some documentation and photographs. It is our opinion that both agencies failed to take any precautionary actions that would further protect the Burrowing Owl. The least they could have done was request a new 2012 Burrowing Owl count to validate our reporting of the significant disappearance of the owls.

## **Field Research Findings**

Our research field team counted a total of 23 Burrowing Owls living on-site at the Brown Field Municipal Airport within the fenced perimeter. All of the Burrowing Owls that we counted were located on the South end of the airport. Eleven (11) owls were counted living at the three helicopter pads, eleven (11) owls were counted in the Southwest area of the airport and one (1) was counted in the Southeast area of the airport. GPS maps have been prepared showing the Burrowing Owl locations and distribution for each site visit. Digital photographs were taken of every sited Burrowing Owl location and habitat location.

On the North helicopter pad on one visit we photographed of seven (7) Burrowing Owls together which appeared to be family cluster. This appeared to be 2 (two) generations of owlets living with their parents or at least associating near their parents and the young owlets burrow nest at the North helicopter pad.

In other noteworthy photographs we have a mother, father and three owlets together near a drain pipe and ditch area. In two other areas we saw two mated owls together, one north of the North helicopter pad and another mated pair in a dirt burrow near a fire hydrant on the South West end of the airport.

Young Burrowing Owls can be distinguished from adults because the majority of the underside belly area has predominantly white feather plumage.

## **Illegal Activity Finding**

On March 3, 2012 we were shocked to find that there were no Burrowing Owls visible at the Helicopter Pads and discovered that the burrow nests under the Helo Pads had been filled with what appeared to be water. Some appeared to be relatively full, others partially filled and others appeared to be still wet but the water had seeped into the ground. Upon closer examination we detected a chemical smell that seemed like it contained a chemical pesticide or herbicide. We photographed the burrows filled and not-filled with the water substance as evidence.

When we walked around and surveyed the area there was no other ground area nearby wet. Our first thought would be if they recently had sprayed the area then the entire area should be wet and have signs of moisture on the ground. We photographed the area as proof that the ground was not wet.

We did see several sets of tire tracks leading from the dirt road to the south heading up to the helicopter pads. It appeared that one set of tire track were from a truck with a double wheel rear axle, meaning four rear tires. We photographed the tire tracks which were obvious from the dirt road, through the grass up to the rock area surrounding the Helo pads.

We walked around and surveyed the entire area and discovered a truck with a tanker container filled with a liquid which we assumed to be a pesticide or herbicide, with a field spraying attachment and a small ATV 4-wheeled vehicle with a similar apparatus attached approximately 100' away parked to the west along the fence. Tucked behind the truck license plate which was located higher up from the traditional bumper location was a brochure that displayed the name DuPont Krovar. At the time we did not know what this chemical was. We also noticed that this truck had a double rear axle with four tires which matched the tracks near the Helo pads. We photographed the brochure as seen and found. We also photographed the tanker truck, the rear tires and ATV vehicle.

Since we were not experienced at this time for taking water samples for testing we did our best and filled plastic water bottles in order to have them analyzed at a test lab.

About this same time we discovered that there was another interested party in saving the Burrowing Owl who discussed with us their basic observations and experience with test laboratories. They arranged to have some water samples taken on March 10, 2012. They advised us that they would provide us their test results which we have included in our report.

On April 28, 2012 we returned and discovered that the Burrow Nests at the Helo pads had once again been filled with a watery liquid with a chemical smell. We once again photographed the Burrow Nest Holes and photographed the entire area. However, this time we did not see any tanker truck or ATV in the area. We did not take any water samples. We visited our previous locations, took some photographs and counted only three (3) Burrowing Owls.

Concerned about our inexperience in taking water samples we decided that on Monday we would call the California Department of Toxic Substance Control (DTSC) for advice. We discussed our need for a laboratory that would be capable of testing for Bromacil and Diuron the two key herbicide chemicals in DuPont Krovar. DTSC advise us that we should contact Weck Laboratories, discuss our findings and test needs with them. After a telephone conversation with Weck Laboratories they recommended that we should come to their lab for a discussion on the proper procedures, methods and equipment for taking water samples. So we went on Tuesday May 1, 2012.

We were instructed by Weck Laboratories on the proper procedures, methods, protocol and equipment for taking water samples. Weck Laboratories provided us with an ice chest, glass bottles and ice packs. We purchased all the other equipment in order to collect the water sample and seal the water bottles.

So we returned on May 1, 2012 to Brown Field Airport to obtain new water samples. We took three water samples from three different Helo pads. We photographed and filmed every step we took in obtaining the water samples.

We walked around and surveyed all the previous locations we had visited and did not see any Burrowing Owls. This left us devastated, but determined to continue documenting our research and findings.

As of May 1, 2012 the CFASE field team has not seen any Burrowing Owls at the Helicopter pads.

We have also discovered during the course of our visits that some of the burrow nest holes have been intentionally filled with rock gravel and we have photographed them for our records and included them in this report.

CFASE reported the findings of the Burrowing Owl poisoning to the California Fish & Game and the US Fish & Wildlife agencies. Unfortunately each agency had little interest unless we had evidence catching the airport staff or a contractor in the act of filling a burrow hole or placing a poisoning chemical in the holes.

Had the two governmental agencies taken at least a more preventative action it is possible more Burrowing Owls might be alive today. At the least, they could have



advised the City of San Diego and the Brown Field Airport management that their suspected illegal take of the Burrowing Owl had been reported to them and that preliminary evidence had been taken.

