



Intractable Waste Disposal Facility Mount Walton East

Information Handbook



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1. Introduction

1.1 Background

This document has been prepared to provide information relating to the establishment, operation, management, monitoring and regulation of the Intractable Waste Disposal Facility, Mt Walton East (IWDF).

The IWDF is about 475 kilometres north-east of Perth and is located on 25 square kilometres of Crown Reserve Land, within the Shire of Coolgardie (Figure 1). Access to the IWDF is by a 100-kilometre unsurfaced road that extends northward from Boorabbin siding on Great Eastern Highway.

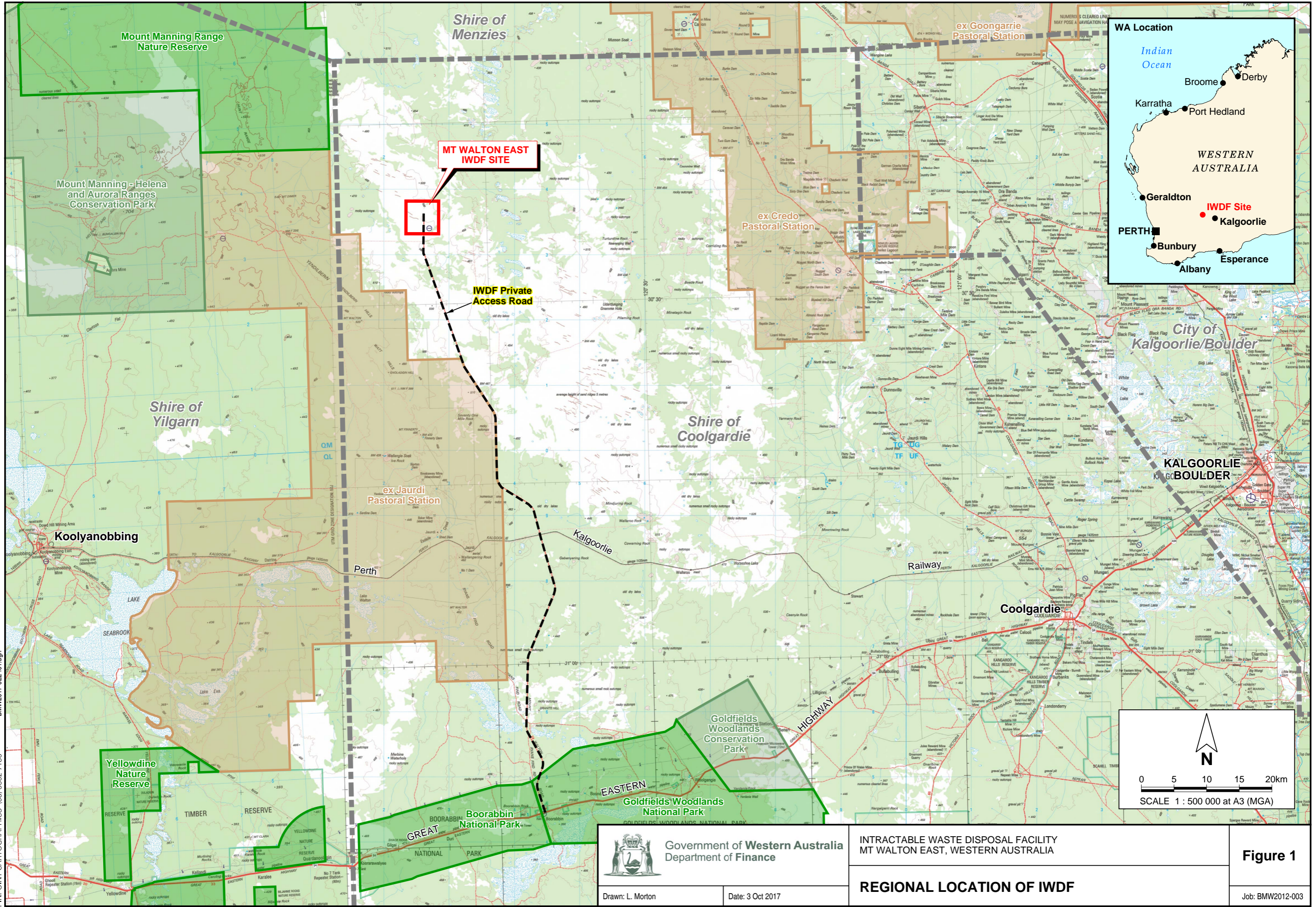
The IWDF, established in 1992, is Australia's first long-term disposal site for intractable waste. The IWDF is owned by the State Government and can only be used for intractable waste generated in Western Australia.

Intractable wastes are materials that are a management problem by virtue of their toxicity or chemical or physical characteristics which make them difficult to dispose of or treat safely (DWER, 2019). Intractable wastes include radioactive wastes which need time to break down or decay to safe levels for the environment, and chemical wastes including industrial by-products like arsenic trioxide, sheep dip and pesticides which contain hazardous chemicals that cannot be easily destroyed.

1.2 The need for intractable waste disposal in Western Australia

For the benefit of the community and the environment, there is a need to dispose of all types of wastes, including intractable wastes. The objective of intractable waste disposal is to isolate the waste permanently from the environment as safely and economically as possible.

Before the IWDF was established there was no approved way to dispose of intractable wastes in Western Australia. Authorities recommended that wastes be collected and stockpiled ready for a time when there was a suitable site at which to dispose of them. For more than 20 years, low-level radioactive waste had been collected and stored by the Radiation Health Section of the Health Department of Western Australia at the Queen Elizabeth II Medical Centre. By the late 1980s this store was approaching capacity and a solution was needed.



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Government of Western Australia
Department of Finance

Drawn: L. Morton Date: 3 Oct 2017

**INTRACTABLE WASTE DISPOSAL FACILITY
MT WALTON EAST, WESTERN AUSTRALIA**

REGIONAL LOCATION OF IWDF

Figure 1

Job: BMW2012-003

The IWDF provided that solution. In Western Australia intractable waste for which there is no reuse, recycle or destruction option can be taken to the IWDF and buried in trenches or shafts according to the appropriate codes and guidelines. Disposal operations or campaigns are undertaken irregularly. Physical waste disposal involves packaging the waste, transporting the waste to the IWDF, and burying the waste in trenches or deep shafts that are backfilled with natural clays or concrete.

1.3 Why Mt Walton East?

1.3.1 Site selection criteria

The *Code of Practice for the near-surface disposal of radioactive waste in Australia (1992)* (NHMRC, 1993) defined the site selection criteria for near surface disposal of radioactive waste at the time the IWDF was established. The criteria are summarised as:

- geological stability;
- remoteness;
- arid climate (with evaporation exceeding rainfall by ten times);
- lack of groundwater;
- presence of clay to limit the potential for migration of wastes;
- lack of potential for flooding;
- lack of potential for mineral resources;
- lack of potential for agriculture;
- absence of human population, or potential for human population;
- lack of special environmental features;
- absence of known rare species or ecosystems; and
- lack of special cultural or historical significance.

The most recent *Code for Disposal Facilities for Solid Radioactive Waste* (ARPANSA, 2018) has similar selection criteria.

The Mt Walton East site is an ideal location for the IWDF because it meets all the above criteria. The remoteness of the site was chosen as much to allay community fears as to reduce the risk from disposal operations.

Mt Walton East was chosen as the preferred site for the IWDF after extensive scientific investigations. Studies proved that the site had no significant environmental, historical, or cultural characteristics or known rare species or ecosystems. The geology of the site was assessed by using geophysics and drilling. The results showed

that there was no permanent groundwater and that the underlying geology consisted mostly of clay down to the granite bedrock.

Studies in the areas of Aboriginal and archaeological significance, flora and fauna, groundwater and geology helped in the establishment of appropriate objectives and management plans for the IWDF. Key findings from these studies are provided below.

1.3.2 Aboriginal and archaeological significance

A study of ethnographic and archaeological sites at and near the IWDF was conducted in 1988 prior to the commissioning of the site and included consultation with Aboriginal leaders in the region. The study concluded that there were no sites of Aboriginal or archaeological significance within a 15 km radius of the site.

1.3.3 Flora and fauna

Several flora and fauna surveys of the region have been undertaken since 1988. While no declared rare flora has been discovered at the site, some priority species have been identified and measures are now in place to ensure these species are conserved.

1.3.4 Groundwater

The IWDF lies in an area where, despite extensive drilling over the site, no groundwater has been encountered down to bedrock. Any water derived from rainfall is either evaporated or infiltrates the colluvial sediments on the site, where it eventually percolates to the top of the silcrete layer before either being taken up by plants, evaporating or migrating slowly off site. Water migration off-site would eventually drain into the colluvial, and alluvial sediments of the ancient drainage systems located to the east and west of the IWDF site. Groundwater in these drainage areas is generally saline to hypersaline and has no agricultural or human use.

In 1995, two monitoring bores were constructed to bedrock to investigate groundwater conditions adjacent to the existing radioactive waste and chemical waste disposal areas and were dry at the time of construction. Subsequent monitoring has not found any groundwater in either of these monitoring bores. In 1999, six further monitoring bores were constructed down to bedrock in the general vicinity of the chemical and radioactive waste disposal area. In 2009, an additional monitoring bore was constructed down to bedrock in the vicinity of the 2008 disposal trench. Monitoring to date has not found any groundwater in any of these bores (see Section 5).

1.3.5 Geology

The IWDF lies in the central eastern portion of the Achaean Yilgarn Block, a tectonically stable, ancient craton comprising granitic rocks and intervening greenstone belts which contain a variety of volcanic, metamorphic, and sedimentary rocks. The Yilgarn Block generally has low seismic activity.

In geological terms the IWDF site is typical of areas overlying deeply weathered granite domes. The profile generally comprises four main lithologies and from the surface these are:

1. Colluvial sand - comprises yellow brown quartz sand overlying nodular red brown clayey sand. It averages about 1.5 metres thick.
2. Silcrete - comprises kaolinitic clay which has been variably indurated with silica to form a hard cap over underlying lithologies. This cap averages about 3 metres thick.
3. Kaolinitic clay - comprises soft white kaolin weathered from pre-existing granite. As a result, the clays contain relict quartz phenocrysts. This important layer houses the buried waste and on average is more than 15 metres thick over the site. It is absent in several areas, especially where the bedrock is shallow, but elsewhere has a maximum thickness of 32.5 metres.
4. Granitoid basement - comprises a fine to medium grained leucocratic granite containing pegmatite and quartz veins. The basement topography varies over the site from 3.5 to 47 metres below the surface.

The lack of groundwater and the thickness of the kaolinitic clay layer are the key geological attributes of the site in terms of its function as an intractable waste repository because they preclude the transport of contaminants off-site.

1.4 Community Liaison Committee

1.4.1 Background to the Community Liaison Committee

When first proposed in the late 1980s, the proposal to establish the IWDF generated significant public interest in the Goldfields. This interest led to the establishment of the Community Liaison Committee (CLC) in 1988 which then comprised representatives of the local authorities, local business and local interest groups, and representatives of the Health Department of Western Australia (the first proponent for the IWDF) and their principal consultants. This original Committee met formally for the last time after the 1992 disposal of low-level radioactive waste at the IWDF.

The CLC was re-established in early 1995 and currently meets four times per year. The CLC is chaired by a representative of the current proponent for the IWDF.

1.4.2 Role of the Community Liaison Committee

The role of the CLC is to ensure that the community remains informed of activities at the IWDF and to have input into and to raise issues relating to the operation and management of the IWDF.

The Terms of Reference for the CLC are to:

- Provide a forum for interested community members to raise issues relating to the operation and management of the IWDF.
- Allow community representatives to receive and disseminate information regarding the IWDF to the broader community.
- Allow community concerns and issues to be conveyed to the proponent.
- Allow the community to provide input into how the IWDF is operated and managed.
- Provide the opportunity for technical experts to brief the community about environmental protection and public health with regard to the operation and management of the IWDF.
- Ensure all relevant data, plans and monitoring results relating to the IWDF are publicly available.

1.4.3 Membership of the Community Liaison Committee

The CLC comprises representatives from the:

- proponent for the IWDF;
- Facility Management Contractor (FMC) for the IWDF;
- members of the public;
- relevant local government authorities – elected members;
- relevant local government authorities – officers; and
- State government agencies with relevant regulatory responsibility for the IWDF e.g., the Department of Water and Environment Regulation (DWER).

All CLC meetings are advertised and are open to the public.

1.5 Recordkeeping

For radioactive waste, the IWDF must comply with the requirements of the *Code for Disposal Facilities for Solid Radioactive Waste* (ARPANSA, 2018). Section 3.2.7 details the recordkeeping requirements for the IWDF.

All essential IWDF radioactive waste disposal records are kept by both the Radiological Council, and the Department of Finance.

