

EMR

Lot:	4	Plan:	RP900732
Category:	NOTIFIABLE ACTIVITY		
LGA:	Lockyer Valley Regional Council		
Site Name:	AERIAL SPRAYING		
Street:	GATTON-CLIFTON ROAD		
Suburb:	WOODLANDS	Post Code:	4343
Owner:	Sch 4 - Personal information		
Address:			
	GATTON		
	QLD		
Post Code:	4343		

Rec Type:	BP	ID:	44073
Region:		Hist. ID:	
AMA/AN:			
Notified By:	OTHER	Notif. Rec'd:	
Entry Date:	07/07/2003	Last Altered Date:	12/08/2003
File:			
Officer:			
Parcel Status:	C	Area:	182800 m2

External References

Hazardous Contaminants

Notifiable Activities

AERIAL SPRAYING

Comments

Create Date	User ID	Corr No	Officer Name	Date Final	How Finalized
07/07/2003	DOBINST				
INFORMATION PROVIDED BY OWNER STATES THAT THIS SITE HAS BEEN USED FOR AERIAL SPRAYING. PAPERWORK REFERRED TO MARK PATON & JACINTA GRIFFIN WHO ADVISED THAT TEST RESULTS PROVIDED BY OWNER SHOW THAT THE LEVELS OF ENDOSULFANS IN THE SITE ARE AS FOLLOWS: ENDOSULFAN 1 @ 504 MG/KG, ELDOSULFAN 2 @ 534 MG/KG & ELDOSULFAN SULFATE @ 820 MG/KG. L6/RP900732 ALSO REFERS.					
11/07/2003	TSOURGR				
PHONE CALL FROM OWNER, 11/7/03 3.20PM, SAYING HE BELIEVES THE LEVELS OF ENDOSULFANS ON THE SITE WERE TAKEN 8 YEARS AGO AND THAT IF THE SITE WERE TO BE TESTED NOW, THE LEVELS WOULD BE BELOW THE THRESHOLDS. REFERRED THE MATTER TO JACINTA GRIFFIN WHO PHONED OWNER ADVISING THAT FOR THE SITE NOT TO BE LISTED ON THE EMR, THE SAME RESULTS WOULD HAVE TO DEMONSTRATE PESTICIDE LEVELS < A, (HIL'S) IN NEPM.					

EMR

Lot:	6	Plan:	RP900732
Category:	NOTIFIABLE ACTIVITY		
LGA:	Lockyer Valley Regional Council		
Site Name:	AERIAL SPRAYING		
Street:	GATTON-CLIFTON ROAD		
Suburb:	WOODLANDS	Post Code:	4343
Owner:	Sch 4 - Personal information		
Address:	GATTON		
	QLD		
Post Code:	4343		

Rec Type:	BP	ID:	44074
Region:		Hist. ID:	114-35724
AMA/AN:			
Notified By:	OTHER	Notif. Rec'd:	
Entry Date:	07/07/2003	Last Altered Date:	12/08/2003
File:			
Officer:			
Parcel Status:	C	Area:	337940 m2

External References

Hazardous Contaminants

Notifiable Activities

AERIAL SPRAYING

Comments

Create Date	User ID	Corr No	Officer Name	Date Final	How Finalized
07/07/2003	DOBINST				
INFORMATION PROVIDED BY OWNER STATES THAT THIS SITE HAS BEEN USED FOR AERIAL SPRAYING. PAPERWORK REFERRED TO MARK PATON & JACINTA GRIFFIN WHO ADVISED THAT TEST RESULTS PROVIDED BY OWNER SHOW THAT THE LEVELS OF ENDOSULFANS IN THE SITE ARE AS FOLLOWS: ENDOSULFAN 1 @ 504 MG/KG, ELDOSULFAN 2 @ 534 MG/KG & ELDOSULFAN SULFATE @ 820 MG/KG. L4/RP900732 ALSO REFERS.					

MAKE UP FILE
FOR

s.73 - Non responsive information

RTI DL RELEASE - EHP

1 M
6 CH 318 Q Cotton Clifton Rd, Text Hill
Pape Drive, USA

Lot 6 CH3180 – Gatton – Clifton Road, Tenthill

- Queried on the 07/03/95
- Zischeke Pest Control
- Owner states that Jischke Pest Control name not exist and property description is not his. (Andrews states that it may be RP900732)
- Fax rec'd 07/03/95 states that 'Area was used for crop dusting/spraying air field'
- A post-it note attached to fax stated Aerial Spraying may have tank washout etc on site

26/02/02 Current Status as follows:

- Listed on Emr for 'pos' site
- Zoning – Multiple zoning
- Note – Ex-Aerial Spraying Pest Control
- Pest Controllers
- On Dataload
- Current as on CISP as Lots 4 & 6 RP900732

— Owned by

Sch 4 - Personal information

ph:

[Redacted]

[Redacted]

GATTON Gld 4343

ACTION:

Annonie,

Please write to owners querying whether aerial spraying occurred.
Give schedule & definition of aerial spraying & pest control.

1st letter 8/8/02

✓ Updated survey done 5/8/02

[Redacted]

2/8/02

pest control or not

RTI DL RELEASE - EHP

s.73 - Non responsive information

Memorandum

s.73 - Non responsive information

PTI DL RELEASE - EHP

Lot 6 on CH3180 - Gator - Clifton Road, Tenthill

- Queried on 7/3/95

- Zischke Pest Control, Gator Clifton Rd, ✓

If more than 100L of pesticides are stored, ✓
or if pesticide tank or vehicle washing occurs
on site?

* CISP stated that Lot 6 on CH3180 is now

Lot 6 on Plan RP500732 NEW Lot 4 + 6 RP900732

Mailing address is as follows:

Sch 4 - Personal information

* Owner states that ~~Jischke~~ Jischke Pest Control, name
does not exist and property description is not his. (This may
be RP500732 as stated above)

Memorandum

Gatton

To Ariane

File reference

300042

From Anthony Wallis

Subject 'Pos' sites - 12 sites (p3 of 4)

Date

24/7/97

Lot 6 on CH3180 - Gatton-Clifton Rd, Tenthill

Notes

continued...