## **CFASE Takes Water Samples For Lab Testing**

Samples of water mixed with herbicide were taken on three different dates and sent to test labs. The first two samples were taken to Cal Tech Environmental Laboratories and tested for common herbicides and pesticides each of the test results were non-detected for Dupont Krovar. We discussed this with several people with chemical and biological experience and they mentioned that it was possible that the lab we were using might not be capable of testing for the specific chemicals we wish to document.

Upon a second review of the test results CFASE discovered that Cal Tech Environmental Laboratories did not have the test equipment to test for the two chemicals in Krovar IDF - Bromacil and Diuron.

CFASE called the California Department of Toxic Substances Control (DTSC) for a recommendation for an appropriate laboratory that would be capable of testing for Bromacil and Diuron. DTSC recommended Weck Laboratories and CFASE called Weck Laboratories to confirm that they had the equipment and test procedure protocol to test for Bromacil and Diuron.

CFASE delivered three (3) samples taken from three (3) different helicopter pads to Weck Laboratories who conducted their tests which revealed that the water did indeed contain high concentrations of both Bromacil and Diuron. See attachments A-C.

# Brown Field Airport

## Burrowing Owl Photographs

### Food Resources Found Near Burrow Entrances



**Mice & Beetles Were Found In Front Of Burrow Nest Entrances**

# Brown Field Airport

## Burrowing Owl Photographs

### Owl Burrow That Have Intentionally Been Filled With Gravel



# Brown Field Airport

## Burrowing Owl Photographs taken

July 6, 2011

### Burrowing Owls Photographed At 6 Different Locations



**Brown Field Airport**

**Burrowing Owl Photographs Taken**

**February 11, 2012**

**Burrowing Owls Photographed At 6 Different Locations**



## **Brown Field Airport**

### **Burrowing Owl Photographs Taken**

**March 3, 2012**

#### **Burrowing Owls Photographed At 4 Different Locations**

**One Burrowing Owl Was Photographed With A Green Band On Its Leg**



# Burrowing Owl Burrows Poisoning Evidence Photographs



**Tire Tracks Leading To Helicopter Pads South View from South Pad 3-3-2012**



**Tanker Truck & ATV Tank Filled With Liquid Herbicide 3-3-2012**



**DuPont Krovor IDF Herbicide Data Sheet On License Plate 3-3-2012**



**Close Up Of Burrow Nest Filled With Water & Toxic Herbicide**



**North Helicopter Pad With Owl Burrow Filled With Toxic Water**



**East Helicopter Pad With Owl Burrow Filled With Toxic Water**



**Brown Field Airport  
Otay Mesa  
Burrowing Owl Photographs**

**April 28, 2012**

**Large Population of Burrowing Owls Not Found On Site  
Burrow Nests Found Filled With Water & Toxic Herbicide**

**1<sup>st</sup> Time**



**Only One Burrowing Owl Seen At Helicopter Pads On 4-28-12**



**One Of Two Owls Seen In Western Part Of Airport 4-28-12**



**One Of Two Owls Seen In South West Area Of Airport 4-28-12**



**North Helicopter Pad With Owl Burrow Filled With Toxic Water 4-28-2012**



**Close Up Of Burrow Filled With Water & Toxic Herbicide 4-28-2012**



**East Helicopter Pad With Owl Burrow Filled With Toxic Water 4-28-2012**



**Close Up Of Burrow Nest Filled With Water & Toxic Herbicide 4-28-2012**



**West Helicopter Pad With Owl Burrow Filled With Toxic Water 4-28-2012**



**Close Up Of Burrow Filled With Water & Toxic Herbicide 4-28-2012**

**Brown Field Airport  
Otay Mesa  
Burrowing Owl Photographs**

**May 1, 2012**

**Large Population of Burrowing Owls Not Found On Site  
Burrow Nests Found Filled With Water & Toxic Herbicide**

**2<sup>nd</sup> Time**



**Jesse N. Marquez Taking North Helo Pad Water Sample For Lab Testing 5-1-2012**



**Sealing North Helo Pad Water Sample # 1 On-Site 5-1-2012**



**Jesse N. Marquez Taking East Helo Pad Water Sample For Lab Testing 5-1-2012**



**Sealing East Helo Pad Water Sample # 2 On-Site 5-1-2012**





**Jesse N. Marquez Taking South Helo Pad Water Sample For Lab Testing 5-1-2012**



**Sealing & Identifying South Helo Pad Water Sample # 3 On-Site 5-1-2012**



**Placing The Water Samples In An Ice Chest For Transport To Lab 5-1-2012**



**Water Samples Delivered To Weck Laboratories, Inc. For Testing 5-1-2012**

## **Attachment - A**

### **Laboratory Water Sample Test Results Summary**

#### **#1 Samples Taken 3-3-12 Tested By Cal Tech Environmental Laboratories**

Tested For 12 Herbicide Chemicals – Test methods used could not detect Dupont Krovar  
( Bromacil & Diuron )

1-Sample submitted.

#### **#2 Samples Taken 3-10-12 Tested By Cal Tech Environmental Laboratories**

Tested For 12 Herbicide Chemicals – Test methods used could not detect Dupont Krovar  
( Bromacil & Diuron )

Tested For 22 Pesticide Chemicals – Test methods used could not detect Dupont Krovar  
( Bromacil & Diuron )

2-Samples submitted.

#### **# 3 Samples Taken 5-1-12 Tested By Weck Laboratories**

Tested for 2 Specific Herbicide Chemicals Bromacil & Diuron ( DuPoant Krovar )

Note: Special test equipment was necessary to test for these two chemicals.

Results – Tests show Bromacil & Diuron detected in all 3 samples submitted for testing.

3-Samples submitted.