The recordkeeping section of the code requires site records to be kept at least until the end of the institutional control period (ICP) in at least two widely separated

locations, one of which must be the appropriate Commonwealth, state, or territory government archives.

The Radiological Council, the Department of Finance and all previous government proponents for the IWDF have legislated archiving requirements under the *State Records Act 2000* which outlines the requirements of government for the keeping of State records by government departments. Under the current Act electronic records designated as State archives are to remain in the custody of the agency that created or managed them. These records must be managed in accordance with State Records Commission Standard 8 – Managing Digital Information. As almost all the IWDF records are now in electronic format these records are required to continue to be held by the Radiological Council, the Department of Finance and if relevant all previous government proponents for the IWDF.

The Department of Finance's, State Records Office of Western Australia approved, Retention and Disposal Schedule will ensure the Department of Finance's compliance with the IWDF record keeping requirements now and into the future.

Proponent commitment 7.3 of Ministerial Approval 562 requires the proponent to maintain, update and make publicly available a waste register database for all waste disposed of at the IWDF. This database must detail the disposal method, source, type, quantity, and location of all waste disposed of at the IWDF. The database contains all relevant detail for radioactive and chemical waste disposals at the IWDF. The publicly available information from the database is available from the Department of Finance by emailing a request to IWDF-MountWalton@finance.wa.gov.au.

2. IWDF proponent history

There have been seven legal proponents over the life of the IWDF. Each proponent is discussed briefly below.

2.1 Health Department (1992 to September 1996)

The IWDF was the initiative of the Health Department of Western Australia. The Health Department established the IWDF to enable the disposal of low-level radioactive waste collected over many years and stored in the radioactive waste depository at the Radiation Health Section of the Health Department.

Although the Health Department was the legal proponent for the IWDF until around September 1996 the operational responsibility for the IWDF was transferred to the Environment portfolio in 1994.

2.2 Department of Environmental Protection (October 1996 to 30 June 1998)

Operations were undertaken directly by the Department of Environmental Protection (DEP) and the works performed by the Waste Operations Team.

2.3 Waste Management (WA) (1 July 1998 to January 2005)

Following amendments to the *Environmental Protection Act 1986* (EP Act) which took effect on 1 July 1998, and consequent completion of formal documentation in November 1998, Waste Management (WA) (WM (WA)) a body corporate of the then DEP, became the proponent for the IWDF under the EP Act. The IWDF was owned and operated by WM (WA) on behalf of the WA Government and senior officers in the DEP, working for WM (WA), managed the IWDF. The IWDF was operated under Ministerial Direction and was therefore monitored by the Environmental Protection Authority.

WM (WA) did not require a licence or other authorisations as normally conferred by the EP Act, to undertake a waste disposal operation at the IWDF. It was taken that WM (WA) complied with all the provisions of the EP Act. However, the standard environmental and regulatory approvals were required in relation to the specifics of each waste management operation. WM (WA) was also obliged to perform operations under the directions of the Minister of the Environment.

WM (WA), as the proponent for the IWDF, accepted responsibility on behalf of government for ongoing management of the wastes disposed at the IWDF, acceptance of waste for disposal and monitoring of the IWDF for the operational and institutional control period.

2.4 Department of Housing and Works (February 2005 to January 2009)

In February 2005, responsibility for the IWDF was transferred to the Department of Housing and Works (DHW) and DHW was subsequently designated as the proponent for the IWDF for the purposes of environmental approval under Part IV of the EP Act.

DHW as the proponent for the IWDF accepted responsibility on behalf of government for ongoing management of the wastes disposed at the IWDF, acceptance of waste for disposal and monitoring of the IWDF for the operational and institutional control period.

2.5 Department of Treasury and Finance (February 2009 to June 2011)

In February 2009, because of a change of government in Western Australia, the 'Works' function of the DHW, was transferred to the Department of Treasury and Finance (DTF).

Responsibility for the management and operation of the IWDF was transferred to the DTF along with other 'works' functions of the DHW at this time.

DTF as the proponent for the IWDF accepted responsibility on behalf of government for ongoing management of the wastes disposed at the IWDF, acceptance of waste for disposal and monitoring of the IWDF for the operational and institutional control period.

2.6 Department of Finance (July 2011 to January 2022)

On 1 July 2011, the Department of Treasury and Finance was renamed the Department of Treasury. At the same time, the State Revenue, Government Procurement, Building Management and Works and Shared Services functions of the Department of Treasury and Finance were transferred to the newly created Department of Finance.

Responsibility for the management and operation of the IWDF was transferred to the Department of Finance along with other 'works' functions of the DTF at this time.

Department of Finance as the proponent for the IWDF accepts responsibility on behalf of government for ongoing management of the wastes disposed at the IWDF, acceptance of waste for disposal and monitoring of the IWDF for the operational and institutional control period.

2.7 Minister for Works (January 2022 to present)

A request to change the nominated proponent from the Department of Finance to the Minister for Works C/- Department of Finance was submitted to the Department of Water and Environmental Regulation on 13 October 2021.

The request was approved by the Minister for the Environment on 21 January 2022.

The Minister for Works is the relevant body corporate with the statutory authority, as an agent of the Crown in right of the State, to carry out the functions relevant to the IWDF.

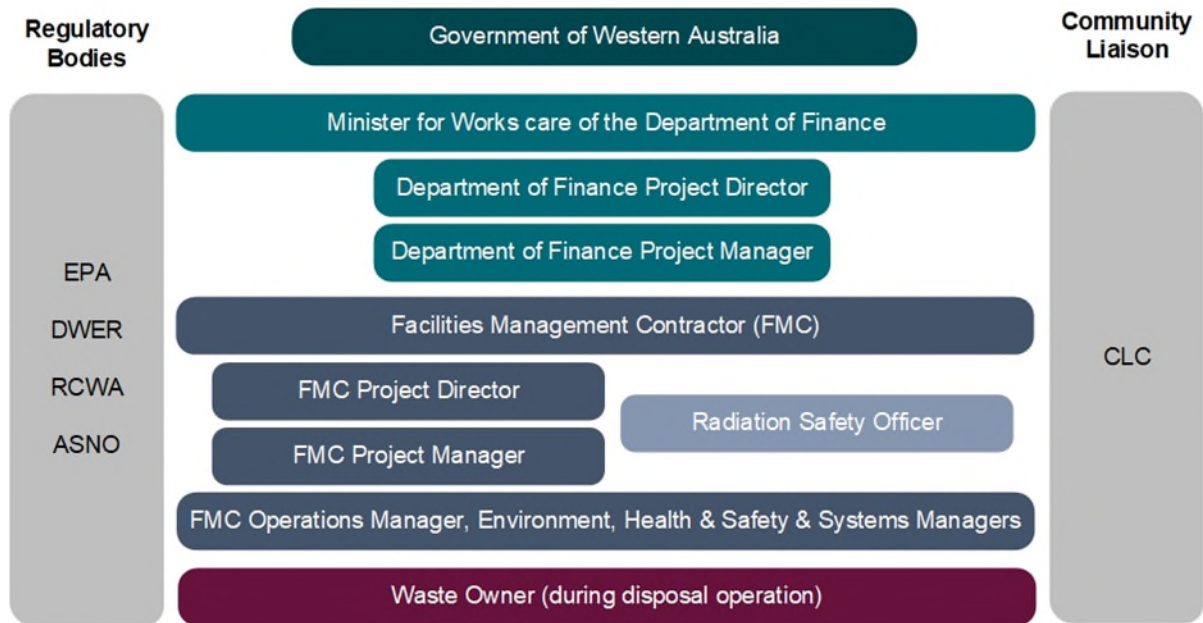
The Department of Finance is the Government agency responsible for assisting the Minister for Works in the administration of the *Public Works Act 1902 (WA)*.

3. Site governance, licences, permits and registrations

3.1 Governance

The governance of the IWDF is illustrated in Figure 2 below.

FIGURE 2 IWDF GOVERNANCE STRUCTURE



Please refer to Section 9: Glossary and abbreviations for definitions of the abbreviations used above.

3.2 Approvals, licences, permits and registrations

3.2.1 Ministerial approval

The environmental impact of the IWDF was assessed by the Environmental Protection Authority (EPA) in the late 1980s under Part IV of the *Environmental Protection Act, 1986* (EP Act). The Minister for the Environment released Ministerial Statement 044, issued under s45 (5) of the EP Act, specifying that the proposal may be implemented under the conditions and commitments as detailed in the statement. Several changes were made to the original statement over the next twenty years. This resulted in the issue of three further ministerial statements. In 2001, Ministerial Statement 562 was issued to consolidate the four earlier ministerial statements into one and to incorporate changes in world’s best practice in the operation of an intractable waste disposal facility.

The IWDF currently operates under Ministerial Statement 562 which was issued in February 2001.

The DWER audits compliance with the conditions of ministerial statements and undertakes enforcement action as appropriate.

The DWER uses a variety of proactive and reactive methods to monitor compliance including audits of proposals, reviews of compliance assessment reports / performance and compliance reports, onsite inspections, and stakeholder engagement.

The results from the compliance audits identify areas to improve proponent's compliance and help in improving future compliance programs and the environmental impact assessment process.

When non-compliance with an implementation condition or proponent commitment of a ministerial statement is identified the proponent is issued with a Notice of Non-Compliance, detailing actions required to rectify the issue and regain compliance.

The Minister for Environment is informed of any non-compliance, which enables a range of actions to be undertaken if required.

3.2.2 Environmental licence

Under Part V of the EP Act the DWER has issued Licence L8190/2007/2 which allows the IWDF to operate as a Category 66 Class V intractable landfill site. The DWER is responsible for monitoring / auditing compliance with the requirements of the licence.

3.2.3 Management order

Management Orders issued under the *Land Administrations Act 1997* vest the reserves upon which the IWDF (Reserve No. 42001) and the access road (Reserve No. 44102) are located with the Minister for Works care of the Department of Finance.

3.2.4 Radiological Council registration

The Radiological Council, an independent expert body, controls the use and disposal of radioactive substances in Western Australia. The Radiological Council is responsible for licencing users of radioactive substances and registering premises where radioactive substances are manufactured, used or stored / disposed. It has a specific role in issuing disposal permits for radioactive waste. Owners must obtain a disposal permit from the Radiological Council before they can dispose of their radioactive waste at the IWDF.

The IWDF is registered with the Radiological Council, and this registration (RS 13/2011 20590) sets conditions, restrictions and limitations for the ongoing management and disposal of radioactive wastes at the IWDF.

Condition 2.2 of Registration RS 13/2011 20590 requires the registrant to ensure that disposals are undertaken in accordance with the Radiation Safety (General)

Regulations, 1983 and Regulation 31(A) Near-surface disposal of radioactive waste as amended. Regulation 31(A) specifies that a person shall not dispose of or permit the disposal of solid radioactive waste by near-surface disposal unless the disposal, the disposal facility, and the disposal site comply with the requirements of the *Code of practice for the near-surface disposal of radioactive waste in Australia (1992)* (Radiation Health Series RHS 35) (NHMRC, 1993).

In October 2018, the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) released the *Code for Disposal Facilities for Solid Radioactive Waste* (ARPANSA, 2018). This code describes the objectives for protection of human health and of the environment, drawing upon international best practice in relation to radiation protection and radioactive waste safety. The safety case and supporting safety assessment provide the basis for demonstration of safety and for authorisation. The safety case and supporting safety assessment will evolve with the development of the disposal facility, and will assist and guide decisions on its siting, design, operation, and closure.

The *Code for Disposal Facilities for Solid Radioactive Waste* (ARPANSA, 2018), together with the *Code for Radiation Protection in Planned Exposure Situations* (Radiation Protection Series C-1) (ARPANSA, 2016), supersedes the *Code of practice for the near-surface disposal of radioactive waste in Australia (1992)* (NHMRC, 1993).

Until the Radiation Safety (General) Regulations, 1983 are updated to include the *Code for Disposal Facilities for Solid Radioactive Waste* all radioactive disposal operations at the IWDF must comply with the requirements of both the *Code of practice for the near-surface disposal of radioactive waste in Australia (1992)* (NHMRC, 1993) and the *Code for Disposal Facilities for Solid Radioactive Waste* (ARPANSA, 2018).

3.2.5 ASNO permit to possess nuclear material

Australia has enacted the *Nuclear Non-Proliferation (Safeguards) Act 1987* to ensure that international obligations are met under the Nuclear Non-Proliferation Treaty. The Australian Safeguards and Non-Proliferation Office (ASNO), located within the Federal Foreign Affairs and Trade portfolio, is the department with responsibility for implementing the requirements of the *Nuclear Non-Proliferation (Safeguards) Act 1987*.