* 7/3/95 fax states that 'Area was used for crop dusting / spraying air field'

to site name and proper

* A post-it note attached to ^{fax stated} ~~the~~ Aerial Spraying' May have tank washout etc on site.

RTI DL RELEASE - EHP

s.73 - Non responsive information

POS sites. No reply to this letter of
30/7/97.

Refer to attached pwk (sticky note on each)
for comments.

Sch 4 - Personal information

Anthony Wallis

(07) 3225 1957
900842

Facsimile: (07) 3227 8341

30 July 1997

Chief Executive Officer
Gatton Shire Council
PO Box 82
Gatton QLD 4343

Re: Environmental Health Officer

Dear Sir/Madam

Re: Sites classified as "possible" on the Contaminated Sites Register

We are currently assessing whether sites have been entered into the Contaminated Sites Register correctly. At present we are trying to clarify the status of several properties which have been given an interim classification as "possible" contaminated sites. These sites have been notified by Council, but not enough information has been provided for the sites to be classified as "probable" sites. It is essential that these matters are clarified as quickly as possible, both for planning purposes and to ensure accurate information is given out in response to public searches of the Register.

The attached schedule sets out the information required to clarify the status of sites. Could you please arrange for information to be completed and returned to this Department.

A copy of the Prescribed Purpose Interpretation Guide has been included to assist in the verification process. This should also prove beneficial in determining whether future land parcels should be notified.

If you require any further information regarding this letter, please do not hesitate to contact Anthony Wallis on (07) 32251957 or myself on (07) 32251974.

Yours sincerely

Sch 4 - Personal information

Ariane Milinovich

A/Registrar

Hazardous Wastes & Contaminated Sites Section

RTI DL RELEASE - EHP

ATTACHMENT

s.73 - Non responsive information

Sch 4 - Personal information

Lot 6 on Plan CH3180- Clifton Road

The Department was notified that a pest control company operated from this site. The owners stated that there was no such name as 'Zischke Pest Control' and that the property description was not theirs. Department of Natural Resources records show that they are still the current owners of this property. The property description has however changed to Lot 6 on Plan RP900732. This site has been queried with a fax on 6 February 1996. As yet no reply has been received. A fax from Council on 7 March 1995 revealed that aerial spraying operations occurred, therefore it is possible that tank wash out may have occurred. Can you confirm this from Council records?

Were/are the premises used as depots for pest control operations where bulk storage and decanting of pesticides occurs and storage/cleaning of fleets of pest control vehicle(s) is carried out? Yes/No

If so, please specify the types and volumes of chemicals stored on site.

.....

.....

.....

.....

.....

.....

.....

Cotton

Filenote for [redacted] ch 4 - Personal information
Property at Clifton Road, Tenthill

Date: 2 July 2003

Assessing Officer: Jacinta Griffin

File no:

RPD: Lot 4 & 6 RP900732, formerly Lot 6 CH3180

Sampling

The sample analysis report for the property of [redacted] on 16/9/96 at the sites of (6) Soil airstrip and (7) Soil shed floor, showed large concentrations of:

- Endosulfan 1,
- Endosulfan 2 and ;
- Endosulfan Sulphate

These are degraded forms of Endosulfan. Endosulfan is an organochlorine and a Persistent Organic Pesticide (POP). It is listed by the WHO as a Category 2 chemical.

Half life

Endosulfan's half life on average is 50 days, but can depend on the soil type. For the alpha isomer the half life has been recorded as 35 days and 150 days for the beta isomer. The endosulfan sulfate which it breaks down to has been noted as having a half life of 11 weeks.

In the case of aerial spray release, Endosulfan, will react with hydroxyl radicals and as a result its vapor phase half life in the atmosphere will be 1.23 hour.

Endosulfan is moderately persistent and mobile in soils. It will adhere to soil particles to a degree that contamination of surface waters due to runoff can be a serious risk. But it is not soluble in water, but rather is soluble in toluene and hexane. It is not expected that it will leach to the groundwater because of its soil binding capacity. It is highly toxic to aquatic fauna at lethal concentrations (LC 50) in the range of 1 ppb for many species. The water health based limit is 0.2mg/l.

Evaluation/Recommendation

To list the site on the EMR. In the absence of more recent sample results current levels of endosulfan are unknown. Since 1996 degradation would have occurred, however, further sampling would be needed to confirm that no contamination is left.

3/7/03

Then,

Phase list Nitrogen Activity no.2 Aerial spraying
At levels as follows:

Endosulfan 1 @ 504 mg/kg
Endosulfan 2 @ 534 mg/kg
Endosulfan sulfate @ 820 mg/kg

MEMO

Officer: Annemarie Dalton

Date: 30 September 2002

Ref: Lot 6CH3180 (now lots 4 & 6 RP900732)

As stated by owners by faxed dated 12/9/02. No activity has gone on for about 15 years or more. See map attached for info on Aerial spraying plane. The work was being carried out by the owners (now deceased) of the Aerial spraying plane. (see faxed attached dated 21/8/02.)

Not listed on EMR. Historical record on EMR – Ex aerial spraying pest control.

Greg - please advise appropriate action to be taken?