## **Attachment - B**

### **Cal Tech Environmental Laboratories**

- 1. Analytical Results Sample # 1 1203-072-1 & 1203-072-2**
- 2. Analytical Results Sample # 2 1205-019-1**

## **Attachment – C**

### **Weck Laboratories Documentation**

- 1. Chain of Custody Record**
- 2. Certificate of Analysis**
- 3. Analytical Report for Samples**
- 4. Sample # 1 Lab Report # 2E01071-01**
- 5. Sample # 2 Lab Report # 2E01071-02**
- 6. Sample # 3 Lab Report # 2E01071-03**
- 7. Quality Control Section**
- 8. Certificate of NELAP Accreditation**
- 9. California State Environmental Laboratory Accreditation**

**Attachment - D**

**Dupont**

**Material Safety Data Sheet**

**DuPont Krovar IDF Herbicide**

**Trade Name – DPX-M2574**

## **Attachment - B**

### **Cal Tech Environmental Laboratories**

**1. Analytical Results Sample # 1 1203-072-1 & 1203-072-2**

**2. Analytical Results Sample # 2 1205-019-1**

**CTEL Project No:** CT-1203072  
**Client Name:** Coalition For A Safe Environment  
 1601 N. Wilmington Blvd.  
 Wilmington, CA 90744  
**Attention:** Mr. Jesse N. Marquez

**Phone:** (310) 704-1265  
**Fax:** (310) 834-1128

**Project ID:**  
**Project Name:** Brown Field Municipal Airport

**Date Sampled:** 03/03/12 @ 13:42 p.m.  
**Date Received:** 03/08/12 @ 09:40 am  
**Date Analyzed:** 03/13/12

**Matrix:** Water

Method: (8151A, Herbicides by GC)

<b>Laboratory ID:</b>	1203-072-1	1203-072-2
<b>Client Sample ID:</b>	03-03-12-001	03-03-12-002
<b>Dilution</b>	1	1

			<b>Method</b>	<b>Units:</b>	<b>Detection Limit</b>
2,4,5-T	ND	ND	EPA 8151A	ug/L	0.1
2,4-DB	ND	ND	EPA 8151A	ug/L	0.5
2,4-D	ND	ND	EPA 8151A	ug/L	0.1
Dalapon	ND	ND	EPA 8151A	ug/L	0.1
Dicamba	ND	ND	EPA 8151A	ug/L	0.1
Dichloroprop	ND	ND	EPA 8151A	ug/L	0.1
Dinoseb	ND	ND	EPA 8151A	ug/L	0.1
MCPA	ND	ND	EPA 8151A	ug/L	5.0
MCPP	ND	ND	EPA 8151A	ug/L	5.0
4-Nitrophenol	ND	ND	EPA 8151A	ug/L	0.5
Pentachlorophenol	ND	ND	EPA 8151A	ug/L	0.1
Silvex	ND	ND	EPA 8151A	ug/L	0.1

ND = Not Detected at the indicated Detection Limit

  
 Greg Tejirian  
 Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424



# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue. Paramount, CA 90723-3146  
Telephone: (562) 272-2700 Fax: (562) 272-2789

## ANALYTICAL RESULTS\*

CTEL Project No: CT-1205019

Client Name:

Phone:(800) 334-2286

Fax: (310) 763-9076

Attention:

Project ID:

Project Name: Brown Field Municipal Airport

Date Sampled: 03/10/12 @ 15:00 p.m.

Matrix: Water

Date Received: 05/02/12 @ 14:30 p.m.

Date Analyzed 05/04/12

Laboratory ID: 1205-019-1  
Client Sample ID: 03-10-12-001  
Dilution 1

		Method	Units:	Detection Limit
4,4'-DDD	ND	EPA 8081A	ug/L	0.05
4,4'-DDE	ND	EPA 8081A	ug/L	0.05
4,4'-DDT	ND	EPA 8081A	ug/L	0.05
Aldrin	ND	EPA 8081A	ug/L	0.05
alpha-BHC	ND	EPA 8081A	ug/L	0.05
alpha-Chlordane	ND	EPA 8081A	ug/L	0.05
beta-BHC	ND	EPA 8081A	ug/L	0.05
Chlordane	ND	EPA 8081A	ug/L	0.5
delta-BHC	ND	EPA 8081A	ug/L	0.05
Dieldrin	ND	EPA 8081A	ug/L	0.05
Endosulfan I	ND	EPA 8081A	ug/L	0.05
Endosulfan II	ND	EPA 8081A	ug/L	0.05
Endosulfan sulfate	ND	EPA 8081A	ug/L	0.05
Endrin	ND	EPA 8081A	ug/L	0.05
Endrin aldehyde	ND	EPA 8081A	ug/L	0.05
Endrin ketone	ND	EPA 8081A	ug/L	0.05
gamma-BHC	ND	EPA 8081A	ug/L	0.05
gamma-Chlordane	ND	EPA 8081A	ug/L	0.05
Heptachlor	ND	EPA 8081A	ug/L	0.05
Heptachlore epoxide	ND	EPA 8081A	ug/L	0.05
Methoxychlor	ND	EPA 8081A	ug/L	0.05
Toxaphene	ND	EPA 8081A	ug/L	2.0

ND = Not Detected at the indicated Detection Limit

CTEL Project No: CT-1205019

Client Name:

Phone:(800) 334-2286

Fax: (310) 763-9076

Attention:

Project ID:

Project Name: Brown Field Municipal Airport

Date Sampled: 03/10/12 @ 15:00 p.m.

Date Received: 05/02/12 @ 14:30 p.m.