The above Act is concerned with nuclear materials such as uranium, thorium, and plutonium. ASNO has four main areas of responsibility in the nuclear area: the application of safeguards in Australia; the physical protection and security of nuclear items in Australia; the operation of Australia's bilateral safeguards agreements; and contribution to the operation and development of International Atomic Energy Agency (IAEA) safeguards and the strengthening of the international nuclear non-proliferation regime. As there are small quantities of thorium and uranium disposed of at the IWDF, the facility is required by ASNO to have a 'Permit to Possess Nuclear Material'. This

permit (PN 207) requires the holder to report its inventory of nuclear waste to ASNO annually.

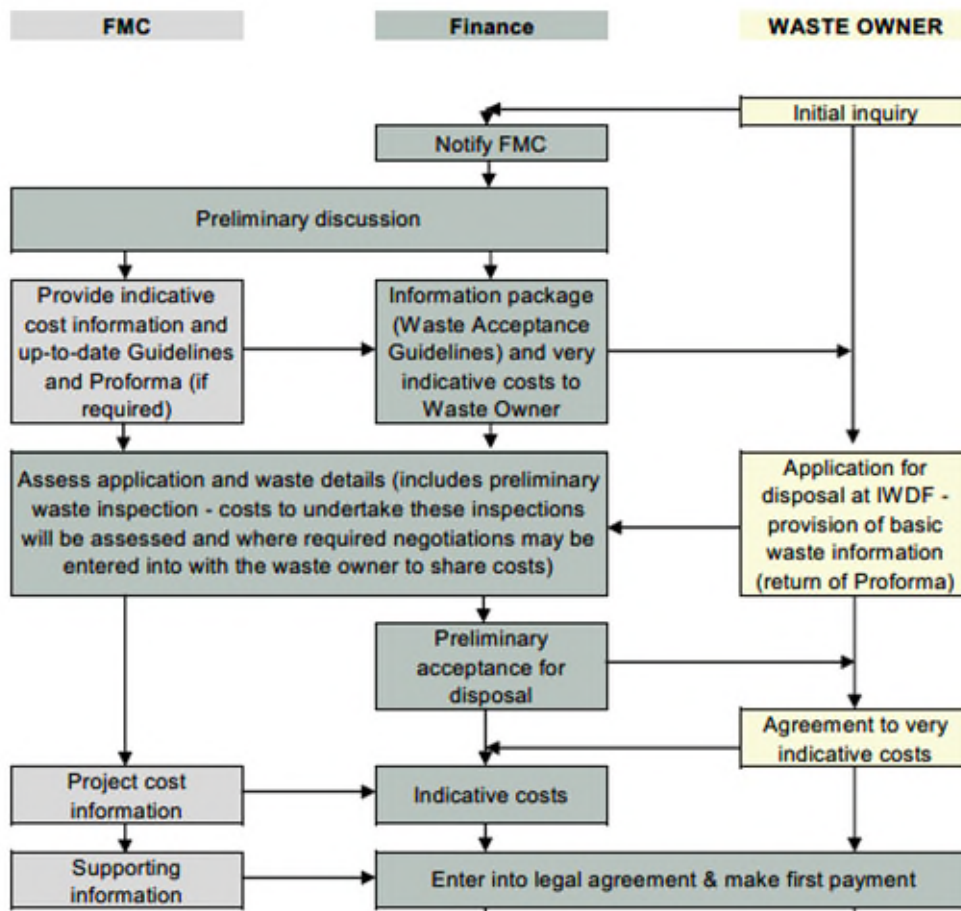
4. Waste disposal

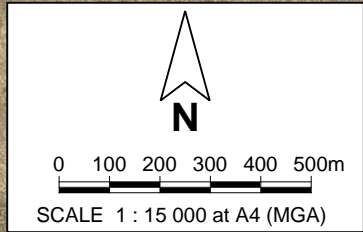
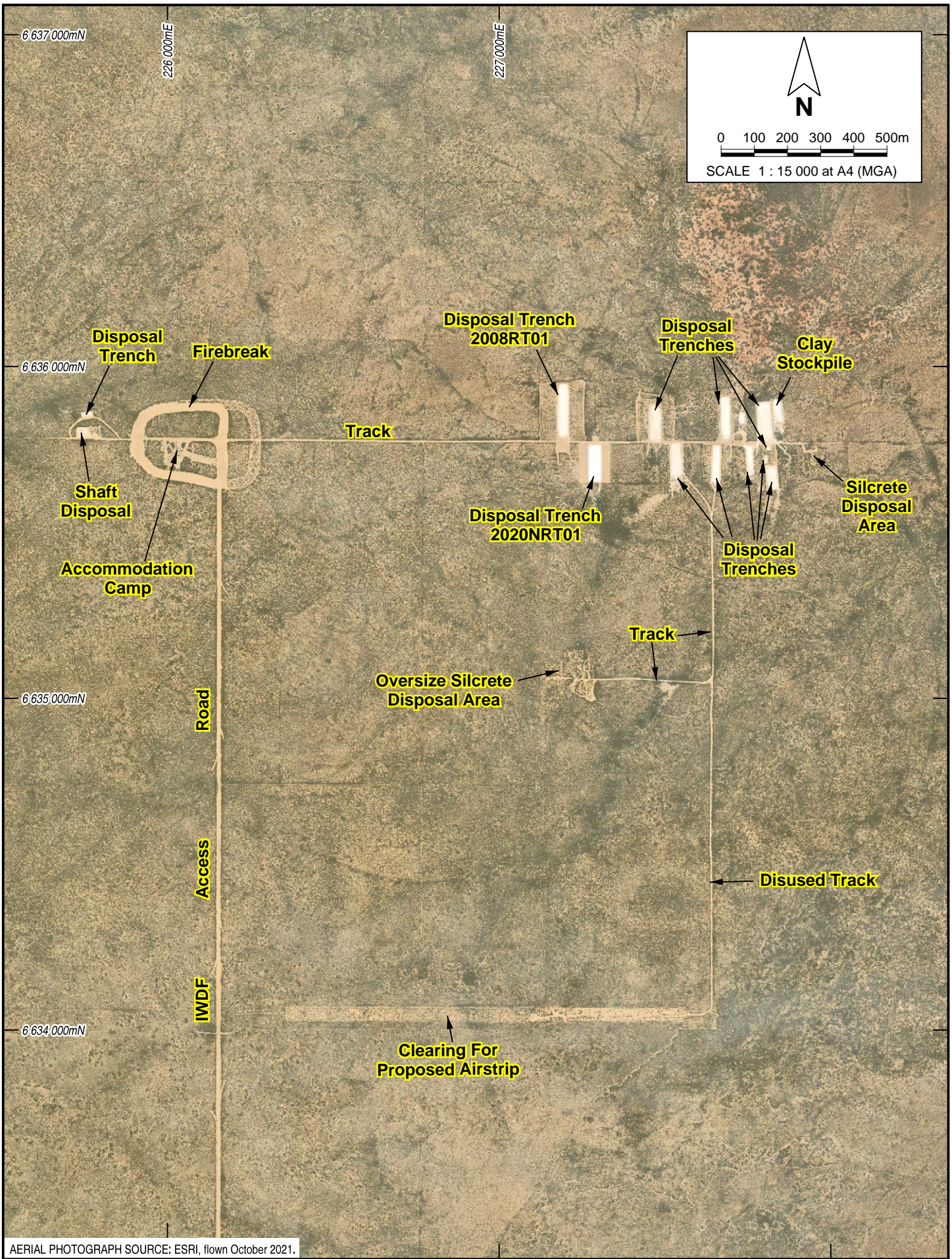
4.1 Typical sequence of activities for undertaking a disposal operation

Undertaking a waste disposal operation involves a wide range of activities beginning with the initial waste disposal inquiry made to the proponent by the waste owner. If the waste is approved for disposal at the IWDF and the waste owner accepts the preliminary costing provided to them, then the operation progresses to project planning, project documentation, and regulatory approvals. The sequence of activities is described or illustrated in more detail in Sections 4.2 to 4.6. The general layout of the IWDF is shown in Figure 3.

4.2 Inquiry and initiation

The procedures for dealing with the initial inquiries and project initiation are illustrated in the flow diagram below.





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Government of **Western Australia**
Department of **Finance**

INTRACTABLE WASTE DISPOSAL FACILITY
MT WALTON EAST, WESTERN AUSTRALIA

Figure 3

GENERAL IWDF LAYOUT

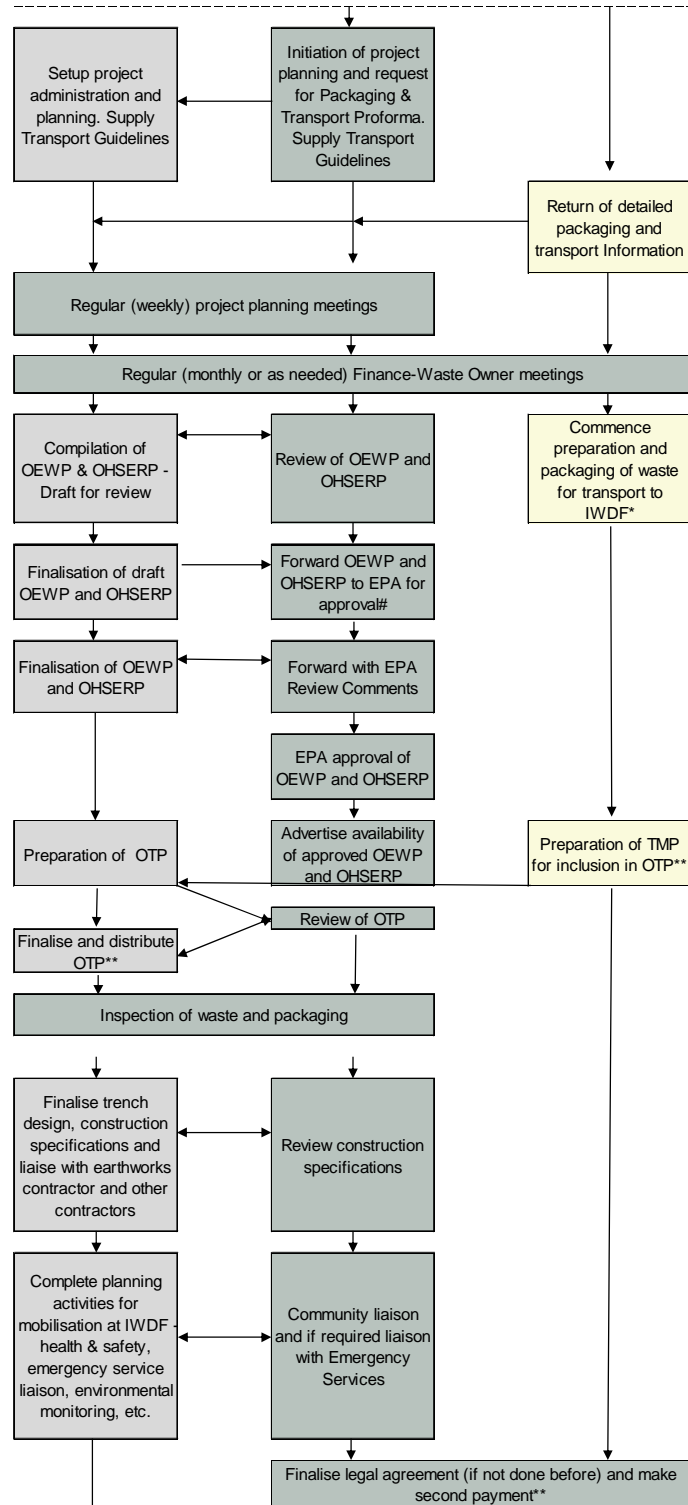
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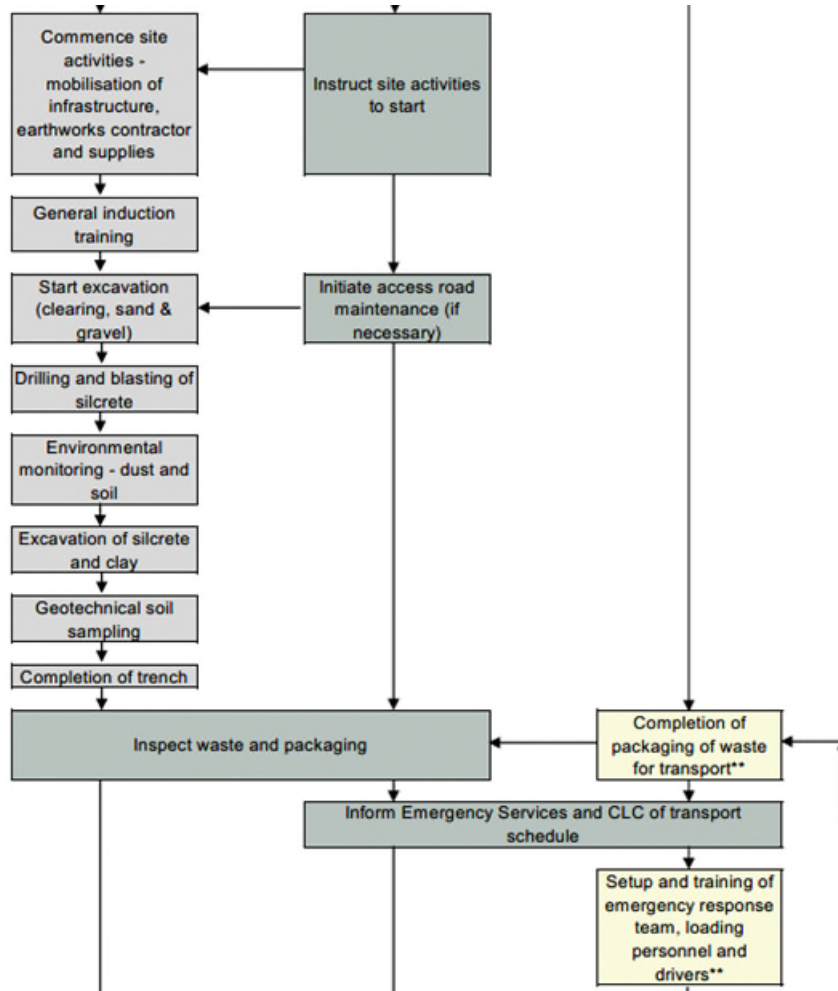
4.3 Planning, documentation, and regulatory approvals

The activities and sequence involved in the planning, documenting, and obtaining the required regulatory approvals are illustrated in the flowchart below.