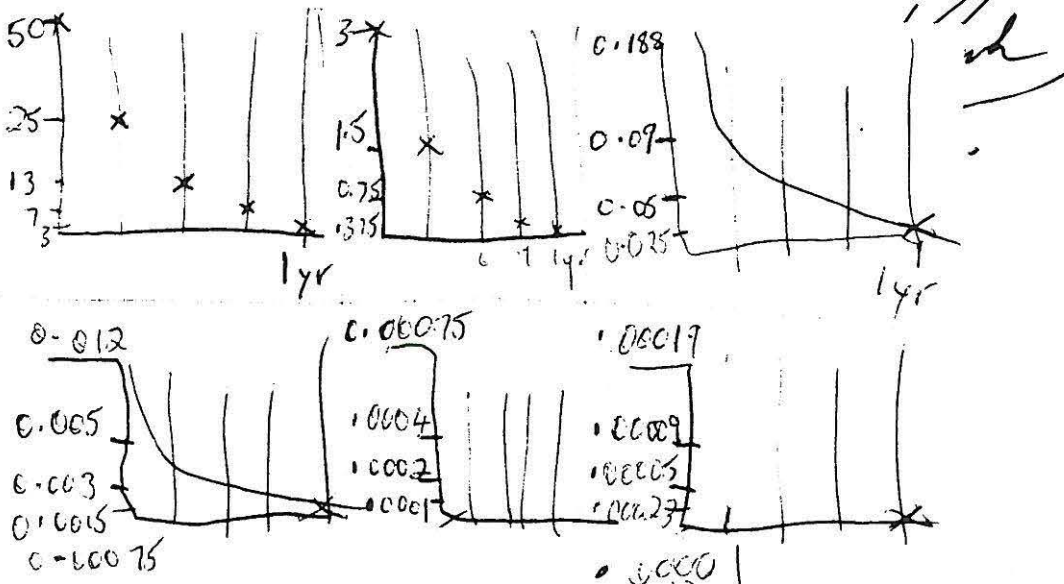
Action to be taken	Chief Scientific Advisors Instructions	Action Complete?
- List on register?		

AMD

Verónica

Please research 1/2 life for the breakdown of endosulphan.

Thanks



12-SEP-2002 THU 14:21

CONTAM LAND UNIT - EPA

FAX NO. 07 32473278

**Facsimile cover sheet**

Environmental Operations
288 Edward Street, Brisbane Qld 4000 > GPO Box 2771, Brisbane Qld 4001
Phone enquiries (07) 3227 7370 > Facsimile (07) 3247 3278

*Various
sites in
this region
being queried*

Date Thursday, 12 September 2002 Time sent 14:23

Please deliver to Name [redacted] Fax number [redacted]

Business/Section EHO - Herberton Shire Council

From Name Annemarie Dalton Telephone (07) 3227 7370

Unit Contaminated Land Unit

Subject Validation of sites for the Environmental Management Register

Number of pages (including facsimile cover sheet) 1

Special precedence ☐ Urgent ☐ Confidential Original is being forwarded ☐ Yes ☐ No

Privacy and confidentiality notice

The information contained in this facsimile is intended for the named recipient/s only. It may contain privileged and confidential information and if you are not an intended recipient, you must not copy, distribute or take any action in reliance on it. If you have received this facsimile in error, please notify the sender.

Dear Sir/Madam,

Lot 6 CH3180 (now lots 4 & 6 RP900732) - Clifton Road, Tenthill

Thank you for you fax dated 21/8/02 regarding the above site (see attached). Can you please advise where the spraying occurred (see attached map) & how long ago spraying occurred. Can you also advise on the volumes of chemicals stored?

Thank you for your assistance and should you have any queries, please do not hesitate to contact me.

Regards,

Sch 4 - Personal information

Annemarie Dalton
Registry Officer
Contaminated Land Unit

*SHAW
GREG*

*No activity has gone on for about 15 years or more
was there ever where of volumes of chemicals stored at the time
work was being carried out by the owner (now deceased) of the
aerial spraying plane.*