Date Analyzed: 05/04/12

Matrix: Water

Method: (8151A, Herbicides by GC)

Laboratory ID:

1205-019-1

Client Sample ID:

03-10-12-001

Dilution

1

Method

Units:

Detection  
Limit

2,4,5-T	ND	EPA 8151A	ug/L	0.1
2,4-DB	ND	EPA 8151A	ug/L	0.5
2,4-D	ND	EPA 8151A	ug/L	0.1
Dalapon	ND	EPA 8151A	ug/L	0.1
Dicamba	ND	EPA 8151A	ug/L	0.1
Dichloroprop	ND	EPA 8151A	ug/L	0.1
Dinoseb	ND	EPA 8151A	ug/L	0.1
MCPA	ND	EPA 8151A	ug/L	5.0
MCPP	ND	EPA 8151A	ug/L	5.0
4-Nitrophenol	ND	EPA 8151A	ug/L	0.5
Pentachlorophenol	ND	EPA 8151A	ug/L	0.1
Silvex	ND	EPA 8151A	ug/L	0.1

ND = Not Detected at the indicated Detection Limit

Greg Tejirian  
Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424

## **Attachment – C**

### **Weck Laboratories Documentation**

- 1. Chain of Custody Record**
- 2. Certificate of Analysis**
- 3. Analytical Report for Samples**
- 4. Sample # 1 Lab Report # 2E01071-01**
- 5. Sample # 2 Lab Report # 2E01071-02**
- 6. Sample # 3 Lab Report # 2E01071-03**
- 7. Quality Control Section**
- 8. Certificate of NELAP Accreditation**
- 9. California State Environmental Laboratory Accreditation**



**Weck Laboratories, Inc.**  
 Analytical Laboratory Services • Since 1964  
 14859 East Clark Avenue • Industry, CA 91745  
 Tel 626-336-2139 • Fax 626-336-2634 • www.wecklabs.com

# CHAIN OF CUSTODY RECORD

Page 1 Of 1  
 2601071

CLIENT NAME:		PROJECT:		ANALYSIS REQUESTED		SPECIAL HANDLING	
COALITION FOR A SAFE ENVIRONMENT		BARRROWING OWL		BROWN FIELD AIRPORT		<input type="checkbox"/> Same Day Rush 150% <input type="checkbox"/> 24 Hour Rush 100% <input type="checkbox"/> 48 - 72 Hour Rush 75% <input checked="" type="checkbox"/> 4 - 5 Day Rush 30% <input type="checkbox"/> Rush Extraction 50% <input type="checkbox"/> 10 - 15 Business Days <input type="checkbox"/> QA/QC Package Charges Will Apply For Weekends And Holidays Method of Shipment _____	
ADDRESS: 1601 N. WILMINGTON BLVD., WILMINGTON, CA 90744		PHONE #: 310-704-1265 FAX #: 310-834-1128 E MAIL: JNMARQUEZ@PRODIGY.NET		Bromacil 525 Duron 6032			
PROJECT MANAGER: JESSE N. MARQUEZ		SAMPLER: JESSE N. MARQUEZ					
ID#	DATE SAMPLED	TIME SAMPLED	SMPL TYPE	SAMPLE IDENTIFICATION/SITE LOCATION	# OF CONT.	COMMENTS	
	5-1-12	11:25	GW	BROWN FIELD MUNICIPAL AIRPORT HELICOPTER PAD NORTH #1	1	DUPLICATE KROVAN IVE	
	5-1-12	11:30	GW	BROWN FIELD MUNICIPAL AIRPORT HELICOPTER PAD EAST #2	1	DUPLICATE KROVAN IVE	
	5-1-12	11:35	GW	BROWN FIELD MUNICIPAL AIRPORT HELICOPTER PAD SOUTH #3	1	DUPLICATE KROVAN IVE	
RECEIVED BY: <u>Jesse N Marquez</u> DATE/TIME: <u>5-1-2012 4:41 PM</u> SIGNATURE: <u>Jesse N Marquez</u> PRINT NAME: <u>JESSE N. MARQUEZ</u> RECEIVED BY: <u>Jesse N Marquez</u> DATE/TIME: <u>5/1/12</u> SIGNATURE: <u>Jesse N Marquez</u> PRINT NAME: <u>JESSE N. MARQUEZ</u> RECEIVED BY: _____ DATE/TIME: _____ SIGNATURE: _____ PRINT NAME: _____ RECEIVED BY: _____ DATE/TIME: _____ SIGNATURE: _____ PRINT NAME: _____							
RELINQUISHED BY: _____ SIGNATURE: _____ PRINT NAME: _____ _____ SIGNATURE: _____ PRINT NAME: _____ _____ SIGNATURE: _____ PRINT NAME: _____				SAMPLE CONDITION: <u>4.0°C</u> Actual Temperature: _____ Received On Ice _____ Preserved _____ Evidence Seals Present Y <u>(initials)</u> Container Attacked _____ Preserved at Lab Y <u>(initials)</u>			
SAMPLE TYPE CODE: AQ= Aqueous NA= Non Aqueous SL= Sludge DW= Drinking Water WW= Waste Water RW= Rain Water GW= Ground Water SO= Soil SW= Solid Waste OL= Oil OT= Other Matrix							
PRESCHEDULED RUSH ANALYSES WILL TAKE PRIORITY OVER UNSCHEDULED RUSH REQUESTS. CLIENT AGREES TO TERMS AND CONDITIONS (SEE BACK OF THIS FORM). SPECIAL REQUIREMENTS / BILLING INFORMATION DISTRIBUTION: WHITE & CANARY - For Laboratory PINK - For Client							

2601071  
 5/1/12



**CERTIFICATE OF ANALYSIS**

<b>Client:</b> Coalition for a Safe Environment 1601 N. Wilmington Blvd. Wilmington CA, 90744	<b>Report Date:</b> 05/10/12 11:06
<b>Attention:</b> Jesse Marquez	<b>Received Date:</b> 05/01/12 16:41
<b>Phone:</b> (310) 704-1265	<b>Turn Around:</b> 5 workdays
<b>Fax:</b> (310) 834-1125	<b>Client Project:</b> Burrowing Owl Brown Field Airport
<b>Work Order(s):</b> 2E01071	

