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
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Coalition For A Safe Environment

Research Field Team

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

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. Document and count the number of Burrowing Owl Habitats at every location sited.
3. Document 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 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 than 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 racks 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 ties 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 they 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 Filed 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 Duiron.

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.
Food Resources Found Near Burrow Entrances

Mice & Beetles Were Found In Front Of Burrow Nest Entrances
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 Krovar IDF Herbicide Data Sheet On License Plate 3-3-2012
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

1st 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
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

2nd Time
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 (DuPoint 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 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

Laboratory ID: 1203-072-1 1203-072-2
Client Sample ID: 03-03-12-001 03-03-12-002

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Greg Tejirian
Laboratory Director

*The results are base upon the sample received.

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

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Client Name: 

Attention: 

Project ID: 
Project Name: Brown Field Municipal Airport

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Date Received: 05/02/12 @ 14:30 p.m.
Date Analyzed: 05/04/12

Method: (8151A, Herbicides by GC)

Matrix: Water

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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
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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
<table>
<thead>
<tr>
<th>ID#</th>
<th>DATE SAMPLED</th>
<th>TIME SAMPLED</th>
<th>SMPL TYPE</th>
<th>SAMPLE IDENTIFICATION/SITE LOCATION</th>
<th># OF CONT.</th>
<th>PROJECT</th>
<th>ANALYSIS REQUESTED</th>
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<td>5-1-12</td>
<td>11:25</td>
<td>GW</td>
<td>Brown Field Municipal Airport</td>
<td>1</td>
<td>Burrowing Owl</td>
<td>Brown 935</td>
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<tr>
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<td>5-1-12</td>
<td>11:30</td>
<td>GW</td>
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<td>1</td>
<td>Burrowing Owl</td>
<td>Brown 935</td>
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<td>11:35</td>
<td>GW</td>
<td>Brown Field Municipal Airport</td>
<td>1</td>
<td>Burrowing Owl</td>
<td>Brown 935</td>
</tr>
</tbody>
</table>

**CLIENT NAME:** Coalition for a Safe Environment  
**ADDRESS:** 1601 N Wilmington Blvd, Wilmington, CA 90744  
**PROJECT MANAGER:** Jesse N. Marquez  
**SAMPLE:** Jesse N. Marquez

**PROJECT:** Burrowing Owl  
**SITE:** Brown Field Airport

**SPECIAL HANDLING:**  
- Same Day Rush 150%
- 24 Hour Rush 100%
- 48 - 72 Hour Rush 75%
- Rush Extraction 50%
- 10 - 15 Business Days
- QA/QC Package

**COMMENTS:**  
- Due Upon Request  
- Due Upon Request  
- Due Upon Request

**RELINQUISHED BY:** Jesse N. Marquez  
**DATE / TIME:** 5-1-2012 4:41 PM

**RECEIVED BY:**  
**SIGNATURE:**  
**PRINT NAME:**  
**DATE / TIME:** 5-1-2012 4:41 PM

**SAMPLE CONDITION:**  
- Actual Temperature: 41.8°C

**SAMPLE TYPE CODE:**  
- AQ = Aquatic
- NA = Non Aquatic
- SL = Sludge
- DW = Drinking Water
- WW = Waste Water
- RW = Rain Water
- GW = Ground Water
- SW = Solid Waste
- CL = Clay
- OT = Other Material

**SPECIAL REQUIREMENTS / BILLING INFORMATION:**  
- Over Unscheduled Rush Requests, Client Agrees to Terms and Conditions (See Back of This Form).
CERTIFICATE OF ANALYSIS

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

Attention: Jesse Marquez

Phone: (310) 704-1265
Fax: (310) 834-1125

Work Order(s): 2E01071

Report Date: 05/10/12 11:06
Received Date: 05/01/12 16:41
Turn Around: 5 workdays
Client Project: Burrowing Owl Brown Field Airport

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:

[Signature]
Kim G Tu
Project Manager
Coalition for a Safe Environment  
1601 N. Wilmington Blvd. 
Wilmington CA, 90744 

Weck Laboratories, Inc. 
Analytical Laboratory Service - Since 1954 

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

ANALYTICAL REPORT FOR SAMPLES 

<table>
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<tr>
<th>Sample ID</th>
<th>Lab ID</th>
<th>Matrix</th>
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<tbody>
<tr>
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<td>2E01071-03</td>
<td>Water</td>
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</table>

ANALYSES 

Carbamates and Urea Pesticides 

Semivolatile Organic Compounds by GC/MS
**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

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<th>Analyte</th>
<th>Result</th>
<th>MDL</th>
<th>MRL</th>
<th>Units</th>
<th>Dil</th>
<th>Analyzed</th>
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<tbody>
<tr>
<td>Diuron</td>
<td>ND</td>
<td>7.3</td>
<td>50</td>
<td>ug/l</td>
<td>1</td>
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### Semivolatile Organic Compounds by GC/MS