**CONTAMINATED
LAND SECTION**
20 SEP 2002

*Tess FYI
Rec'd back from old Gungahnew
Do not list?
Can you please Advise.*

24/9/02

12-SEP-2002 THU 14:28

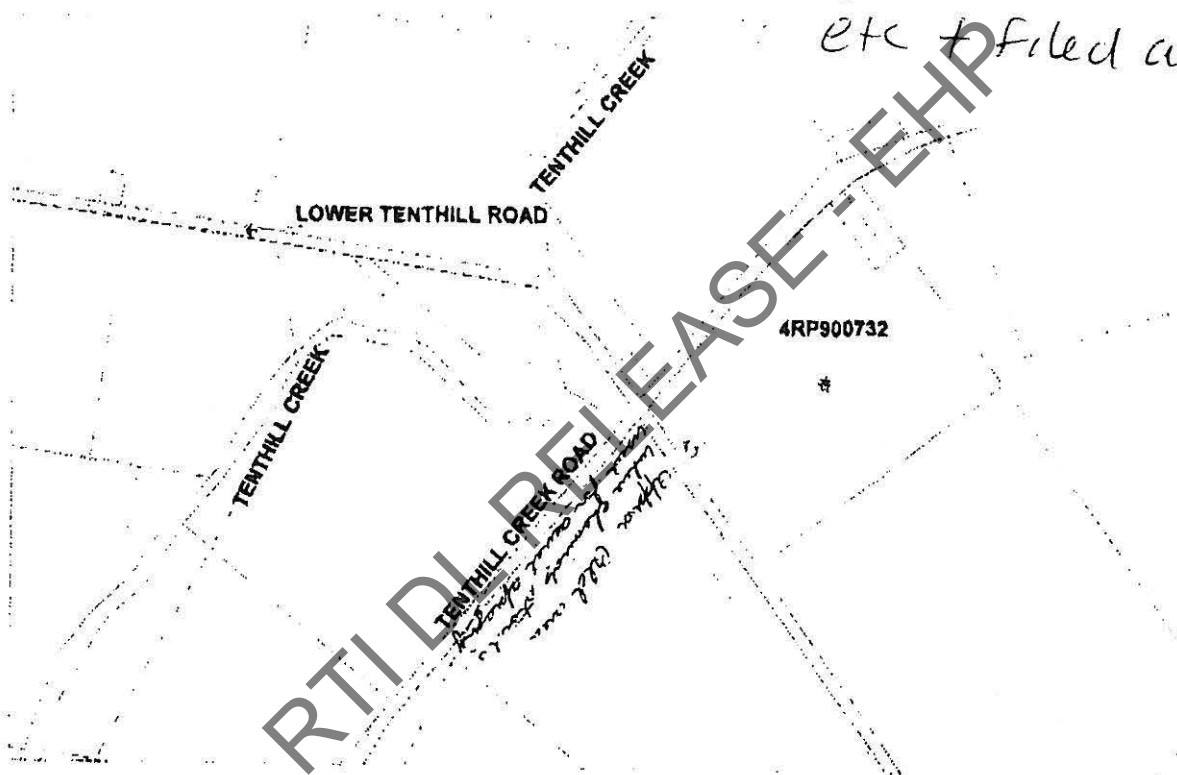
CONTAM LAND UNIT - EPA

FAX NO. 07 32473278

P. 02

all been
Quality checked
Photocopied

PWK needs to
be sorted into canals
etc & filed away



Facsimile cover sheet

Environmental Operations
288 Edward Street, Brisbane Qld 4000 > GPO Box 2771, Brisbane Qld 4001
Phone enquiries (07) 3227 7370 > • Facsimile (07) 3247 3278

Date Thursday, 12 September 2002 Time sent 14:23

Please deliver to Name Sch 4 - Personal information Fax number

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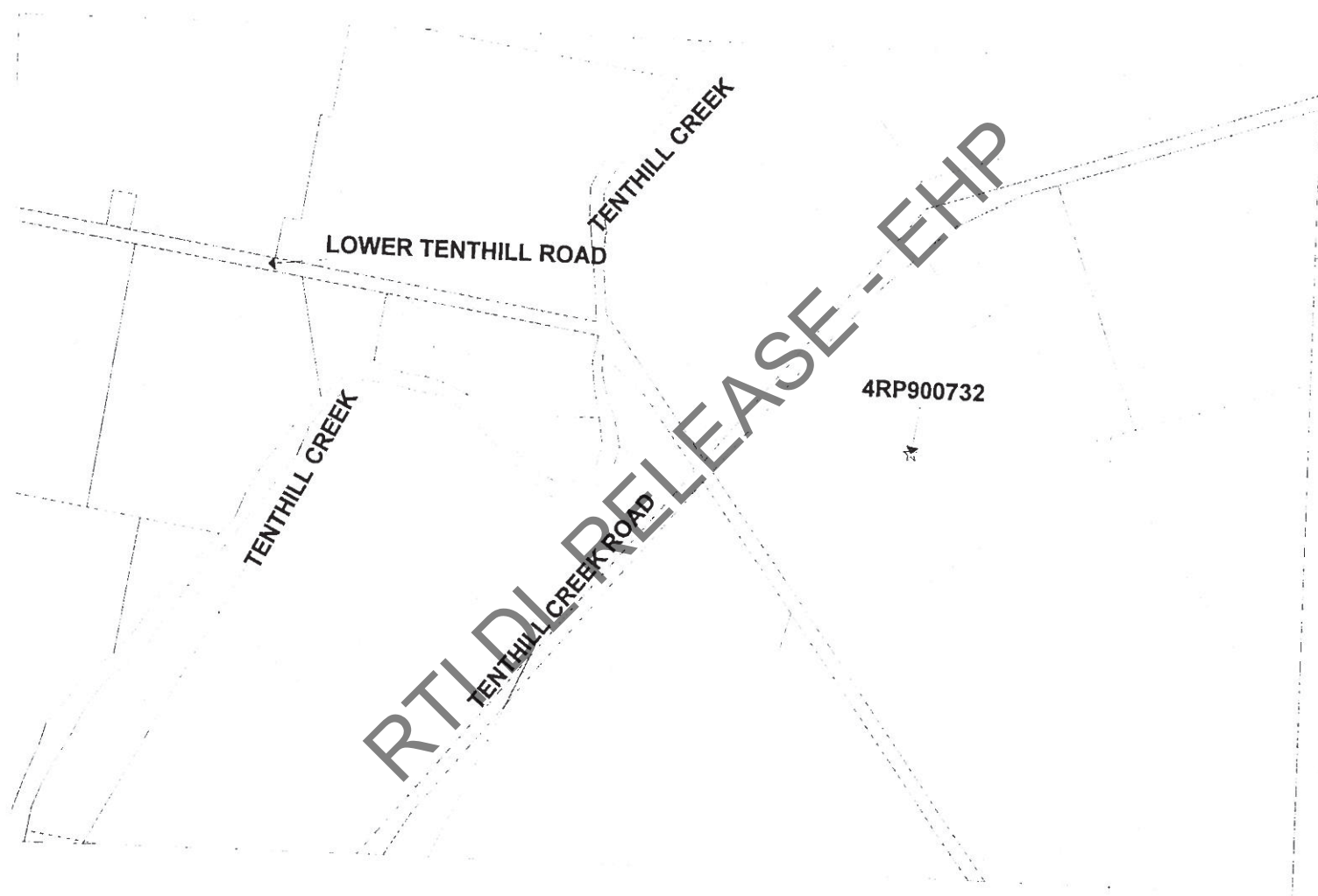
Thank you for your assistance and should you have any queries, please do not hesitate to contact me.