**NELAP #04229CA ELAP#1132 NEVADA #CA211 HAWAII LACSD #10143**

*The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. Weck Laboratories, Inc. certifies that the test results meet all NELAC requirements unless noted in the case narrative. This analytical report is confidential and is only intended for the use of Weck Laboratories, Inc. and its client. This report contains the Chain of Custody document, which is an integral part of it, and can only be reproduced in full with the authorization of Weck Laboratories, Inc.*

Dear Jesse Marquez :

Enclosed are the results of analyses for samples received 05/01/12 16:41 with the Chain of Custody document. The samples were received in good condition, at 4.8 °C and on ice. All analysis met the method criteria except as noted below or in the report with data qualifiers.

**Case Narrative:**

**Reviewed by:**

Kim G Tu  
Project Manager





Coalition for a Safe Environment  
1601 N. Wilmington Blvd.  
Wilmington CA, 90744

**Date Received:** 05/01/12 16:41  
**Date Reported:** 05/10/12 11:06

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Sampled by:</b>	<b>Sample Comments</b>	<b>Lab ID</b>	<b>Matrix</b>	<b>Date Sampled</b>
Brown Field Municipal Airport Helicopter Pad Uesse N. Marque			2E01071-01	Water	05/01/12 11:25
Brown Field Municipal Airport Helicopter Pad Uesse N. Marque			2E01071-02	Water	05/01/12 11:30
Brown Field Municipal Airport Helicopter Pad Uesse N. Marque			2E01071-03	Water	05/01/12 11:35

**ANALYSES**

Carbamates and Urea Pesticides  
Semivolatile Organic Compounds by GC/MS



Coalition for a Safe Environment  
1601 N. Wilmington Blvd.  
Wilmington CA, 90744

Date Received: 05/01/12 16:41  
Date Reported: 05/10/12 11:06

2E01071-01 Brown Field Municipal Airport Helicopter Pad North #1  
Sampled: 05/01/12 11:25 Sampled By: Jesse N. Marquez Matrix: Water

**Carbamates and Urea Pesticides**

Method: EPA 632	Batch: W2E0068	Prepared: 05/02/12 08:49	Analyst: ejm				
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Diuron	ND	7.3	50	ug/l	1	05/09/12 18:52	M-03

**Semivolatile Organic Compounds by GC/MS**

Method: EPA 525.2	Batch: W2E0086	Prepared: 05/02/12 11:05	Analyst: cwn				
Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
<b>Bromacil</b>	<b>13</b>	<b>1.9</b>	<b>25</b>	<b>ug/l</b>	<b>1</b>	<b>05/10/12 00:10</b>	<b>M-03, J</b>
Surr: 1,3-Dimethyl-2-nitrobenzene	98 %	Conc:245	73-136	%			
Surr: Perylene-d12	72 %	Conc:180	48-141	%			
Surr: Triphenyl phosphate	118 %	Conc:296	71-150	%			



Coalition for a Safe Environment  
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Wilmington CA, 90744

**Date Received: 05/01/12 16:41**  
**Date Reported: 05/10/12 11:06**

**2E01071-02**

**Brown Field Municipal Airport Helicopter Pad East #2**

**Sampled: 05/01/12 11:30**

**Sampled By: Jesse N. Marquez**

**Matrix: Water**

**Carbamates and Urea Pesticides**

Method: EPA 632

Batch: W2E0068

Prepared: 05/02/12 08:49

Analyst: ejm

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
<b>Diuron</b>	<b>12</b>	<b>7.3</b>	<b>50</b>	<b>ug/l</b>	<b>1</b>	<b>05/09/12 18:52</b>	<b>M-03, J</b>

**Semivolatile Organic Compounds by GC/MS**

Method: EPA 525.2

Batch: W2E0086

Prepared: 05/02/12 11:05

Analyst: cwn

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
<b>Bromacil</b>	<b>310</b>	<b>1.9</b>	<b>25</b>	<b>ug/l</b>	<b>1</b>	<b>05/10/12 00:38</b>	<b>M-03</b>
<i>Surr: 1,3-Dimethyl-2-nitrobenzene</i>	<i>93 %</i>	<i>Conc:232</i>	<i>73-136</i>	<i>%</i>			
<i>Surr: Perylene-d12</i>	<i>86 %</i>	<i>Conc:216</i>	<i>48-141</i>	<i>%</i>			
<i>Surr: Triphenyl phosphate</i>	<i>108 %</i>	<i>Conc:270</i>	<i>71-150</i>	<i>%</i>			





Coalition for a Safe Environment  
1601 N. Wilmington Blvd.  
Wilmington CA, 90744

**Date Received: 05/01/12 16:41**  
**Date Reported: 05/10/12 11:06**

**2E01071-03**

**Brown Field Municipal Airport Helicopter Pad South #3**

**Sampled: 05/01/12 11:35**

**Sampled By: Jesse N. Marquez**

**Matrix: Water**

**Carbamates and Urea Pesticides**

Method: EPA 632

Batch: W2E0068

Prepared: 05/02/12 08:49

Analyst: ejm

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Diuron	150	7.3	50	ug/l	1	05/09/12 18:52	M-03

**Semivolatile Organic Compounds by GC/MS**

Method: EPA 525.2

Batch: W2E0086

Prepared: 05/02/12 11:05

Analyst: cwn

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Bromacil	960	1.9	25	ug/l	1	05/10/12 01:06	M-03
Surr: 1,3-Dimethyl-2-nitrobenzene	106 %	Conc:265	73-136	%			
Surr: Perylene-d12	81 %	Conc:202	48-141	%			
Surr: Triphenyl phosphate	93 %	Conc:232	71-150	%			