4.4 Excavation of trench and waste preparation

The sequence of activities for trench excavation and waste preparation are illustrated below.



Excavation of the 2020NRT01 Disposal Trench

4.4.1 Conditioning and packaging the waste

Radioactive waste

The conditioning and packaging requirements for disposal of low-level radioactive waste at the IWDF exceed international standards. Conditioning and packaging are supervised by the IWDF Radiation Safety Officer (RSO), the FMC Project Manager, and where appropriate personnel from the Radiation Health Unit of the Health Department. Each item of low-level radioactive waste is carefully identified, measured, and recorded under strict supervision. The conditioning and packaging of the radioactive waste is then undertaken in accordance with the Radiological Council approved methodology.



Packaged radioactive waste prior to disposal at the IWDF

Chemical waste

Chemical wastes are conditioned according to the requirements of the waste stream. Packaging includes bulka bags, 205 litre steel drums or sea-containers using suitably qualified personnel with appropriate personal protective equipment.

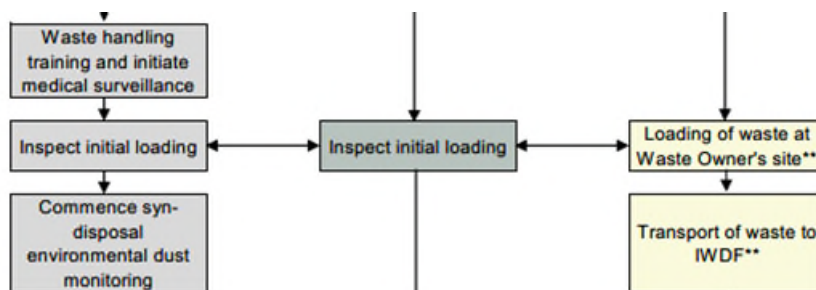


Packaged chemical waste being inspected prior to disposal at the IWDF

4.5 Waste loading and transport

All containers holding waste are labelled according to the requirements of the Dangerous Goods Safety (Road and Rail Transport of Non-Explosives) Regulations 2007 and inspected before being accepted for transport.

The sequence of activities related to waste loading and transport are illustrated below.



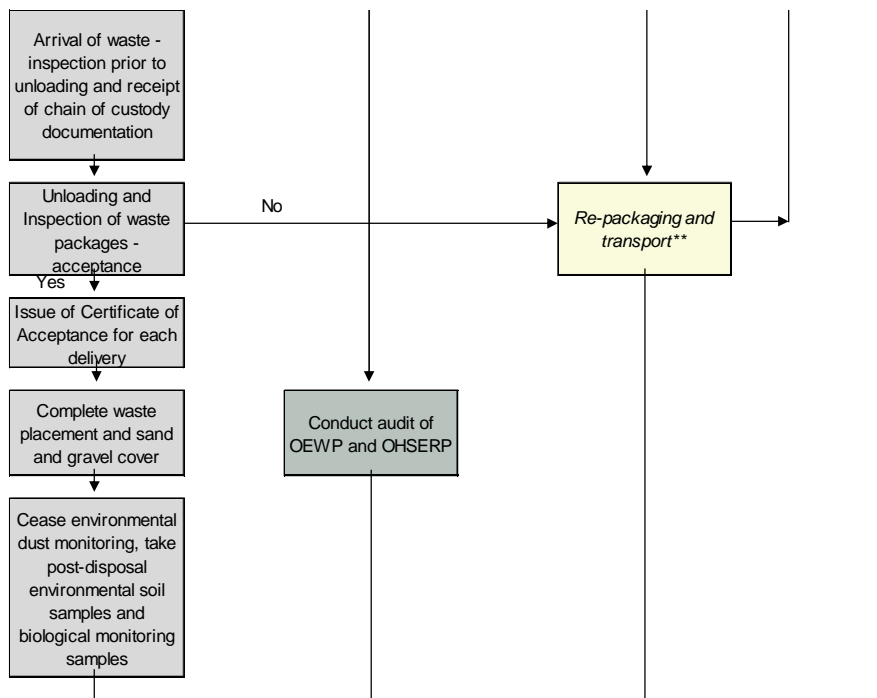
Low-level radioactive wastes are labelled according to the *Code of Practice for Safe Transport of Radioactive Materials* (ARPANSA, 2019). All materials are carried by a contractor licensed to carry radioactive or dangerous goods.

The DWER, and depending on the waste to be transported, the Department of Mines, Industry Regulation and Safety (DMIRS), the Police, the Department of Fire and Emergency Services (DFES), and local authorities along the transport route may be notified when waste is going to be transported.

Waste is transported to the IWDF by the shortest practical route with as few stops as possible. Semi-trailers are generally used to transport waste.

4.6 Waste delivery acceptance and disposal

The sequence of activities for the waste delivery and waste placement in the trench are illustrated below.



Waste is disposed using either shaft or trench burial. These two disposal options are discussed in more detail below.

4.6.1 Shaft burial

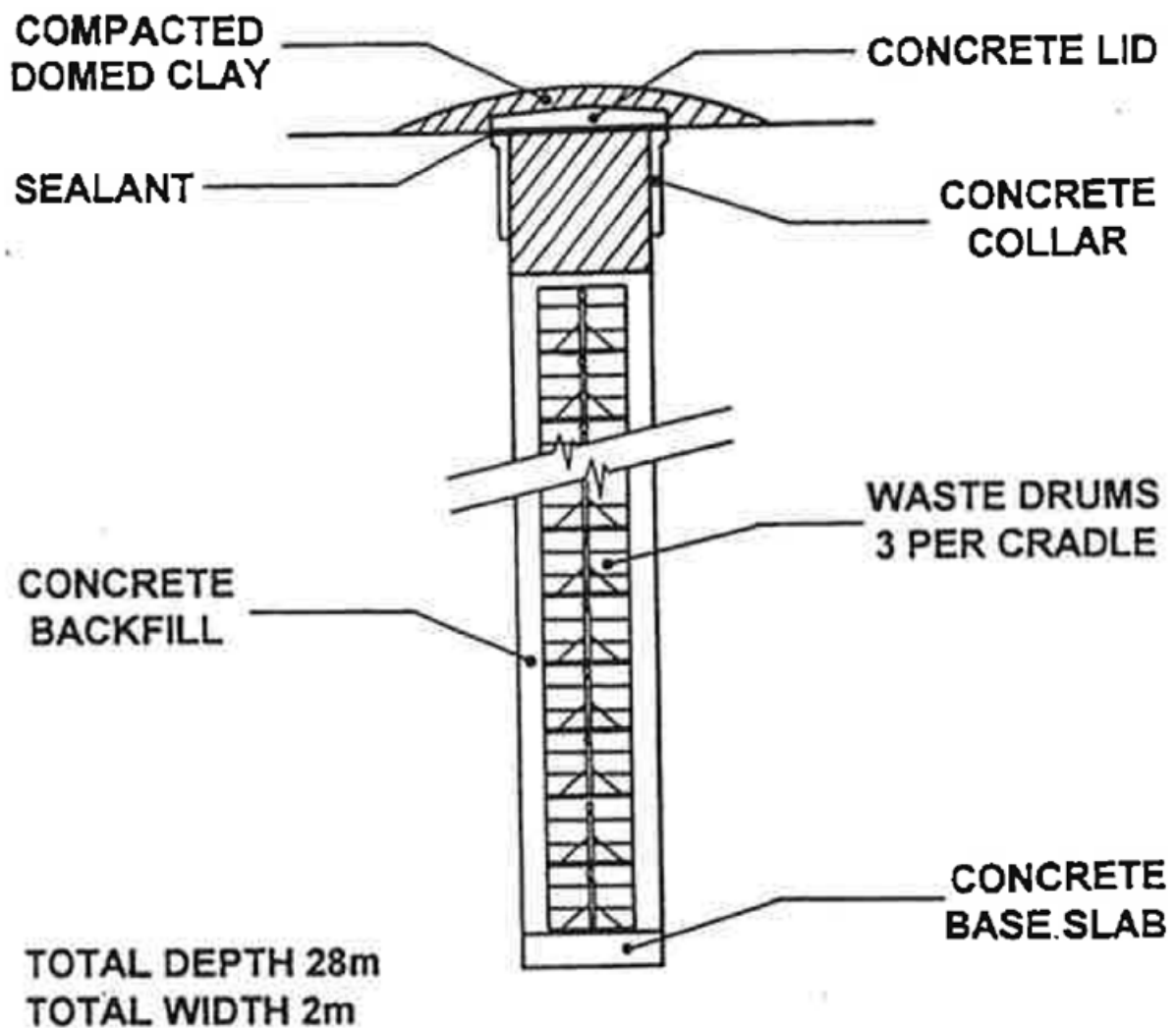
Shaft burial at the IWDF commenced with the excavation of the top few metres of sand and gravel using a backhoe. The hard layer of cemented clay (silcrete) was then blasted and removed. A concrete collar was poured to preserve the top of the shaft. The rest of the shaft was then dug out using pneumatic drills and a vacuum ore-lifter designed to suck clay to the surface.

A concrete base (0.5 m thick) was poured into the shaft. A specially designed steel pallet holding three drums of waste was then lowered into the shaft one at a time. Concrete was poured into the shaft after each pallet was positioned in place.

When all the drums were sealed into position, a final half-metre layer of concrete was poured. The rest of the shaft was backfilled with the clay that was dug out of the shaft. This clay was compacted every metre. A prefabricated concrete lid 200 mm thick and weighing five tonnes – was then placed over the top of the shaft and sealed with a sealant. Finally, a dome of water shedding compacted clay was placed over the concrete lid and a wire fence built around the dome.

Figure 4 provides a schematic shaft disposal design based on the above discussion.

FIGURE 4 SCHEMATIC SHAFT DESIGN



4.6.2 Trench burial

Trenches are the main type of disposal cell used at the IWDF.

