

Allied Feeds Project Direct Thermal Desorption (DTD) Plant Testing

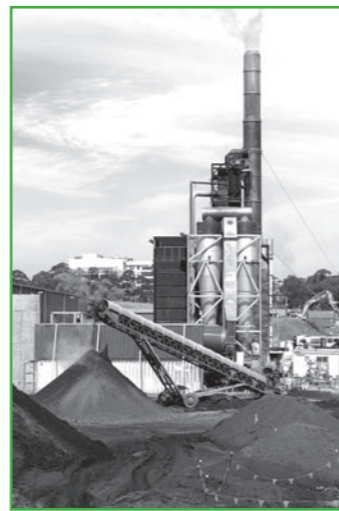
Soil treatment operations in the DTD plant were suspended in July 2007 when emission stack test results for the contaminant dioxin marginally exceeded the emission criteria. To recommission the DTD plant, a series of new tests are currently being undertaken.

Thiess Services commenced processing clean soil in the DTD plant in October 2007 as part of the recommissioning. Tests using contaminated soil

commenced in November 2007. Steam from the DTD plant's stack will be visible during the testing.

The levels of particulates, dioxins and furans in DTD plant stack emissions will be measured throughout the tests. In addition, a full suite of quality assurance (QA) samples will be collected and held for analysis pending the test results.

A complete mechanical and electrical check has been performed on the DTD plant in preparation for the clean and contaminated soil testing.



The recommissioning plan has been approved by the Department of Planning and the Department of Environment and Climate Change.

Local residents are reminded that the management of dust particles smaller than 10 microns (PM10 dust) and volatile emissions from soil excavations are the most significant risk factors during remediation projects. DTD plant emissions generally constitute less than 1% of total project air emission risks.

The Rhodes Community Consultative Committee (RCCC)

The RCCC is comprised of approximately 20 residents from communities surrounding the Rhodes Peninsula including Rhodes, Concord West, Homebush Bay, Liberty Grove, Meadowbank, West Ryde and Melrose Park. An additional 20 members represent developers and remediators working in the area; State Government Departments such as the Department of Planning, the Department of Health, and the Department of Environment & Conservation; and Local Government Councils such as the City of Canada Bay Council and Ryde Council.

At monthly meetings the committee is presented with updates and data on the remediation and development projects by the proponents involved. The RCCC has an independent Chairperson, **Mr John Kent**. John's contact details are **0419 497 033** or **jk@wvwsydney.com**

You are most welcome to join the committee or attend a meeting as a visitor.

For information about the next meeting, please call the Thiess Services Community Contact Line on **1800 009 414**.

Project Activities - the next 3 months

Lednez & Homebush Bay project

- Commission pre-treatment building and emissions control system;
- Establish DTD treatment plant and undertake commissioning trials;
- Commence full scale treatment operations;
- Progress Stage 3 excavations;
- Progress Stage 3 backfilling operations;
- Progressive validation of Stage 3;

- Construct sections of seawall in Stage 3 area;
- Install sewer in Stage 3 area;
- Continue environmental monitoring;
- Review results of the Homebush Bay sediment excavation trial;
- Commence full scale Homebush Bay remediation activities.

Allied Feeds project

- Excavation of contaminated materials requiring thermal treatment;
- Recommission the DTD plant including stack compliance tests;

- Recommence commercial scale thermal treatment operations;
- Process materials for thermal treatment in the pre-treatment building;
- Validation testing of excavated surfaces and treated materials;
- Remove surplus stockpiled materials from the site;
- Install sheet piles for seawall construction;
- Demolish and reconstruct the seawall;
- Ongoing water treatment plant operations;
- Continue environmental monitoring including stack compliance tests.

Community Contact Details

We value your feedback. If you have any questions or concerns, please let us know.

Ph: 24 hour toll free line: 1800 009 414 **E-mail:** rhodesremediation@thiess-services.com.au

Web: www.rhodesremediation.com.au **Post:** 40 Walker Street, or PO Box 3064, Rhodes NSW 2138

Thank you for your cooperation and patience during these environmental remediation works.

Rhodes
REMEDIA
PROJECTS
Homebush Bay and the former
Lednez and Allied Feeds sites



24 hour toll free line
1800 009 414
www.rhodesremediation.com.au

NEWSLETTER

December 2007, Issue 9

To the Community Member
Rhodes Remediation Projects
Community News

Rhodes Blood Serum Dioxin Study

In response to community concern about the possibility of dioxin exposure from the Rhodes peninsula remediation process, NSW Health is conducting a study to measure community blood dioxin levels over the remediation period.