**Method: EPA 525.2**  
**Batch:** W2E0086  
**Prepared:** 05/02/12 11:05  
**Analyst:** cwn

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<tr>
<td>Bromacil</td>
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<td>1.9</td>
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<td>ug/l</td>
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<tr>
<td>Surrogate, 1,3-Dimethyl-2-nitrobenzene</td>
<td>98 %</td>
<td>Conc:245</td>
<td>73-136</td>
<td>%</td>
<td></td>
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<tr>
<td>Surrogate, Perylene-d12</td>
<td>72 %</td>
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<td>%</td>
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<tr>
<td>Surrogate, Triphenyl phosphate</td>
<td>118 %</td>
<td>Conc:296</td>
<td>71-150</td>
<td>%</td>
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</table>
**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

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**Semivolatile Organic Compounds by GC/MS**  
**Method:** EPA 525.2  
**Batch:** W2E0086  
**Prepared:** 05/02/12 11:05  
**Analyst:** cwn

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<tr>
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<td>%</td>
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<td>108 %</td>
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### Carbamates and Urea Pesticides

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### Semivolatile Organic Compounds by GC/MS

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QUALITY CONTROL SECTION
Carbamates and Urea Pesticides - Quality Control

Batch W2E0068 - EPA 632

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<th>RPD Limit</th>
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<td>LCS (W2E0068-BS1)</td>
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<tr>
<td>Diuron</td>
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<td>5.00</td>
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Semivolatile Organic Compounds by GC/MS - Quality Control

Batch W2E0086 - EPA 525.2

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<td>LCS Dup (W2E0086-BSD1)</td>
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</table>
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.
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. Kulesingam, 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® 1 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® 1 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**

1 / 12
Attachment - D

Dupont

Material Safety Data Sheet

DuPont Krovar IDF Herbicide

Trade Name – DPX-M2574
Material Safety Data Sheet

DuPont™ Krovar® IDF Herbicide

Version 2.4

Revision Date 01/19/2012

Ref. 130000023993

**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**

<table>
<thead>
<tr>
<th>IARC</th>
<th>NTP</th>
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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

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<tr>
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<th>CAS-No.</th>
<th>Concentration</th>
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<tbody>
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<td>Diuron</td>
<td>330-54-1</td>
<td>40 %</td>
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<tr>
<td>Other Ingredients</td>
<td></td>
<td>20 %</td>
</tr>
</tbody>
</table>

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

Quartz

<1 %

2 / 12
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: no data available

Flash point: 420 °C (788 °F)

Ignition temperature: 0.135 g/l

Lower explosion limit: 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)
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.
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

<table>
<thead>
<tr>
<th></th>
<th>PEL:</th>
<th>OSHA</th>
<th>1 ppm</th>
<th>10 mg/m3</th>
<th>8 hr. TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLV</td>
<td>(ACGIH)</td>
<td>10 mg/m3</td>
<td>TWA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AEL *</td>
<td>(DUPONT)</td>
<td>10 mg/m3</td>
<td>8 &amp; 12 hr. TWA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Diuron

<table>
<thead>
<tr>
<th></th>
<th>TLV</th>
<th>(ACGIH)</th>
<th>10 mg/m3</th>
<th>TWA</th>
</tr>
</thead>
</table>

5 / 12
### Material Safety Data Sheet

**DuPont™ Krovar® I DF Herbicide**

Version 2.4

Revision Date 01/19/2012

Ref. 130000023993

<table>
<thead>
<tr>
<th>AEL *</th>
<th>(DUPONT)</th>
<th>1 mg/m³</th>
<th>8 &amp; 12 hr. TWA</th>
<th>Total dust.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Quartz PEL:</th>
<th>(OSHA)</th>
<th>2.4 millions of particles per cubic foot of air</th>
<th>TWA Respirable. Remarks</th>
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<tbody>
<tr>
<td>The exposure limit is calculated from the equation, 250/(%SiO₂+5), using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits.</td>
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<table>
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<tr>
<th>PEL:</th>
<th>(OSHA)</th>
<th>0.1 mg/m³</th>
<th>TWA Respirable. Remarks</th>
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<td>The exposure limit is calculated from the equation, 10/(%SiO₂+2), using a value of 100% SiO₂. Lower percentages of SiO₂ will yield higher exposure limits.</td>
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<table>
<thead>
<tr>
<th>PEL:</th>
<th>(OSHA)</th>
<th>0.3 mg/m³</th>
<th>TWA Total dust. Remarks</th>
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</table>

| 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

**6 / 12**
Material Safety Data Sheet

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

7 / 12
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
Material Safety Data Sheet

DuPont™ Krovar® i DF Herbicide

Version 2.4

Revision Date 01/19/2012 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. 130000023963

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**

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

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Material Safety Data Sheet

DuPont™ Krovar® 1 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 16. 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

11 / 12
Material Safety Data Sheet

DuPont™ Krovar® I DF Herbicide

Version 2.4

Revision Date 01/19/2012

Ref. 130000023993

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<td>Reactivity/Physical hazard</td>
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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.