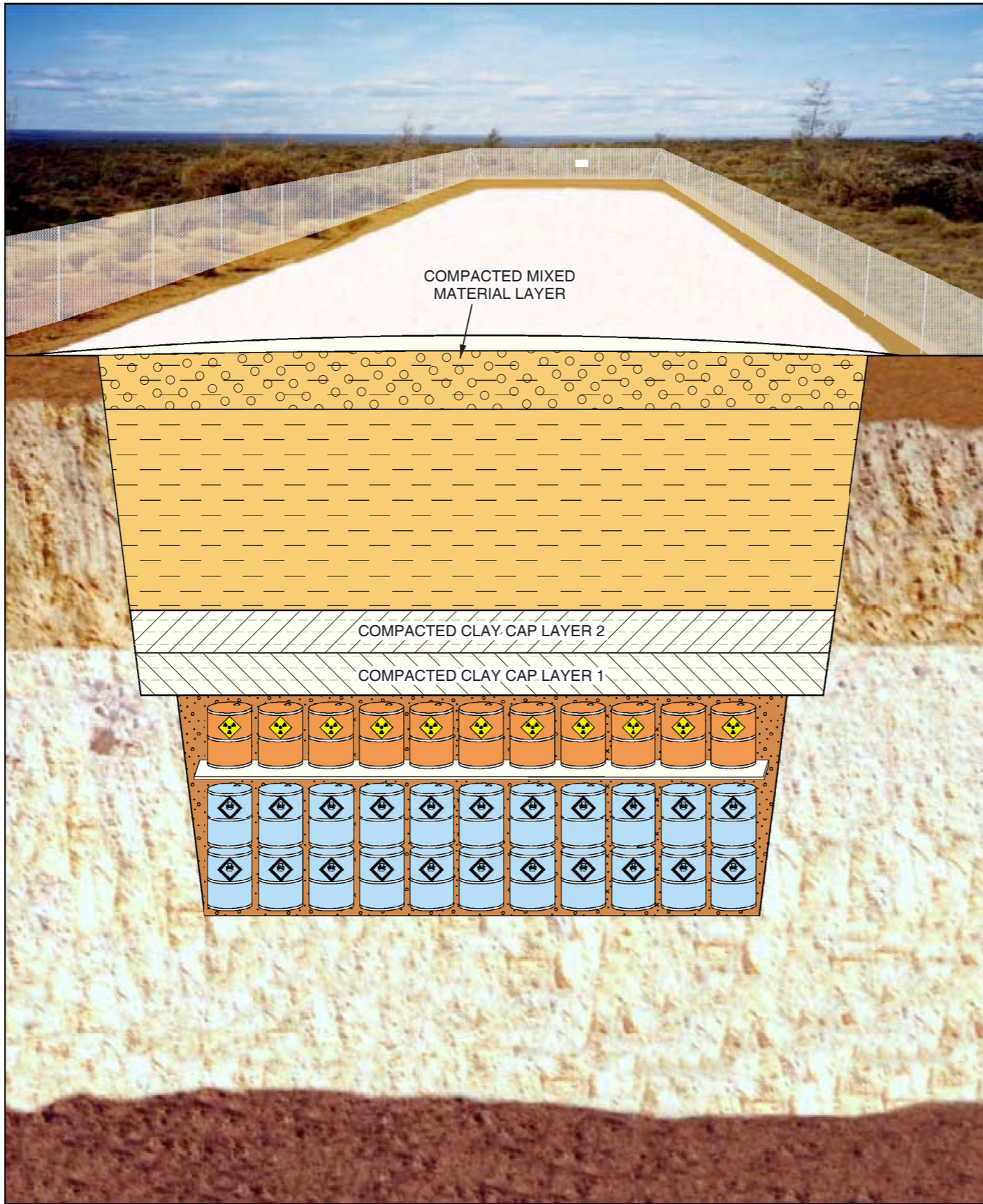
Segregation of the waste from the environment is accomplished by placing the waste into the natural and extensive kaolinite clay horizon underlying the IWDF. Geological investigations indicate that the clay provides an adequate barrier against potential leaching of the waste when combined with the depth and lateral extent of the clay horizon, which is widespread in the region. A natural silcrete horizon, which overlies the clay, affords natural erosion protection to the clay.

The waste disposal cell is constructed such that the waste is a minimum of five metres above the crystalline bedrock, which underlies the in-situ clay. This is to allow for the possible establishment of a future groundwater table. Regular groundwater monitoring at the IWDF indicates that a groundwater table is currently absent (no groundwater has been encountered down to bedrock).

The waste is further segregated from the surface environment by the construction of a compacted multilayer cap above the waste cell. This multilayer cap comprises compacted clay and compacted silcrete/clay material, which is excavated during construction of the disposal trench. The clay cap, silcrete layer and water-shedding clay dome, which comprise the multilayer cap, are placed and compacted to geotechnical specifications to ensure that they are adequate barriers to infiltration of rainwater and erosion.



Figure 5 provides a schematic trench disposal design based on the above discussion.






 FENCED AND SIGNED DISPOSAL COMPOUND




GEOLOGICAL UNITS:

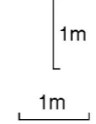
-  NATURAL SAND AND GRAVEL
-  NATURAL SILCRETE
-  NATURAL CLAY
-  CRYSTALLINE BEDROCK

MULTILAYER CAPPING SYSTEM:

-  COMPACTED WATERSHEDDING CLAY DOME
-  COMPACTED SILCRETE/CLAY LAYER
-  COMPACTED CLAY CAP

DISPOSAL CELL:

-  SAND AND GRAVEL COVER
-  LOW LEVEL RADIOACTIVE WASTE
-  CHEMICAL WASTE

 APPROXIMATE SCALE
 (Note that the base of the disposal site is greater than 5m above bedrock)

5. Monitoring the IWDF

5.1 General

The monitoring program at the IWDF involves radiation, environmental and occupational monitoring, on both an ongoing and operational basis.

5.2 Radiation monitoring

Prior to the first radioactive waste disposal campaign at the IWDF, in November 1992, a baseline radiation monitoring program approved by Radiological Council was conducted by an experienced radiation physicist.

This program included baseline measurements of:

- (i) gamma radiation levels
- (ii) radionuclides in air
- (iii) radon concentrations in air
- (iv) radionuclides in soils.

No radionuclides in water were able to be investigated due to the absence of groundwater at the site.

The on-going monitoring program, conducted since 1992, has involved measurements of:

- (i) Gamma radiation levels over the disposal structures and on the perimeters of the disposal compounds. The most recent gamma radiation monitoring was completed in October 2022.
- (ii) Radon concentrations in air in the vicinity of the disposal sites and at a remote site, from 1992 to 1999 and radon and thoron concentrations in the air in 2013 and 2015.
- (iii) Radionuclides in soils, 1992 and 2013.

All data is reported to the RCWA.

When a disposal operation includes or comprises low-level radioactive waste a pre-disposal radiation monitoring program is undertaken. This involves, at a minimum, a gamma radiation survey over the proposed disposal area. The same survey is then

conducted post-disposal to ensure no significant increase in background radiation has occurred.

During disposal of low-level radioactive waste, a personal radiation monitoring program is conducted on the personnel involved in the packaging, loading, transportation, and burial of the waste. The personal radiation monitoring program consists of:

- (i) a short induction on radiation and radiation protection procedures for workers; and
- (ii) personal monitoring for external radiation using Thermo-Luminescent Dosimeters (TLDs) and Personal Electronic Dosimeters (PEDs).

Only minimal exposures above background have ever been recorded and only for those who had been packaging the waste.

5.3 Other monitoring

Monitoring other than for radioactivity at the IWDF includes:

- (i) rehabilitation monitoring;
- (ii) disposal dome (capping) monitoring;
- (iii) groundwater monitoring;
- (iv) biological monitoring;
- (v) dust monitoring; and
- (vi) flora, vegetation, and fauna surveys.

Rehabilitation monitoring occurs annually and involves recording the percentage coverage of vegetation in the rehabilitated areas around each disposal cell, maximum and average height of the plants, and the number of plant types. Photographs are taken at specific locations during each monitoring round for reporting and archiving. Vegetation rehabilitation for all disposal cells established prior to 2000 has been deemed complete therefore these cells are no longer monitored as part of the annual rehabilitation monitoring. The specific photo point locations are shown on Figure 6.

The photographs below, taken October 2008 to October 2023, demonstrate the permanent photographic record for the rehabilitated vegetation growth in the area surrounding the 2008RT01 trench.

2008RT01 rehabilitation monitoring photographs taken October 2008 to 2023



2008 Photo Point Location 3



2010 Photo Point Location 3



2012 Photo Point Location 3



2014 Photo Point Location 3



2016 Photo Point Location 3



2018 Photo Point Location 3



2021 Photo Point Location 3



2023 Photo Point Location 3

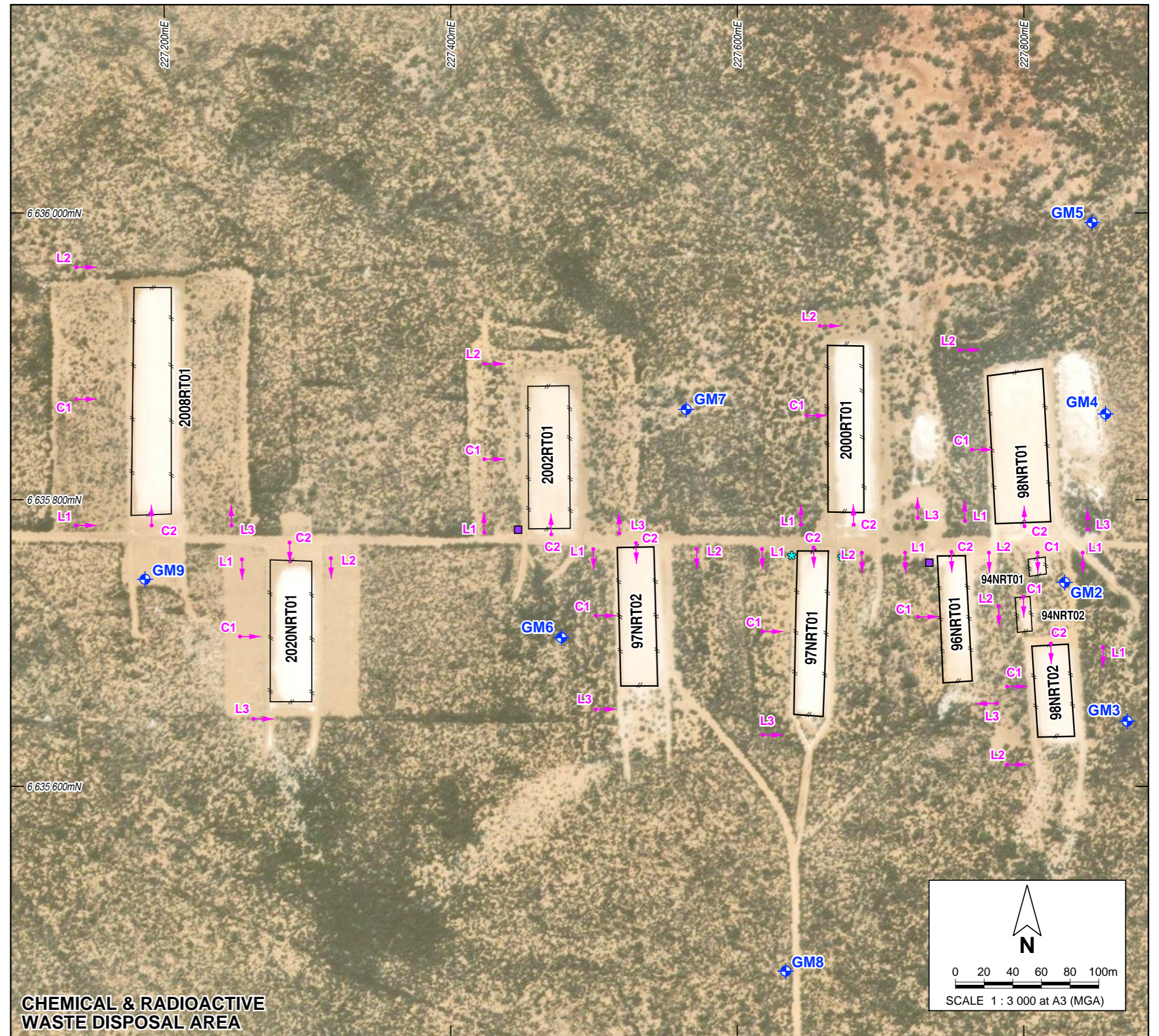
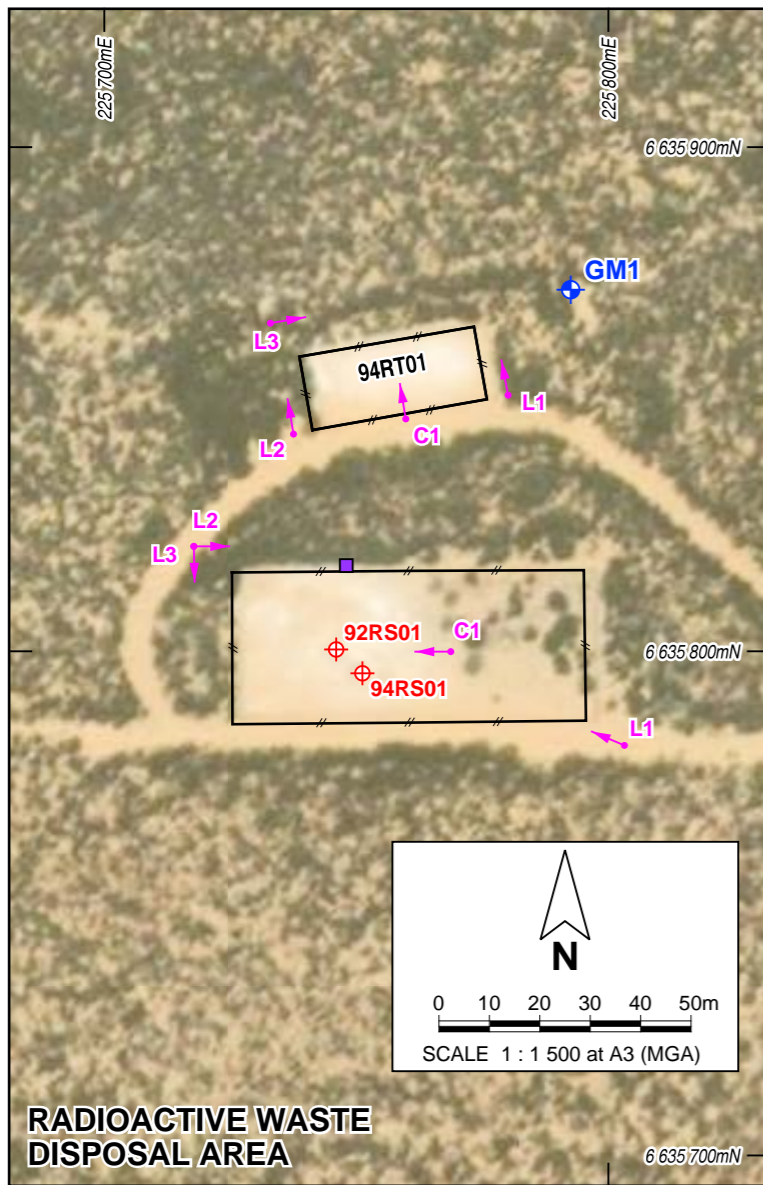
Monitoring of the disposal domes (the water shedding clay caps which overlie each disposal cell) also occurs annually and involves the recording of any erosion channels on the domes (number and depth) and any subsidence features (number and depth). Photographs are also taken at specific sites for each dome (Figure 6).