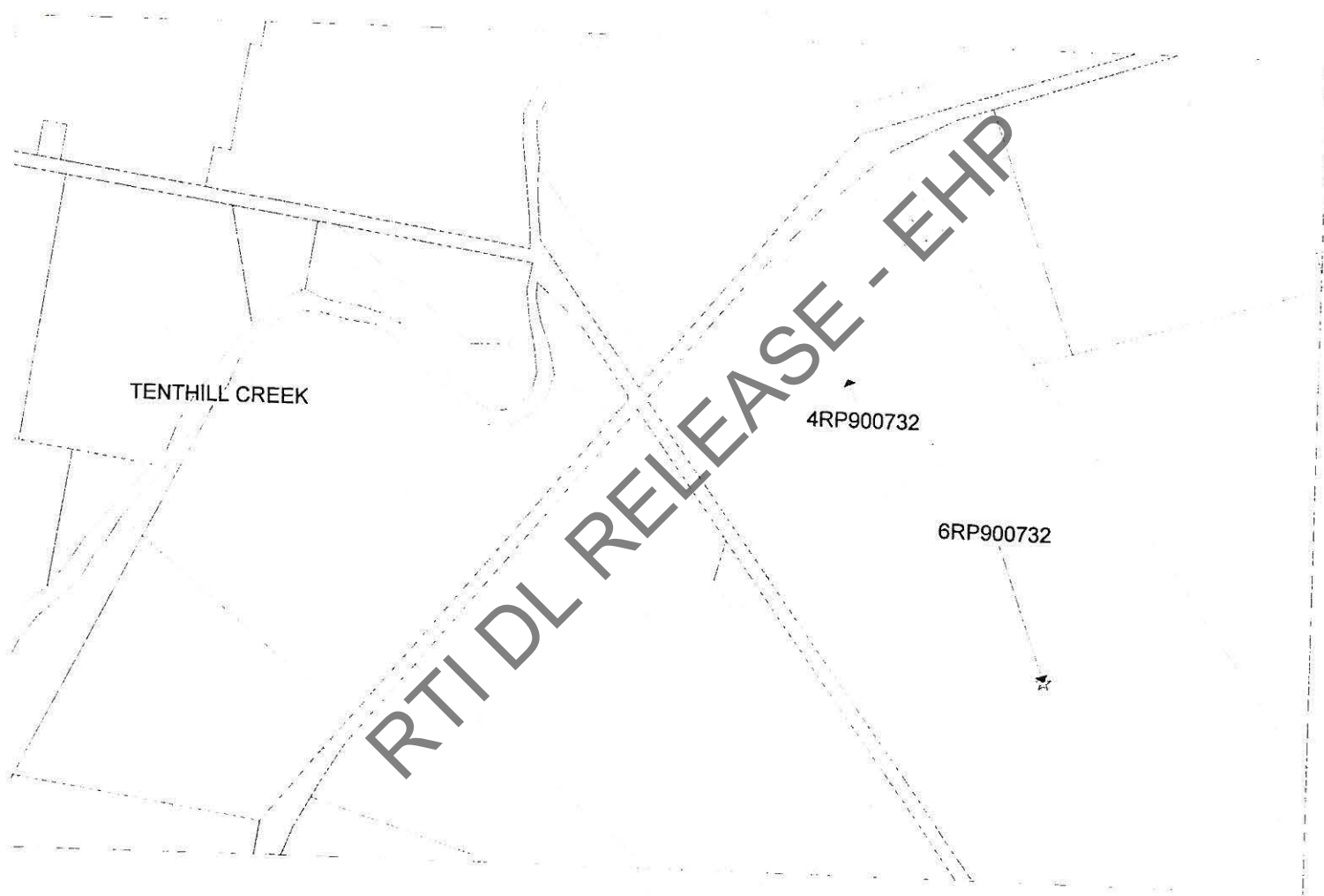
Regards,

Annemarie Dalton
Registry Officer
Contaminated Land Unit

Updated Survey database

12/9/02





3

Depastured	Feed Supply	Water supply
☒ Natural pasture	☒ Supplements <i>Hay only.</i>	☐ Creeks, rivers
☐ Improved pasture	☐ Crops	☐ Dams
☒ Near/in Horticultural area	☐ Grain	☐ Bores
☒ Near/in Agricultural area	☒ Hay	☐ Town Supply
☐ Feedlot	☒ Waste vegetables	☒ Other <i>Trough.</i>
	☐ Cannery waste	☒ Flood drains.

11-10-96 confirmed.

Source of Residues (tick all possibilities) and provide brief details

☒ Feed supply	<i>Round bales of Sorghum dumped in paddock from another property.</i>
☒ Run-off from farming area	<i>Extensive farming area above property.</i>
☒ Grazing close to agricultural or horticultural areas	<i>Extensive horticultural production area.</i>
☐ Access to rubbish tip	
☐ Use of contaminated spraying equipment	
☐ Chemical treatment (termites, vermin insects etc.) of:	
☐ yards	
☐ fence posts	
☐ sheds	
☐ silos	
☐ power poles	
☐ Other	<p><i>Cattle have been grazing water couch in front gully - This grass does have silt from flooding.</i></p> <p><i>The old airstrip was used for spraying. There is a report of Soil Testing on the strip with negative result, but no documentation.</i></p> <p><i>It has been brought to my notice that waste manure are dumped in the paddock from Grading shed. This could be the source - from other properties.</i></p>

11-10-96

Annemarie,
Please fax letter & map to owner & see if they can advise where the spraying occurred & how long ago spraying occurred. See if they can advise volumes of chemicals stored etc.

COPIED ON
21 AUG 2002
Form F(2) (page 3 of 5) - 7700

bcr008
printed 18/12/96

Property : QHGT7147
(QHGT7147)

OWNER :

Sch 4 - Personal information

GAITON QLD 4343

Submitter: ID DAMES
PO Box 102

TOONDOMBIA QLD 4350

CHEMICAL RESIDUES
Traceback - Sample Analysis Report

Page: 1

Lab	Sample No	Date	Analysis	Species	Sample Type	Submitter	Comments	Chemical	Result (mg/kg)
	TNF12262	16/09/96	OCOP	not appl	soil	DAWES	D 1/ HAY GULLY	DDE	0.060
	TNF12263	16/09/96	OCOP	not appl	soil	DAWES	D 2/ HAY HILL	Endosulfan 1	0.270
	TNF12264	16/09/96	OCOP	not appl	SOIL	DAWES	D 3/ DEBRIS GULLY	Endosulfan 2	0.310
								Endosulphan Sulphate	0.130
	TNF12265	16/09/96	OCOP	not appl	soil	DAWES	D 4/ SOIL GULLY	Endosulfan 1	0.430
								Endosulfan 2	0.290
	TNF12266	16/09/96	OCOP	not appl	soil	DAWES	D 5/ SOIL SWAMP	Endosulphan Sulphate	0.080
								Endosulfan 1	0.210
	TNF12267	16/09/96	OCOP	not appl	soil	DAWES	D 6/ SOIL AIRSTRIP	Endosulfan 2	0.750
								Endosulphan Sulphate	0.100
	TNF12268	16/09/96	OCOP	not appl	soil	DAWES	D 7/ SOIL SHED FLOOR	Endosulfan 1	101.000
								Endosulfan 2	99.000
								Endosulphan Sulphate	229.000
								Endosulfan 1	504.000
								Endosulfan 2	534.000
								Endosulphan Sulphate	870.000