Coalition for a Safe Environment  
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Wilmington CA, 90744

**Date Received: 05/01/12 16:41**  
**Date Reported: 05/10/12 11:06**

# QUALITY CONTROL SECTION



Coalition for a Safe Environment  
1601 N. Wilmington Blvd.  
Wilmington CA, 90744

Date Received: 05/01/12 16:41  
Date Reported: 05/10/12 11:06

**Carbamates and Urea Pesticides - Quality Control**

**Batch W2E0068 - EPA 632**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	% REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Blank (W2E0068-BLK1)</b> Analyzed: 05/09/12 18:52										
Diuron	ND	1.0	ug/l							
<b>LCS (W2E0068-BS1)</b> Analyzed: 05/09/12 18:52										
Diuron	4.99	1.0	ug/l	5.00		100	55-152			
<b>LCS Dup (W2E0068-BSD1)</b> Analyzed: 05/09/12 18:52										
Diuron	4.98	1.0	ug/l	5.00		100	55-152	0.06	25	

**Semivolatile Organic Compounds by GC/MS - Quality Control**

**Batch W2E0086 - EPA 525.2**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	% REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Blank (W2E0086-BLK1)</b> Analyzed: 05/09/12 22:48										
Bromacil	ND	0.50	ug/l							
Surr: 1,3-Dimethyl-2-nitrobenzene	4.92		ug/l	5.00		98	73-136			
Surr: Perylene-d12	4.57		ug/l	5.00		91	48-141			
Surr: Triphenyl phosphate	4.66		ug/l	5.00		93	71-150			
<b>LCS (W2E0086-BS1)</b> Analyzed: 05/09/12 23:15										
Bromacil	4.84	0.50	ug/l	5.00		97	43-177			
Surr: 1,3-Dimethyl-2-nitrobenzene	4.77		ug/l	5.00		95	73-136			
Surr: Perylene-d12	5.28		ug/l	5.00		106	48-141			
Surr: Triphenyl phosphate	5.27		ug/l	5.00		105	71-150			
<b>LCS Dup (W2E0086-BSD1)</b> Analyzed: 05/09/12 23:43										
Bromacil	5.40	0.50	ug/l	5.00		108	43-177	11	30	
Surr: 1,3-Dimethyl-2-nitrobenzene	4.84		ug/l	5.00		97	73-136			
Surr: Perylene-d12	5.63		ug/l	5.00		113	48-141			
Surr: Triphenyl phosphate	5.01		ug/l	5.00		100	71-150			



Coalition for a Safe Environment  
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**Date Received:** 05/01/12 16:41  
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### Notes and Definitions

- M-03** Due to insufficient sample volume, sample was diluted prior to preparation. The MDL and MRL were raised due to the dilution.
- J** Detected but below the Reporting Limit; therefore, result is an estimated concentration.
- ND** NOT DETECTED at or above the Reporting Limit. If J-value reported, then NOT DETECTED at or above the Method Detection Limit (MDL)
- NR** Not Reportable
- Dil** Dilution
- dry** Sample results reported on a dry weight basis
- RPD** Relative Percent Difference
- % Rec** Percent Recovery
- Sub** Subcontracted analysis, original report available upon request
- MDL** Method Detection Limit
- MDA** Minimum Detectable Activity
- MRL** Method Reporting Limit

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California Department of Health Services.

The Reporting Limit (RL) is referenced as the Laboratory's Practical Quantitation Limit (PQL) or the Detection Limit for Reporting Purposes (DLR).

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.



NELAP - RECOGNIZED



CALIFORNIA STATE

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM BRANCH

**CERTIFICATE OF NELAP ACCREDITATION**

Is hereby granted to

**Weck Laboratories, Inc.**

14859 East Clark Avenue  
City of Industry, CA 91745

Scope of the Certificate is limited to the  
"NELAP Fields of Accreditation"  
which accompany this Certificate.

Continued accredited status depends on successful  
ongoing participation in the program.

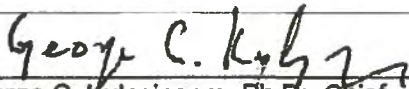
This Certificate is granted in accordance with provisions of  
Section 100825, et seq. of the Health and Safety Code.

Certificate No.: 04229CA

Expiration Date: 10/31/2012

Effective Date: 11/1/2011

Richmond, California  
subject to forfeiture or revocation

  
George C. Kulasingam, Ph.D., Chief  
Environmental Laboratory Accreditation Program Branch



CALIFORNIA STATE  
ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM BRANCH

**CERTIFICATE OF ENVIRONMENTAL ACCREDITATION**

Is hereby granted to

**Weck Laboratories, Inc.**

14859 East Clark Avenue  
City of Industry, CA 91745


Scope of the certificate is limited to the  
"Fields of Testing"  
which accompany this Certificate.

Continued accredited status depends on successful completion of on-site,  
proficiency testing studies, and payment of applicable fees.

This Certificate is granted in accordance with provisions of  
Section 100825, et seq. of the Health and Safety Code.