Groundwater monitoring is completed every six months at the IWDF. There are nine groundwater monitoring bores (Figure 6) all of which have been installed to bedrock. There has been no groundwater detected on the site since the first bore was installed therefore water quality cannot be tested.

Biological monitoring is undertaken for chemical disposal operations. It comprises urine sampling of workers before and after the disposal operation for target chemicals (generally arsenic) depending on what is being disposed of at the site.

Dust monitoring at six locations around each disposal cell is undertaken before, during and after placement of the waste. Soil samples are also taken before and after each operation from the same locations as the dust samples.

The flora and vegetation of the site has been surveyed on several occasions as has fauna at the site. These surveys serve to highlight the presence of any rare and endangered or priority species and help direct the way the site is managed from an ecological perspective.



Legend

- Fence
- 2008RT01** Trench or Shaft ID
- Location of Groundwater Monitoring Bore
- Location of Radioactive Waste Shaft
- Photograph Location and Direction
- C3** Trench Capping Photograph Location ID
- L3** Rehabilitation Photograph Location ID
- Location of Calytrix creswellii P3
- Location of Lepidosperma sp

NOTE: Photograph Location IDs are used in conjunction with Trench IDs.



Government of **Western Australia**
Department of **Finance**

INTRACTABLE WASTE DISPOSAL FACILITY
MT WALTON EAST, WESTERN AUSTRALIA

**GROUNDWATER, TRENCH CAPPING &
REHABILITATION MONITORING LOCATIONS**

Figure 4

Drawn: L. Morton

Date: 12 Sep 2023

Job: DFI2020-001

6. Summary of disposal cells at the IWDF

Since 1992, fourteen disposal cells have been established at the IWDF. For each cell, a summary of waste disposed, and dimensions is provided below. Figure 7 shows the location of each shaft and trench.

6.1 92RS01 - Radioactive waste, Health Department

The waste comprised numerous small radioactive sources including a variety of teaching, research, hospital, and industrial wastes held in store by the Radiation Health Section of the Health Department of Western Australia. The waste was packaged into 60 litre drums that were filled with cement slurry. The 60 litre drums were placed in 205 litre steel drums that were filled with concrete to remove voids. A total of 66 205 litre drums and a one-metre-long cylinder were disposed of at the IWDF by progressively concreting them in place in a 28-metre-deep by 2-metre diameter, shaft located in the Radioactive Waste Disposal Area. The waste is located 5.8 metres below ground level.

6.2 94RS01 - Radioactive waste, Health Department

The waste consisted of numerous small radioactive items held in store by the Radiation Health Section of the Health Department of Western Australia. The waste was packaged into 60 litre steel drums backfilled with cement slurry. The drums were then placed into 205 litre steel drums that were backfilled with cement to remove voids. A total of 69 205 litre steel drums were then progressively concreted into place in a 27-metre-deep by 2-metre diameter shaft located in the Radioactive Waste Disposal Area. The waste is located 5.8 metres below ground level.

6.3 94RT01 - Radium contaminated equipment, CSBP and Farmers Ltd

The waste consisted of process equipment contaminated with radium. The contaminated equipment originated from CSBP & Farmers Ltd and was transported to the IWDF in three six metre shipping containers. The void spaces in the shipping containers were filled with cement slurry at the IWDF. Disposal was in a 40-metre-long, 3-metre-wide and 8-metre-deep trench located in the Radioactive Waste Disposal Area. The waste is located 4.5 metres below ground level.

6.4 94NRT01 - Pesticides, Health Department

The waste consisted of household pesticides stockpiled by the Pest Control Unit of the Health Department of Western Australia. The waste was packaged into 18 205 litre

steel drums, which were then backfilled with cement slurry to preclude voids. The drums then disposed of in a 3.5-metre-long, 2.5-metre-wide, and 4-metre-deep trench located in the Chemical and Radioactive Waste Disposal Area. The waste is located 2.8 metres below ground level.

6.5 94NRT02 - Arsenic waste, Department of Agriculture

Waste consisted of arsenical sheep dip wastes stockpiled by the Department of Agriculture after its use was banned in Western Australia. The waste was packaged in 219 205 litre steel drums, transported to the IWDF, and then disposed of in an 18-metre-long, 5-metre-wide, and 5-metre-deep trench in the Chemical and Radioactive Waste Disposal Area. The waste is located 3.8 metres below ground level.

6.6 96NRT01 - Contaminated soil, Department of Agriculture

Waste consisted of soil contaminated with the organochlorine pesticide DDT and toluene that resulted from the spillage of 20,000 litres of Dichlorodiphenyltrichloroethane (DDT) mixture. The spill occurred from a ruptured tank at the Wongan Hills Agricultural Research Station operated by the then Agriculture Western Australia.

Some bulk waste contaminated with DDT and toluene was also disposed of in the trench. This bulk waste included personal protective equipment worn by people working on the packaging and disposal operation. Also included, was contaminated concrete from the floor of a shed at the research station that was in the path of the spill, and tarpaulins used to cover the spill area at Wongan Hills to prevent rainwater incursion before site remediation.

The waste was packaged in 1,012 two-tonne capacity bulka bags and disposed of in a 55-metre-long, 8-metre-wide, 8-metre-deep trench located in the Chemical and Radioactive Waste Disposal Area. The waste is located 4.5 metres below ground level.

6.7 97NRT01 - Arsenic trioxide, Kanowna Belle Gold Mines

Waste consisted of arsenic trioxide generated as a by-product of gold extraction by Kanowna Belle Gold Mines. The waste was packaged into 986 bulka bags, weighing on average 0.65 tonne. Arsenic levels in the waste averaged 25% and were all below 70%.

The waste was disposed of in a trench in the Chemical and Radioactive Waste Disposal Area that was 9.5 metres deep, 80 metres long and 9 metres wide. The waste is located six metres below ground level.

6.8 97NRT02 - Arsenic waste, Wesfarmers CSBP

Waste consisted of arsenic generated as a by-product of the vetrocoke process in the production of ammonia by Wesfarmers CSBP Ltd at its fertiliser and chemical facility in Kwinana.

The waste was packaged in 1,662 220 litre high-density polyethylene (HDPE) over drums placed within bulka bags, and 308 60 litre HDPE drums with three drums per bulka bag. Used personal protective equipment and materials from the packaging activities were placed in 37 bulka bags and buried in the trench.

Composite and random samples indicated that the arsenic concentration in the waste ranged from 1.5% to 33.6%. The waste was disposed in a 14.3-metre-deep trench in the Chemical and Radioactive Waste Disposal Area, with base dimensions of approximately 55 metres long and 7 metres wide. The waste is located nine metres below ground level.

6.9 98NRT01 - Arsenic trioxide waste, Kanowna Belle Gold Mines

Waste comprised of arsenic trioxide waste generated as a by-product of gold extraction by Kanowna Belle Gold Mines. The waste was packaged into 748 bulka bags, weighing on average 0.65 tonne. Arsenic levels in the waste ranged from 2% to 50% arsenic (average 27%). The waste was disposed of in the Chemical and Radioactive Waste Disposal Area in a 12.4-metre-deep trench with base dimensions of approximately 42 metres long and 12 metres wide. The waste is located eight metres below ground level.

6.10 98NRT02 - PCB contaminated soil, Stephenson and Ward Site

The waste comprised polychlorinated biphenyl (PCB) contaminated soil from the remediation of the Stephenson and Ward incinerator site in Welshpool. The waste was packaged into 103 bulka bags weighing 1.2 to 2.0 tonnes. PCB concentrations in the waste varied between 59 to 9,200 milligrams per kilogram. The waste was disposed of in the Chemical and Radioactive Waste Disposal Area in a 12.4-metre-deep trench with base dimensions of approximately 13 metres long and 8.5 metres wide. The waste is located 7.5 metres below ground level.

6.11 2000RT01 - Radioactive and chemical waste, various waste owners

The 2000 disposal at the IWDF involved the burial of 2,905.8 cubic metres of radioactive and non-radioactive wastes, originating from twelve different companies and government agencies.

Excavation began in early January, with the construction of a specifically designed disposal trench in the Chemical and Radioactive Waste Disposal Area, measuring 56 metres long, 12 metres wide and 13 metres deep.

Acceptance of chemical wastes commenced in early March and was completed by mid-April. The first consignment of waste consisted of 1,483 bulka bags of arsenic powder, and 96 bulka bags of used filters and arsenic contaminated personal protective equipment from Kanowna Belle Gold Mines. Following this, 192 205 litre drums of arsenic sludge from vetrocoke processes from Wesfarmers CSBP, 20 205 litre steel drums of vanadium powder and six 205 litre drums of arsenic trioxide and dried ferric/calcium arsenate sludge from AMMTEC Pty Ltd were disposed. Arsenic contaminated wastes packaged in 23 205 litre drums, one hazspill drum and three steel bins of arsenic were also accepted at the site from Agriculture Western Australia. In addition to this 240 205 litre steel drums, packaged in steel bins from Nufarm Pty Ltd, containing mixed organic chemicals originating from pesticides manufacture, were also disposed.

Following the burial of all the chemical wastes, 64 205 litre steel drums of low-level radioactive waste were disposed of. A specially constructed clay barrier separated the radioactive and chemical waste.

The Health Department made up most of the radioactive waste consignment with 50 205 litre drums of exit signs and gauge sources. The Department of Conservation and Land Management (2 205 litre drums of soil moisture gauge sources), Radiation Safety Services (4 205 litre drums of industrial gauge sources), Simsmetal (1 205 litre drum of contaminated scrap metal), Agriculture Western Australia (4 205 litre drums of soil moisture gauge sources), North Ltd (1 205 litre drum containing an XRF instrument source) and Advanced Manufacturing Technology Centre (2 205 litre industrial gauge sources) constituted the rest of the consignment.

Construction of the water shedding dome for the trench was completed and the site demobilised in early June. The waste is located eight metres below ground level.

6.12 2002RT01 - Radioactive and chemical waste, various waste owners

The 2002 disposal was conducted between April and October 2002 and involved the burial of radioactive and non-radioactive wastes, originating from six different companies and government agencies.

The chemical and low-level radioactive wastes were co-disposed in a trench, designated Trench 2002RT01, in the Chemical and Radioactive Waste Disposal Area at the IWDF site.

The chemical waste consisted of 21 six metre and one 12 metre sea containers and 92 205 litre drums of arsenic trioxide contaminated solids from the decommissioning of plant at Wesfarmers' Kwinana Fertiliser Operation and 30 205 litre drums of arsenic based products collected during the Chem Collect program.

Following burial of the chemical waste a clay barrier was constructed to ensure separation of the radioactive waste from the chemical waste and then the 5 205 litre drums and one concrete encased safe containing low level radioactive waste were placed in the trench. A multi-layer, compacted cap was then constructed to secure the waste.

The radioactive waste was packaged into 60 litre steel drums backfilled with cement slurry. The drums were then placed into 205 litre drums that were backfilled with cement to remove voids.

The disposal trench was constructed to a depth of 14.6 metres, a width of 12 metres and a length of 19 metres. Construction of the water shedding dome for the trench was completed and the site demobilised in early October. The waste is located 9.2 metres below ground level.