The study involves the collection of blood samples from Rhodes residents and from a comparison group at three points in time – before remediation began in 2003, at the mid-point of remediation in 2007, and finally at the completion of the remediation process. In 2003, 60 blood samples were collected from Rhodes residents and 600 samples were collected from the comparison group. In 2007 (mid-point), 52 samples were collected from the same Rhodes residents and 200 samples from the same comparison group, which will be sufficient to undertake the mid-point testing. These samples will now be sent to Germany for dioxin testing and analysis. The findings of the mid-point analysis will be reported to the community as soon as possible.

The final blood sample will be collected and analysed at the end of the remediation process.

More details about the study are available on the NSW Health website:

<http://www.health.nsw.gov.au/public-health/ehb/rhodes/index.html>

Updates on the study will be provided at the community liaison group meetings and through this newsletter.

Article provided by Dr Vicky Sheppard, co-ordinator of the Rhodes Serum Dioxin Study, NSW Health.



Above: Graham Burgess from the SSWAHS Public Health Unit with some of the residents participating in the Rhodes Blood Serum Dioxin Study.

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- Human health risk assessment
- DTD plant emissions testing
- Project activities – next 3 months

Register for an 'Odour Alert'

Do you have an e-mail address? Would you like to be informed of possible odour impacts in the local community whenever highly odorous wastes are being excavated?

If so, send your name, address, phone number and e-mail address to: rhodesremediation@thiess-services.com.au

Thank you to residents who have already registered for 'odour alerts'. You do not need to contact us again.

Human Health Risks

A report about potential health risks for people living near the Lednez remediation project at Rhodes has been completed. The report was commissioned after higher than usual concentrations of volatile organic compounds migrated from excavated soils in May 2007.

Volatile organic compounds (VOCs) are a group of chemicals which can create odour. This occurs because they 'volatilise', or change from liquid to vapour, when disturbed. VOCs

THE CLEAN UP CONTINUES

Thiess Services has been contracted to remediate two neighbouring sites at Walker Street, Rhodes. The sites are known as the former Lednez/Union Carbide site and the former Allied Feeds site. Both sites require remediation (a clean-up of the soil) as a result of past chemical manufacturing works on the former Lednez/Union Carbide site. Remediation works commenced in 2005.

For more details on the history of these sites, to view environmental information or to download copies of the newsletters, visit www.rhodesremediation.com.au

Strict environmental controls and standards are being implemented on both sites to ensure the health and safety of workers and the community. All work is being undertaken in close consultation with Local Government and community members, as well as with State Government agencies including the Department of Environment and Climate Change, NSW Waterways, the Department of Planning and NSW Health.

are present in the contaminated soil being excavated during the Rhodes Remediation Projects and are responsible for the odours detected periodically. Exposure to VOCs can sometimes cause physical irritation or disease.

Dr Garry Smith, an independent health and environment risk specialist from the company HLA ENSR, prepared the report for Thiess Services. Entitled *Screening Human Health Risk Assessment: Volatile Organic Compounds in Air at the Lednez Remediation Site, Rhodes, Sydney*, the report was released on 30th October 2007. It reviews data sets on VOCs from early 2006 to mid 2007 and analyses air quality models created from them. NSW Health, the Department of Environment and Climate Change (DECC) and the Rhodes Community Consultative Committee (RCCC) were instrumental in the creation of the report.

The following information is a summary of the report's approach and its main findings.

Air Risk Assessment

Risk assessment aims to estimate 'upper-bound' health risks. Therefore, actual or real risks are certainly no higher, and probably lower, than what is estimated. The report looks at health risks for someone in the local community who is subjected to a 'worst case' scenario of airborne chemical exposure from the Lednez site. This is a hypothetical person because actual people who live in different residences, and who come and go from the local area, would have less exposure than this worst case estimate.

As well as considering the exposure of a hypothetical person, the toxicity of the chemicals found on the Lednez site has been taken into account in developing the risk assessment. By considering both of these factors, the potential health risks for adults and children living close to the

site have been estimated.

This approach to risk assessment is based on established procedures that are reflected in NSW legislation and the National Environmental Pollution Measures, or NEPMs. It also utilises World Health Organisation and US Environmental Protection Agency-based guidelines.