Certificate No.: 1132  
Expiration Date: 3/31/2014  
Effective Date: 4/1/2012

Richmond, California  
subject to forfeiture or revocation

  
George C. Kulasingam, Ph.D., Chief  
Environmental Laboratory Accreditation Program Branch

# Material Safety Data Sheet



## DuPont™ Krovar® I DF Herbicide

Version 2.4

Revision Date 01/19/2012

Ref. 130000023993

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DuPont™ Krovar® I DF Herbicide  
Tradename/Synonym : DPX-M2574  
B10048033  
Bromacil: [5-Bromo-3-sec-butyl-6-methyluracil]  
Diuron: [3-(3,4-Dichlorophenyl)-1,1-dimethylurea]

MSDS Number : 130000023993

Product Use : Herbicide

Manufacturer : DuPont  
1007 Market Street  
Wilmington, DE 19898

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)  
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)  
Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

### SECTION 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### Caution

Harmful if swallowed or absorbed through the skin . Causes moderate eye irritation. Avoid contact with skin, eyes and clothing.

#### Potential Health Effects

This section includes potential acute adverse effects which could occur if this material is not used according to the label.

Skin : May cause: slight irritation, Discomfort.

Eyes : May cause: Irritation with discomfort, pain, redness, or visual impairment.

Ingestion

**Attachment - D**

**Dupont**

**Material Safety Data Sheet**

**DuPont Krovar IDF Herbicide**

**Trade Name – DPX-M2574**



Material Safety Data Sheet



**DuPont™ Krovar® I DF Herbicide**

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- Diuron : May cause: Abnormal decrease in number of red blood cells (anaemia) which could produce tiredness, rapid heartbeat, dizziness, pale skin, leg cramps, shortness of breath
- Repeated exposure  
Diuron : Adverse effects from repeated exposure may include: Bladder damage altered blood chemistry
- Quartz : DuPont has classified this material as a known human carcinogen.
- Target Organs  
Diuron : Blood Urinary system Bladder
- Carcinogenicity  
Material

IARC	NTP	OSHA
Quartz	1	X

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No.	Concentration
Bromacil	314-40-9	40 %
Diuron	330-54-1	40 %
Other Ingredients		20 %

Present as an impurity in the clay component of this product:

Quartz		<1 %
--------	--	------



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**SECTION 4. FIRST AID MEASURES**

- Skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- Inhalation : Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
- Ingestion : Call a physician or poison control centre immediately. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person.
- General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment.  
For medical emergencies involving this product, call toll free 1-800-441-3637. See Label for Additional Precautions and Directions for Use.

**SECTION 5. FIREFIGHTING MEASURES**

- Flammable Properties
- Flash point : no data available
- Ignition temperature : 420 °C (788 °F)
- Lower explosion limit : 0.135 g/l
- Fire and Explosion Hazard : Dust may form explosive mixture in air.
- Suitable extinguishing media : Water spray, Foam, Dry chemical, Carbon dioxide (CO2)
- Unsuitable extinguishing media : High volume water jet, (contamination risk)



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**Firefighting Instructions** : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.  
Prevent fire extinguishing water from contaminating surface water or the ground water system. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
(on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers / tanks with water spray.  
Control Runoff.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

**Spill Cleanup** : Shovel or sweep up. Scoop into bags or boxes with plastic or aluminium shovel. Never return to container for reuse. If spill area is on ground near valuable plants or trees, remove top 2 inches of soil after initial cleanup.

**Accidental Release Measures** : Prevent material from entering sewers, waterways, or low areas. Follow applicable Federal, State/Provincial and Local laws/regulations.

**SECTION 7. HANDLING AND STORAGE**

**Handling (Personnel)** : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Storage** : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Store in a cool, dry place. Keep out of the reach of children.



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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering controls** : Ensure adequate ventilation. When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS. Refer to the product label for additional Engineering Controls.

**Personal protective equipment**  
**Skin and body protection** : Pilots, flaggers and groundboom applicators must wear:  
 Long sleeved shirt and long pants  
 Shoes plus socks  
 Groundboom applicators must wear:  
 Chemical resistant gloves made of any waterproof material  
 Mixers, loaders, applicators and other handlers must wear:  
 Long sleeved shirt and long pants  
 Shoes plus socks  
 Chemical resistant gloves made of any waterproof material  
 Polyvinylchloride  
 A NIOSH approved dust/mist filtering respirator with any N, R, P, or HE filter or with approval number prefix TC-21C.  
 Chemical resistant apron when mixing, loading, or cleaning equipment or spills.

**Protective measures** : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Exposure Guidelines**

**Exposure Limit Values**

**Bromacil**

PEL: (OSHA) 1 ppm 10 mg/m3 8 hr. TWA

TLV (ACGIH) 10 mg/m3 TWA

AEL \* (DUPONT) 10 mg/m3 8 & 12 hr. TWA

**Diuron**

TLV (ACGIH) 10 mg/m3 TWA

Material Safety Data Sheet



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AEL *	(DUPONT)	1 mg/m3	8 & 12 hr. TWA	Total dust.
Quartz PEL:	(OSHA)	2.4 millions of particles per cubic foot of air Respirable.		TWA
		Remarks	The exposure limit is calculated from the equation, $250/(\%SiO_2+5)$ , using a value of 100% SiO <sub>2</sub> . Lower percentages of SiO <sub>2</sub> will yield higher exposure limits.	
PEL:	(OSHA)	0.1 mg/m3 Remarks	TWA	Respirable. The exposure limit is calculated from the equation, $10/(\%SiO_2+2)$ , using a value of 100% SiO <sub>2</sub> . Lower percentages of SiO <sub>2</sub> will yield higher exposure limits.
PEL:	(OSHA)	0.3 mg/m3 Remarks	TWA	Total dust. The exposure limit is calculated from the equation, $30/(\%SiO_2+2)$ , using a value of 100% SiO <sub>2</sub> . Lower values of % SiO <sub>2</sub> will give higher exposure limits.
TLV	(ACGIH)	0.025 mg/m3	TWA	Respirable fraction.
AEL *	(DUPONT)	0.02 mg/m3	8 hr. TWA	Respirable dust.
AEL *	(DUPONT)	0.01 mg/m3	12 hr. TWA	Respirable dust.