6.13 2008RT01 - Radioactive and chemical waste, various waste owners

The 2008 disposal was conducted between January and October 2008 and involved the burial of radioactive and non-radioactive wastes, originating from eleven different companies, private citizens, and government agencies.

The chemical and low-level radioactive wastes were co-disposed in a trench, designated Trench 2008RT01, in the Chemical and Radioactive Waste Disposal Area.

The chemical waste consisted of 3,564 flexible intermediate bulk containers (FIBCs) of arsenic trioxide fume waste generated as a by-product of tantalum processing from Talison Minerals in Greenbushes, Western Australia.

Following the burial of the chemical waste a clay barrier was constructed to ensure separation of the radioactive waste from the chemical waste and then 62 205 litre steel

drums containing low level radioactive waste were placed in the trench. A multi-layer, compacted cap was then constructed to secure the waste.

The radioactive waste was packaged into 60 litre steel drums backfilled with cement slurry. These drums were placed into 205 litre steel drums that were backfilled with cement to remove voids.

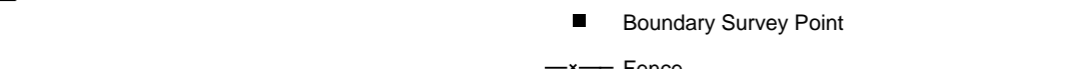
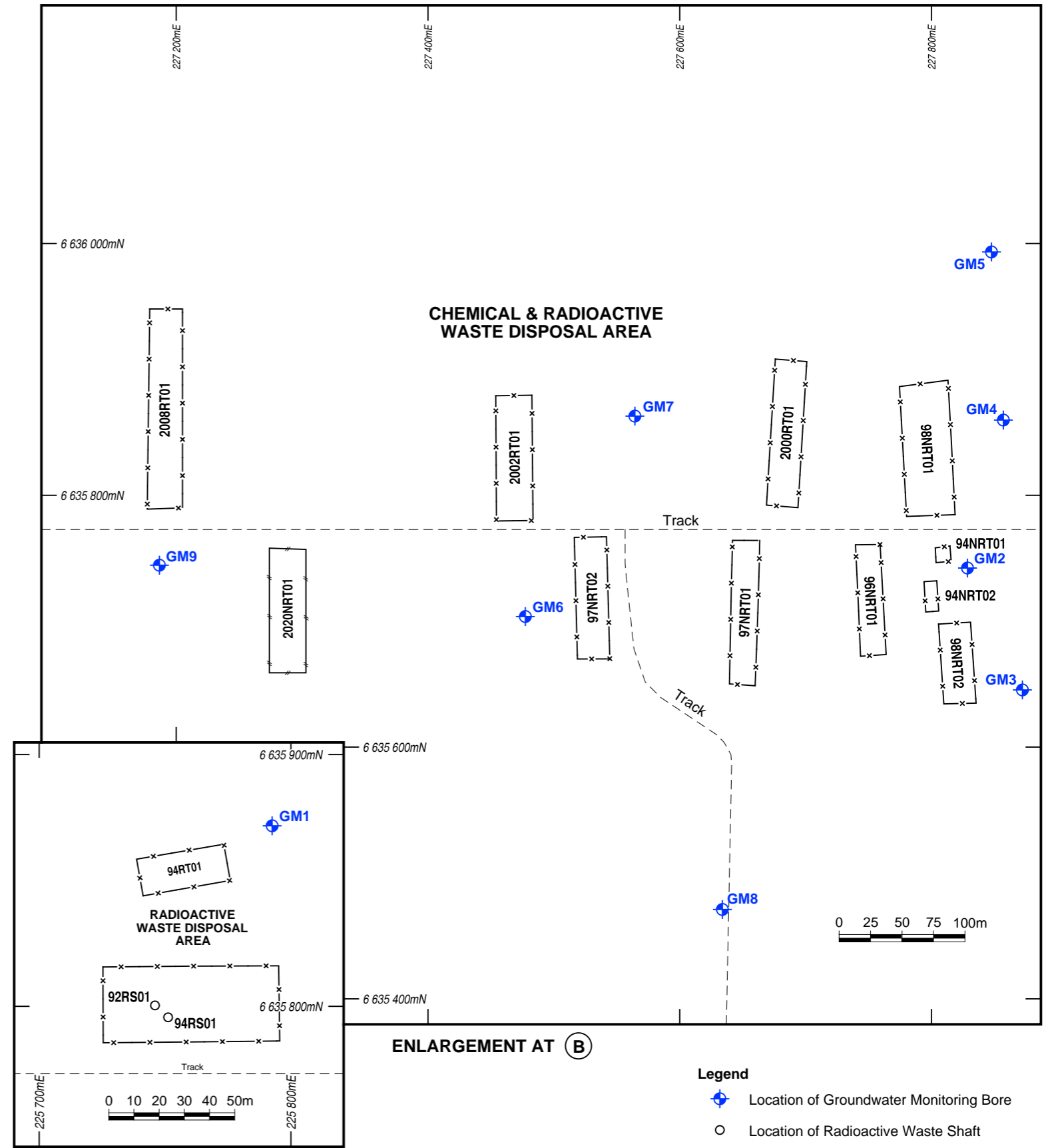
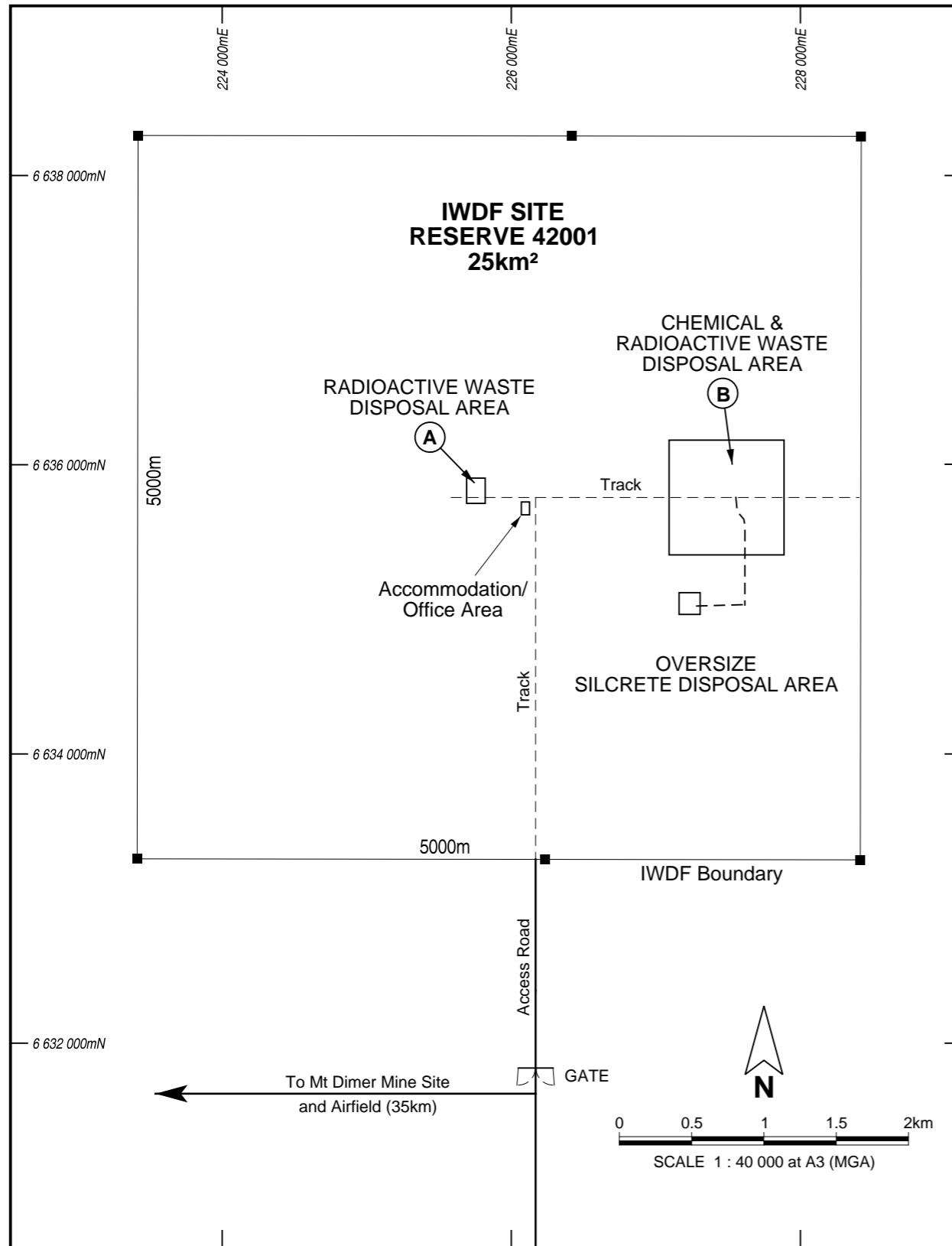
The disposal trench was constructed to a depth of 14 metres, a width of 26 metres and an overall length of 147 metres. Construction of the water shedding dome for the trench was completed and the site demobilised in early October. The waste is located 8.5 metres below ground level.

6.14 2020NRT01 - Contaminated piping, Water Corporation

The 2020 disposal operation was conducted between February and June 2020. The chemical wastes, originating from the Water Corporation, were disposed in a trench designated 2020NRT01 in the Chemical and Radioactive Waste Disposal Area.

Waste disposed consisted of 451 205 L steel drums, 29 1,000 L intermediate bulk containers (IBCs) containing bituminous pipe coating contaminated with asbestos and creosote which included polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs), one sea container containing contaminated solids and 1,200 lineal metres of pipe with bituminous pipe coating attached.

The disposal trench was constructed to a depth of 14 metres, a width of 26 metres and an overall length of 73 metres. The waste is located 8.5 metres below ground level.



- Legend**
- Location of Groundwater Monitoring Bore
 - Location of Radioactive Waste Shaft
 - Boundary Survey Point
 - Fence

BURIAL CODES

92RS01	= 1992, Radioactive waste shaft, Number 1
94RT01	= 1994, Radioactive waste trench, Number 1
94NRT01	= 1994, Non-radioactive waste trench, Number 1
2000RT01	= 2000, Radioactive and chemical waste trench, Number 1

DISPOSAL LEGEND

92RS01	Low level radioactive waste
94RS01	Low level radioactive waste
94RT01	Low level radioactive industrial equipment
94NRT01	Pesticide / household hazardous waste
94NRT02	Arsenic sheep dip waste
96NRT01	Pesticide contaminated soil
97NRT01	Arsenic trioxide powder
97NRT02	Arsenic waste
98NRT01	Arsenic trioxide powder
98NRT02	PCB contaminated soil
2000RT01	Low level radioactive and chemical waste
2002RT01	Low level radioactive and chemical waste
2008RT01	Low level radioactive and chemical waste
2020NRT01	Bitumous Waste

<p>Government of Western Australia Department of Finance</p>	<p>INTRACTABLE WASTE DISPOSAL FACILITY MT WALTON EAST, WESTERN AUSTRALIA</p>	<p>Figure 7</p>
	<p>GENERAL LAYOUT OF WASTE DISPOSAL CELL LOCATIONS AT THE IWDF</p>	
<p>Drawn: L. Morton</p>	<p>Date: 18 Nov 2020</p>	<p>Job: DFI2020-001</p>