This is not actually the shed floor but 2 areas

Checked :

Date : 18/12/21

AGRICULTURAL PESTICIDES (07 3362 9449))

File A

13-016

18 of 26

288 Edward Street • Brisbane, Queensland • PO Box 2771 Brisbane QLD 4001 • AUSTRALIA
Telephone (07) 3227 7370 • Facsimile (07) 3247 3278 • www.epa.qld.gov.au

COPY

Enquiries Annemarie Dalton

Telephone (07) 3227 7370

Your reference

Our reference 6/CH3180 Now Lots 4 & 6 RP900732

8th August 2002

Sch 4 - Personal information

Gatton Qld 4343

Dear Sir/Madam

Lot 6 CH3180 – Now lots 4 & 6 RP900732 – Clifton Road, Tenthill

We are in the process of validating sites for the Environmental Management Register (EMR). In order to determine whether or not the above site should be listed on the EMR, we are seeking information with regards to the land use (past/present) and any notifiable activities, which may have occurred on it.

Information provided from council states that this site might have been used for the notifiable activities of Aerial Spraying & Pest Control. Sites on which a notifiable activity has occurred must be listed on the Environmental Management Register (EMR). This is largely a land-planning tool, to prevent land that has been used for these activities being inappropriately developed for a more sensitive use, ie. industrial to residential.

I have attached a list of notifiable activities with their definitions, as well as an information sheet on the Management of Contaminated Land in Queensland.

Can you please confirm if your land is subject to any notifiable activities?

Thank you for your assistance. If you have any queries regarding this matter, please do not hesitate to contact me on (07) 3227 7370.

Yours sincerely

Annemarie Dalton
Registry Officer
Contaminated Land Unit

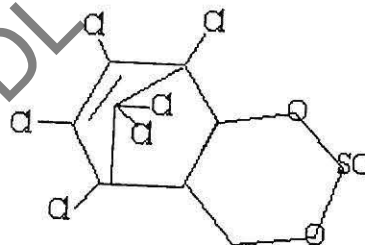
Encl.

Endosulfan

Quick Facts:

- **Chemical name:** 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzadioxathiepin 3-oxide
- **Trade names:** Fan, Thiodan, Afidanil, Cekulfan, Endocel, Endodhan, Endosol, Endostar, Thionex, Cyclodan, Thimul, Thionex, Phaser, Thiodan, Devisulfan, Insectophene, Hoe 2671, Malix
- **Pesticide Type:** insecticide, acaricide
- **Class:** organochlorine (chlorinated hydrocarbon)
- **Use:** cotton, apples, pecans, various row vegetables, grapes, pears, peaches
- Endosulfan is mutagenic in studies on yeast and bacteria.
- Endosulfan is a suspected endocrine disrupter.
- Endosulfan belongs to the same class of pesticides as DDT; it is highly persistent in the environment and has a high potential for bioaccumulation and biomagnification
- Very little is known about the toxicity and fate of endosulfan degradates.

Chemical Structure



Background

Endosulfan belongs to the class of pesticides known as organochlorines. These compounds are characterized by their high level of persistence in the environment, and their ability to bioaccumulate in animal tissue. Organochlorines, also known as chlorinated hydrocarbons, are insoluble in water and

are usually highly soluble in fat. The chemicals absorb and remain in the fat cells of exposed animals. Effects of the organochlorines are sometimes greatest at the highest levels of the food chain, when large numbers of contaminated prey are consumed by top-level predators. This process, biomagnification, is what occurred when DDT, another organochlorine, was used extensively in the U.S. in the early 1970's. Peregrine falcons and bald eagles consumed fish exposed to DDT and accumulated toxic levels of the pesticide, resulting in reproductive failure.

Endosulfan is a Persistent Organic Pollutant (POP). It persists in the environment for extended periods of time, increasing the exposure risk of many non-target animals. It has been detected in wells and surface waters, most likely due to run-off or drift during application. It volatilizes easily after application and is transported to areas distant from the application site. It has been detected in ice and snow samples of the arctic.

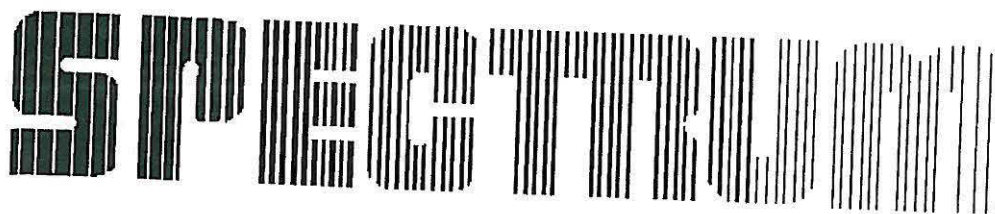
Environmental Effects

Fate

- **Persistence:** endosulfan is moderately persistent in soils with an average half-life of 50 days. However, under certain conditions, endosulfan can be very long-lived in soils. The EPA has reported a half-life of 200 days but did not state the conditions under which the data were derived. In water, endosulfan has a high potential for contamination of waterways near the site of application. It is one of the most commonly detected pesticides in U.S. water. A study in 1982 found 24 of 154 wells in Ohio contaminated with endosulfan. Endosulfan is extremely persistent in aquatic systems under acidic conditions. Endosulfan has been detected in arctic ice and snow samples, attesting to its high degree of persistence. Published studies examining the toxicity and fate of endosulfan break down products are not available.
- **Solubility:** endosulfan is insoluble in water but is soluble in toluene and hexane.
- **Soil mobility:** Endosulfan is moderately mobile in soils, and will adhere to soil particles to a degree that contamination of surface waters due to runoff is a serious risk.
- **Bioaccumulation:** Endosulfan has a high potential for bioaccumulation. In studies that examined bioconcentration in fish, the bioconcentration factor was 11,538X. Residues of endosulfan have been detected in mussels, oysters and fish, in the field.