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Form : solid, granules  
 Color : brown  
 Odor : none  
 Bulk density : 0.51 - 0.64 g/ml

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**DuPont™ Krovar® I DF Herbicide**

Version 2.4

Revision Date 01/19/2012

Ref. 130000023993

Water solubility : dispersible

**SECTION 10. STABILITY AND REACTIVITY**

- Stability : Stable at normal temperatures and storage conditions.
- Incompatibility : None reasonably foreseeable.
- Hazardous reactions : Hazardous polymerisation does not occur.

**SECTION 11. TOXICOLOGICAL INFORMATION**

- DuPont™ Krovar® I DF Herbicide  
Inhalation 4 h LC50 : > 5.2 mg/l , rat
- Dermal LD50 : > 2,000 mg/kg , rabbit
- Oral LD50 : 2,300 mg/kg , rat
- Skin irritation : slight irritation, rabbit
- Eye irritation : slight irritation, rabbit
- Sensitisation : Animal test did not cause sensitization by skin contact., guinea pig

Bromacil

- Repeated dose toxicity :  
The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.  
  
Oral  
rat  
  
Liver effects, Organ weight changes, Thyroid effects, Reduced body weight gain  
  
Inhalation  
rat



**DuPont™ Krovar® I DF Herbicide**

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Increased liver weight, altered blood chemistry

**Carcinogenicity** : The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

An increased incidence of tumours was observed in laboratory animals.

**Mutagenicity** : Did not cause genetic damage in cultured bacterial cells.  
Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.  
Did not cause genetic damage in animals.

**Reproductive toxicity** : Animal testing showed no reproductive toxicity.

**Teratogenicity** : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Diuron

**Repeated dose toxicity** : The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

Oral  
rat

Red blood cell destruction causing abnormal decrease in number of red blood cells (anaemia), Spleen effects, bone marrow changes, Kidney effects, Bladder effects, Reduced body weight gain

Oral  
dog

Red blood cell destruction causing abnormal decrease in number of red blood cells (anaemia), Spleen effects, bone marrow changes, Reduced body weight gain

Inhalation  
rat

Red blood cell destruction causing abnormal decrease in number of red blood cells (anaemia), Spleen effects



**DuPont™ Krovar® I DF Herbicide**

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Ref. 130000023993

- Carcinogenicity** : The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.  
  
An increased incidence of tumours was observed in laboratory animals.
- Mutagenicity** : Overall weight of evidence indicates that the substance is not mutagenic.
- Reproductive toxicity** : Animal testing did not show any effects on fertility.
- Teratogenicity** : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Quartz

- Repeated dose toxicity** : Inhalation  
Fluid retention in lungs (pulmonary oedema), lung effects, Inflammation, Chronic lung disease, Fibrosis

**SECTION 12. ECOLOGICAL INFORMATION**

**Aquatic Toxicity**

**Bromacil**

- 96 h LC50 : *Lepomis macrochirus* (Bluegill sunfish) 127 mg/l
- 96 h LC50 : *Oncorhynchus mykiss* (rainbow trout) 36 mg/l
- 72 h ErC50 : *Pseudokirchneriella subcapitata* (green algae) 0.017 mg/l
- NOEC : Algae 0.001 mg/l
- 48 h EC50 : *Daphnia magna* (Water flea) 119 mg/l

**Diuron**

- 96 h LC50 : *Oncorhynchus mykiss* (rainbow trout) 17.4 mg/l
- 72 h EC50 : Algae 0.018 mg/l



# Material Safety Data Sheet



## DuPont™ Krovar® I DF Herbicide

Version 2.4

Revision Date 01/19/2012

Ref. 130000023993

72 h NOEC : Algae 0.01 mg/l

48 h EC50 : Daphnia magna (Water flea) 1.4 mg/l

Additional ecological information : Environmental Hazards: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate. See product label for additional application instructions relating to environmental precautions.

### SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Disposal : Refer to the product label for instructions.

In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

### SECTION 14. TRANSPORT INFORMATION

IATA\_C UN number : 3077

Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (Diuron, Bromacil)

Class : 9

Packing group : III

Labelling No. : 9MI

IMDG UN number : 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Diuron, Bromacil)

Class : 9

Packing group : III

Labelling No. : 9

Material Safety Data Sheet



**DuPont™ Krovar® I DF Herbicide**

Version 2.4

Revision Date 01/19/2012

Ref. 130000023993

Marine pollutant : yes (Diuron, Bromacil)

Not regulated by DOT in single packages containing less than 100 pounds Diuron.

**SECTION 15. REGULATORY INFORMATION**

SARA 313 Regulated Chemical(s) : Bromacil , Diuron

Title III hazard classification : Acute Health Hazard: Yes  
Chronic Health Hazard: Yes  
Fire: No  
Reactivity/Physical hazard: No  
Pressure: No

CERCLA Reportable Quantity : 250 lbs  
Based on the percentage composition of this chemical in the product.:  
Diuron

EPA Reg. No. : 352-505  
In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer. Diuron , Quartz , Titanium dioxide

PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Bromacil , Diuron , Kaolin , Sodium sulphate , Silica gel, precipitated, crystalline-free

**SECTION 16. OTHER INFORMATION**

# Material Safety Data Sheet



## DuPont™ Krovar® I DF Herbicide

Version 2.4

Revision Date 01/19/2012

Ref. 130000023993

	NFPA	HMIS
Health :	1	1
Flammability :	1	1
Reactivity/Physical hazard :	0	0

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Contact person : DuPont Crop Protection, Wilmington, DE, 19898, Phone: 1-888-638-7668

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Significant change from previous version is denoted with a double bar.