DFI2020-001_PROM-007.dgn

7. Environmental, Health and Safety and Quality Management System

7.1 Overview

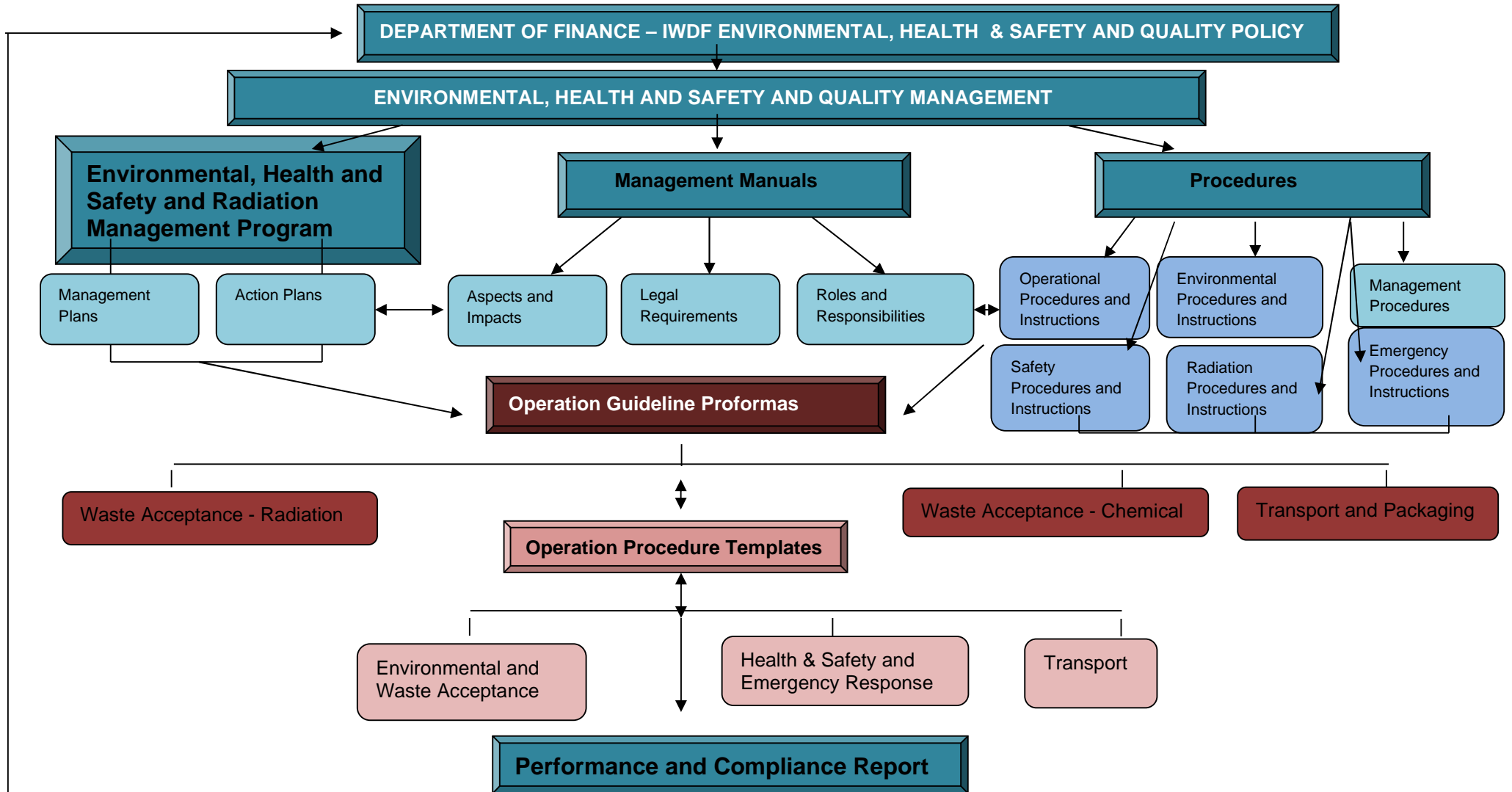
The IWDF Environmental, Health and Safety and Quality Management System (EHSQMS) is designed to identify areas of actual or potential environmental risk resulting from activities at the IWDF and formulate procedures and objectives which minimise or eliminate these risks.

The EHSQMS integrates environmental, health and safety and quality management into the IWDF's daily management, long-term planning, and other management systems, and ensure Finance maintains a high level of environmental performance.

The FMC, on behalf of Finance, provide the resources required to achieve a quality service to customers, ensure employee work satisfaction and safety, and guarantee the community sound environmental performance through responsible and informed practices and decision making.

The EHSQMS consists of the following components, as summarised in Figure 8 below.

FIGURE 8 PRINCIPAL ENVIRONMENTAL HEALTH AND SAFETY AND QUALITY MANAGEMENT SYSTEM DOCUMENTS



7.2 Management manuals

There are two management manuals which contain central information about the management of the IWDF and provide an overview of the system.

The Finance management manual provides details on the IWDF site and an overview of the components of the management system and how they interconnect.

The Finance manual also contains the three sub-components detailed below:

- a) *Legal Register*: The two legal registers detail the major Commonwealth and State legislation which the IWDF must adhere to.
- b) *Aspects and Impacts Register*: Identifies all aspects of activities at the IWDF and provides environmental, socio-political, legal and health and safety consequence and risk ratings for the impacts of each aspect.
- c) *Roles and Responsibilities*: Details the responsibilities and activities of each position involved in the management of the IWDF.

The FMC manual highlights the FMC's status and details the structure of the FMC procedures and their interaction with the Finance system.

7.3 Environmental, Health and Safety Management Program

The Environmental Health and Safety Management Program provides the basis for the establishment and maintenance of effective management programs to achieve the standards, objectives, and targets for the IWDF, and to enable continual improvement in performance. It comprises management plans and action plans which are further described below.

7.3.1 Management plans

These management plans are summary documents which have been developed to provide high level management goals, objectives, and targets for the following aspects of the IWDF's activities:

- flora and fauna;
- water;
- air quality;
- decommissioning and rehabilitation;
- health and safety;
- emergency response;

- radiation;
- transport;
- waste acceptance;
- community liaison; and
- management review.

The management plans summarise the methods (i.e., procedures and operational controls) that are in place and must be maintained to achieve the on-going management goals, objectives, and targets, and hence sustain operational performance.

7.3.2 Action plans

The Action Plans detail specific improvement objectives, both long and short term, which strive for continual improvement in performance and provide quantitative targets, timeframes, and personnel for achieving these objectives.

7.4 Procedures

7.4.1 Operation guidelines

These are templates which have been developed to manage the performance of specific tasks related to disposal operations. Guidelines for the following elements have been developed:

- environmental and waste acceptance (radioactive and chemical waste);
- health and safety; and
- packaging and transport.

7.4.2 Operation procedures

When a disposal operation is planned the operation procedure templates are completed to reflect the waste types and operation. Once completed and approved the procedure templates become the operation procedures associated with that disposal operation.

7.4.3 Management procedures

Each procedure defines the purpose, scope, and methodology of a set of systematic and related tasks and details the “*who, what, where, when, how and why*” of those tasks to allow the tasks to be undertaken in the manner required by best practice.

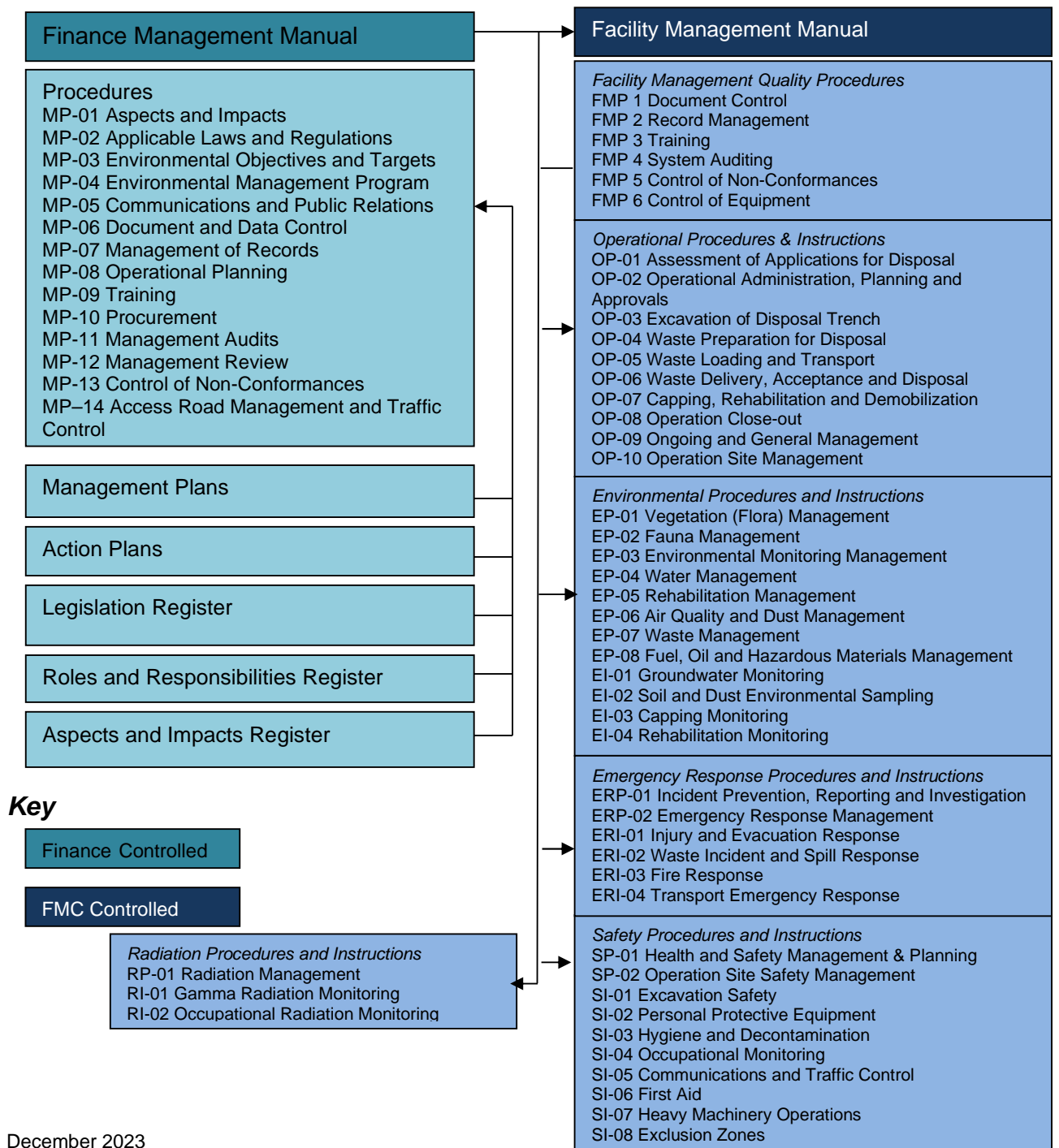
While each procedure is related to a specific activity or group of related activities, they are generally classified into six major groups:

- Management Procedures;
- Operational Procedures;

- Environmental Procedures;
- Health and Safety Procedures;
- Emergency Response Procedures; and
- Radiation Procedures.

The Management Procedures relate predominately to activities which are undertaken by Finance; however, the FMC also has Management Procedures. All other procedure types relate to tasks completed by the FMC. A list of all procedures and who is responsible for their management is detailed in Figure 9 below.

FIGURE 9 IWDF PROCEDURE STRUCTURE



7.5 Performance and Compliance Report

This is an **annual** report prepared on behalf of Finance. It describes the IWDF's compliance with the requirements of:

- Ministerial conditions and commitments;
- Management plans;
- Management system procedures; and
- Licences, registrations, and permits.

The annual Performance and Compliance Report (PCR) also reports on monitoring and all other activities undertaken at the IWDF during the reporting year.

8. References

ARPANSA (2016) *Code for Radiation Protection in Planned Exposure Situations* (Radiation Protection Series C-1).

ARPANSA (2018) *Code for Disposal Facilities for Solid Radioactive Waste*, October 2018, (Radiation Protection Series C-3).

ARPANSA (2019) *Code of Practice for Safe Transport of Radioactive Materials*, March 2019, (Radiation Protection Series C-2 (Rev. 1)).

DWER (2019) *Landfill Waste Classifications and Waste Definitions 1996* (as amended December 2019), Western Australia.

NHMRC (1993) *Code of practice for the near-surface disposal of radioactive waste in Australia (1992)*, (Radiation Health Series RHS 35).

9. Glossary and abbreviations

Acceptance Criteria Criteria which describe the properties and characteristics of waste and packaging, which must be complied with for waste to be accepted for disposal at the IWDF.

ARPANSA Australian Radiation Protection and Nuclear Safety Agency.

ASNO Australian Safeguards and Non-proliferation Office.

CLC Community Liaison Committee.

DWER Department of Water and Environment Regulation.

EHSQMS Environmental, Health and Safety and Quality Management System.

EPA Environmental Protection Authority.

Finance The Department of Finance is the Government agency responsible for assisting the Minister for Works in the administration of the *Public Works Act 1902 (WA)*. The Minister for Works is the relevant body corporate with the statutory authority, as an agent of the Crown in right of the State, to carry out the functions relevant to the IWDF.

FMC Facility Management Contractor.

Guideline	Documents which give guidance on aspects such as waste acceptance for disposal, waste packaging, and transport of waste to the IWDF.
Intractable Waste	Waste that is a management problem by virtue of its toxicity or chemical or physical characteristics which make it difficult to dispose or treat safely (Landfill Waste Classifications and Waste Definitions 1996 (as amended December 2019), Western Australia: DWER, 2019).
IWDF	Intractable Waste Disposal Facility, located at Mt Walton East, Western Australia.
NHMRC Packaging	National Health and Medical Research Council. Primary form of containment for the waste.
RSO	Radiation Safety Officer.
Waste Owner	Any natural person, statutory body, or corporation, including an authorised delegate, who may be the original waste producer, or may have subsequently assumed ownership of waste, who proposes to dispose of their waste at the IWDF.
Waste Package	The waste and any packaging that will be disposed at the IWDF (disposal unit).
WM (WA)	Waste Management (WA) a body corporate of the then Department of Environmental Protection.