Ecotoxicity

- **Endosulfan is very highly toxic to aquatic fauna.** Both vertebrate (fish, amphibians), and invertebrates (mollusks, insects, gastropods) are susceptible with LC 50's in the range of 1 ppb for many species.
- Endosulfan is highly toxic to mammals. The LD 50 for a rat is 18 mg/kg, for a cat, the LD 50 is 2 mg/kg. It is toxic through oral and dermal routes of exposure.
- Endosulfan is highly toxic to birds. The LD 50 for mallards is 12 mg/kg. Studies examining the chronic effects of endosulfan and its degradates are incomplete. Given the persistence of endosulfan in the environment and its potential for bioaccumulation, it is reasonable to expect chronic effects to birds at sub-lethal doses.



Chemical Fact Sheet

Chemical Abstract Number (CAS #)	1031078
Synonyms	Endosulfan sulfate 6,9-Methano-2,3,4-benzodioxathiepin, 6,7
Analytical Methods	EPA Method 508 EPA Method 608 EPA Method 617 EPA Method 625 EPA Method 8080A EPA Method 8081 EPA Method 8250A
Molecular Formula	$C_9H_6Cl_6O_4S$
Use	SRP: Not commercially produced. Endosulfan is its precursor.
Melting Point	181 DEG C
Molecular Weight	422.95
Environmental Impact	<p>Endosulfan sulfate will be found in the environment as a result of the use of endosulfan as an insecticide. If endosulfan sulfate is released to the soil, it will be expected to bind to the soil, and will not be expected to leach to the groundwater. No information about hydrolysis in soils was found; however, this may be an important fate process based on reported hydrolysis half-lives for endosulfan isomers of 35.4-37.5 days at pH 7.0 and 150.6-187.3 days at pH 5.5. Biodegradation may be an important fate process with a half-life of 11 weeks for endosulfan sulfate incubated with mixed cultures from a sandy loam soil. If endosulfan sulfate is released to water, it will be expected to adsorb to the sediment and may bioconcentrate in aquatic organisms. Photolysis may not be an important fate process based on the stability of thin films of endosulfan sulfate exposed to light >300 nm. Endosulfan sulfate was not degraded in standard screening tests using settled domestic wastewater as inoculum. However, endosulfan sulfate has been reported to be biodegraded when exposed to mixed cultures from a sandy loam soil. Hydrolysis in water may be an important fate process based on reported hydrolysis half-lives for endosulfan isomers of 35.4-37.5 days at pH 7.0 and 150.6-187.3 days at pH 5.5. Evaporation from water may be an important transport process based on an estimated half-life of 43 hr for evaporation from a river 1 m deep, flowing 1 m/sec with a wind velocity of 3 m/sec. Evaporation from lakes and deeper streams and rivers will be slower and adsorption to sediments will slow evaporation. If released to the atmosphere, it will react with hydroxyl radicals with a resulting estimated vapor phase half-life in the atmosphere of 1.23 hr. Photolysis may not be an important fate process based on the stability of thin films of endosulfan sulfate to light >300 nm. Exposure to endosulfan sulfate will result from the ingestion of contaminated food.</p> <p>Aquatic Fate: Terminal residues found in aquatic ecosystems include endosulfan sulfate.</p>