Chemicals of Potential Concern

For the period covered by the report, VOC levels in the air were routinely monitored at the Lednez site. Laboratory analysis of individual chemicals in the air samples has shown that VOCs and semi-VOCs of potential concern include: benzene, chlorobenzene, chloroform, 1,4-dichlorobenzene, ethylbenzene, hexachlorobenzene, styrene, toluene, trichloroethene and xylenes.

Cancer Risk

In 2005 the NSW DECC established the 'Acceptance Criteria for Risk and Hazard Index'. Dr Smith's report uses these criteria to assess the potential carcinogenic or cancer risk for a person living near the Lednez site. His report found that for the 18 month period, the risk of developing cancer from exposure to airborne chemicals from the site was low.

The DECC guidelines state that a cancer risk of less than one in one million is acceptable i.e. a one in one million chance of getting cancer in a lifetime from chemical exposure is considered negligible. Risk between one in one million and one in ten thousand requires the implementation of 'best practice' measures to reduce airborne chemicals - so that the risk reduces accordingly. And, risk greater than one in ten thousand is not acceptable.

The report found that the cancer risk for someone living at Blaxland Road, Rhodes

(the eastern residential receptor), was generally less than one in one million and therefore acceptable. However, at Gauthorpe and Marquet Street, Rhodes (the southern residential receptor), the risk was between one in one million and one in ten thousand, and consequently

a reduction of VOC emissions by 'best practice' measures is required.

The chemical benzene is the main contributor to VOC emissions from the Lednez remediation site. Table 1 summarises the cancer risks from

benzene exposure estimated in the report. It shows that at the Gauthorpe and Marquet Street residential receptor, the estimated cancer risks were between four and seven in one million for the 18 month period.

TABLE 1 Estimated Cancer Risks - 18 Months' Exposure

Chemical	Residential Receptor	Cancer Risk (18 months)
Benzene - Adult	Blaxland Rd, Rhodes	1 in one million
	Gauthorpe and Marquet St, Rhodes	4.2 in one million
Benzene - Child (0-5 years old)	Blaxland Rd, Rhodes	1 in one million
	Gauthorpe and Marquet St, Rhodes	4.3 in one million
Benzene - Child (5-15 years old)	Blaxland Rd, Rhodes	1.5 in one million
	Gauthorpe and Marquet St, Rhodes	6.5 in one million

Non-Cancer Risk

Non-cancer health risks can result from short-term or long-term chemical exposure and are associated with adverse impacts on the blood, organs or nervous system. Unlike carcinogens, they do not affect cell DNA.

Again, Dr Smith's report uses the NSW DECC 'Acceptance Criteria for Risk and Hazard Index' to assess the potential non-cancer risk for a person living near the Lednez site. This approach

calculates exposure levels for each chemical of concern and compares them to acceptable levels. Then, all of the values are added together to give what is called the hazard index, or HI. The DECC has indicated that the acceptable HI for a mixture of chemicals is 0.2 or less. When the HI falls between 0.2 and 10, 'best practice' measures for reducing airborne VOC levels should be used to bring the HI as close as possible to 0.2. A HI of greater than 10 is not acceptable.

The report concludes that the modelled

exposures for the period are generally below the regulatory guidance levels for short-term exposure.

For long-term exposure, the estimates for non-cancer risks are low for individual chemicals. However, the combined chemical risk, or HI, falls between 0.2 and 10, the range where the DECC would like a reduction by 'best practice' measures. Table 2 summarises the long-term non-cancer risk estimated in the report.

TABLE 2 Estimated Non-Cancer Risks for Long-Term Exposure

Residential Receptor	Adult or Child	Hazard Index or HI ¹
Blaxland Rd, Rhodes	Adult	0.49
Gauthorpe and Marquet St, Rhodes	Adult	1.03
Blaxland Rd, Rhodes	Child	0.64
Gauthorpe and Marquet St, Rhodes	Child	1.10

¹ Based on 18 months exposure estimates for 2006 and 2007

Conclusions

The report found that although VOC levels are acceptable or close to acceptable from a disease and health risk point of view, they may cause physical irritation in some people. Therefore, the report

recommends that rapid daily assessment of VOC concentrations be undertaken at the eastern and southern Lednez site boundaries. Additionally, the report recommends that VOC levels be compared with on-site weather data so that 'best practice' measures

for minimising VOC emissions can be implemented.

To review the entire *Human Health Risk Assessment* go to the 'Health and Safety' section of our website www.rhodesremediation.com.au