<p>Environmental Fate</p>	<p>Endosulfan sulfate is the major product expected under aerobic conditions in slightly acidic waters. Oxidation is slow under anaerobic conditions. Aquatic Fate: In aquatic environments (water and sediment), endosulfan diol was present along with smaller amounts of the sulfate. TERRESTRIAL FATE: If endosulfan sulfate is released to the soil, it will be expected to bind to the soil based on estimated Koc values, and will not be expected to leach to the groundwater. No information about hydrolysis in soils was found; this may be an important fate process based on reported hydrolysis half-lives for endosulfan isomers of 35.4-37.5 days at pH 7.0 and 150.6-187.3 days at pH 5.5. Biodegradation may be an important fate process with a half-life of 11 weeks reported when endosulfan sulfate is incubated with mixed cultures from a sandy loam soil, and endosulfan sulfate has been reported to occur in the metabolic pathway of endosulfan exposed to mixed cultures from a sandy loam soil(2, SRC). AQUATIC FATE: Little information about the fate of endosulfan sulfate in water was found. If endosulfan sulfate is released to water, it will be expected to adsorb to the sediment and may bioconcentrate in aquatic organisms. Photolysis may not be an important fate process based on the stability of thin films of endosulfan sulfate to light >300 nm. Biodegradation may not be an important fate process since endosulfan sulfate was not degraded in standard screening tests using settled domestic wastewater as inoculum. However, endosulfan sulfate has been reported to occur in the metabolic pathway of endosulfan exposed to mixed cultures from a sandy loam soil. No information about hydrolysis in water was found; this may be an important fate process based on reported hydrolysis half-lives for endosulfan isomers of 35.4-37.5 days at pH 7.0 and 150.6-187.3 days at pH 5.5. Evaporation from water may be an important transport process based on an estimated half-life of 43 hr for evaporation from a river 1 m deep, flowing at 1 m/sec with a wind velocity of 3 m/sec. Evaporation from lakes and deeper streams and rivers will be slower and adsorption to sediments will slow evaporation processes. ATMOSPHERIC FATE: If released to the atmosphere, endosulfan sulfate will react with hydroxyl radicals with a resulting estimated vapor phase half-life in the atmosphere of 1.23 hr. Photolysis may not be an important fate process based on the stability of thin films of endosulfan sulfate to light >300 nm. TERRESTRIAL FATE: IN A CONTROLLED ENVIRONMENT, LOSSES FROM GLASS & PLANT SURFACES WERE IN THE DECREASING ORDER ENDOSULFAN ETHER, ENDOSULFAN I, ENDOSULFAN II, ENDOSULFAN SULFATE, ENDOSULFANDIOL. IN THE GREENHOUSE, HOWEVER, UNDER SEMICONTROLLED CONDITIONS, THE SEQUENCE OF LOSS FROM PLANT SURFACES WAS, IN DECREASING ORDER, ENDOSULFAN I, ENDOSULFAN ETHER, ENDOSULFAN II, ENDOSULFANDIOL, ENDOSULFAN SULFATE.</p>
<p>Drinking Water Impact</p>	<p>Residues found in the Brantas River system, and Madura Sea, and the canals and ponds in the Brantas River system for endosulfan sulfate collected during March, where a major portion of the spraying was also carried out during this period (ie rainy season, January-April (range) were: Canals <0.01 - 0.55 ug/l; Fish ponds: <0.01-0.44 ug/l; River system 0.1-0.45 ug/l; Madura Sea: <0.01-0.28 ug/l. No endosulfan sulfate residues were detected (method sensitivity 10 ug/l) in well waters located near treated fields in Wisconsin and Florida 282 and 100 days respectively, after the last endosulfan application. SURFACE WATER: USEPA STORET database, 850 samples, 0% pos. EFFL: USEPA STORET database, 605 samples, 1.6% pos, median <0.020 ppb. National US Urban Runoff Program, through July, 31, 1982, 15 cities, 0% pos.</p>

DISCLAIMER - Please Read

Return to :



Alphabetical List of Compounds



List of Compounds by CAS Number

List of Services

Jacinta Griffin

From: Munro Mortimer [munro.mortimer@epa.qld.gov.au]
Sent: Friday, 4 July 2003 5:34 PM
To: jacinta.griffin@epa.qld.gov.au
Cc: Tony Bradshaw
Subject: Endosulfan fate in the environment

Endosulfan alpha and beta (sometimes referred to as endosulfan 1 and 2) breakdown to endosulfan sulfate (EDS), which is very persistent and toxic. Alpha breaks down faster than Beta. In soils, the half lives for this step (transformation to EDS) is days to weeks depending on soil chemistry and environmental conditions.

Half life in soils in field studies have been as long as 6 months. The NRA review of endosulfan in 1997 noted several studies showing persistence of toxic residues (endosulfan and breakdown products) in soils with half lives of 6 months. However, as Tony suggests, high concentrations may degrade at a slower rate because the soil and water microorganisms which are involved in degradation are themselves knocked out by the toxicity. However even if 6 months is applicable, there would still be ppms after 7 years. The NRA review noted that the half life in some soils could be as long as 6 YEARS, and in anaerobic soils, EDS can revert to endosulfan.

Degradation of EDS by microorganisms seems to be the most important route, but even in a sterile environment, endosulfan sulfate can break down by physicochemical processes - UV light, heat, hydrolysis to some extent. A lot depends on the conditions where the contamination occurred. Dry soil versus wet soil, soil pH, soil organic matter, depth of water table, exposure to rainfall, oxygen, depth of contaminated layer relative to heating by the sun, etc. Breakdown is more rapid in alkaline soils.

Accordingly unless the conditions have been favourable to breakdown, there is every possibility that your site is still seriously contaminated. Note there is both a human health and environmental risk associated with endosulfan contamination.

Dr Munro R Mortimer
Senior Principal Scientist - Investigations
Waterways Scientific Services
Division of Environmental Sciences
Queensland Environmental Protection Agency
80 Meiers Road, Indooroopilly, Qld 4068

(ph 07 3896 9237; fax 07 38969232)

original - Brad

copy (File)

DEPARTMENT OF ENVIRONMENT AND HERITAGE
WASTE MANAGEMENT BRANCH
CONTAMINATED LAND SECTION

11/1/17

Sender: David Ward
Facsimile no: (07) 227 8341
Telephone no: (07) 227 8143
Address: 12th floor, 160 Ann Street, Brisbane, Queensland
Postal Address: PO Box 155
BRISBANE ALBERT STREET QLD 4002

CONTAMINATED
LAND SECTION

07 MAR 1995

Receiver: Brad Domrow
Facsimile no: (07) 462 3269
Business/Section: Gatton Shire Council
Date: 22 April 1994
Number of pages: 9 (including coversheet)

LOAM EXTRACTION

Council unable
to supply further
info. re amounts
Chem/fuel storage
TRY TO FOLLOW UP.

RE : CONTAMINATED SITES REGISTER NOTIFICATION

Brad,

Would you please supply the required details regarding
present) for the following properties to determine entry
Register and fax it back to me. If you have any additional information on the
properties, for example other uses like landfills, fuel storage etc, please put it in
the comments:

RTI DL RELEASE - EHP

s.73 - Non responsive information

GATTON FAX
7/3/95
P.3-3

s.73 - Non responsive information

Lot 6 on CH3180

Gatton-Clifton Road, Tenthill

Could you please supply the following information:

Correct site name and property description as owner claims no such name as Zischke Pest Control. Area was used for crop dusting /spraying air field.

If pest control operation please supply quantities of chemicals used. Not known

Fuel Storage

☒ Y ☐ N

(if yes then fill in the following table)

	Class 3.1 (L)	Class 3.2 (L)	Class 3.3&3.4(L)
Above Ground	Not Known		
Below Ground			

COPY